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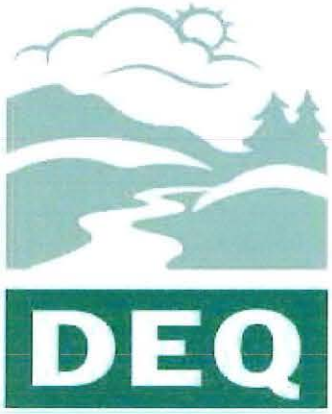
Part 2 of 3

OREGON
ENVIRONMENTAL QUALITY
COMMISSION MEETING
MATERIALS 12/04/2003



State of Oregon
Department of Environmental Quality

State of Oregon
Department of Environmental Quality Memorandum

To: Environmental Quality Commission **Date:** December 3, 2003

From: Stephanie Hallock, Director

Subject: Director's Dialogue

Funding Committed for McCormick & Baxter Superfund Cleanup
In early October, I briefed you on our efforts to solicit additional funding for clean-up work that needed to be done at the McCormick & Baxter Creosoting Company site – a federally listed Superfund site on the banks of the Willamette River, within the boundaries of the more recently designated Portland Harbor Superfund site (see Attachment A for more information). To date, more than $22 million, including $8 million from Oregon, has been invested to address extensive creosote and pentachlorophenol contamination from wood treating activities conducted at the site from the 1940's to 1991. In July, the Environmental Protection Agency (EPA) made the decision not to fund the next step of the project for fiscal year 2004 (approximately $12 million to clean up sediments by covering them with a cap). As a result, we began aggressively pursuing future funding from EPA, working with the Governor, EPA Region 10, EPA Headquarters and the White House. When President Bush visited Oregon this fall, Governor Kulongoski made a personal request to him for the funding to complete the cleanup.

Our efforts paid off in late October when EPA announced they would deliver the $12 million necessary to finish the McCormick and Baxter project. Marianne Horinko (then Acting Administrator of the US EPA), Governor Kulongoski, Mayor Vera Katz and EQC Chair Mark Reeve gathered on the banks of the Willamette River to announce the good news and then tour the project site. With these funds, we expect to complete the cleanup by 2005, thus controlling toxic pollution to the river and making the area safer for people, fish and wildlife.

Oregon Takes Leadership Role in Environmental Council of the States
In mid-November, I was elected Secretary-Treasurer of the Environmental Council of the States (ECOS), a national non-profit, non-partisan association of state environmental directors that works to improve coordination between states and the EPA. Other officers include President Chris Jones from Ohio, Vice President Steve Thompson from Oklahoma, and Past President Ron Hammerschmidt from Kansas. Most states belong to ECOS, though the association is now heavily influenced by Midwestern states and air quality issues are often the most prominent. ECOS affects the state-EPA relationship primarily through adopting resolutions that express the interests of the state agency directors. As an example of a current ECOS initiative, I am part of a group that is working to better align the strategic planning processes of the states and EPA, with a goal of delivering federal funds in a coordinated way to achieve the most environmental gain for states and regions. In addition to holding the office of Secretary-Treasurer, I am also a member of the ECOS Planning Committee, Cross Media Committee and Environmental Compliance Committee, and DEQ employees in air, water and land quality programs are connected to various other ECOS initiatives.

Governor Calls for an Evaluation of the Oregon Plan for Salmon and Watersheds
The Governor's Office has asked state natural resource agencies to undertake an evaluation of the Oregon Plan for Salmon and Watersheds, a statewide initiative launched by Governor Kitzhaber in 1997 to restore declining salmon stocks and improve watershed health. The evaluation will focus specifically on coastal coho (the "evolutionary significant unit" ranging from Cape Blanco north to the mouth of the Columbia River). Over the next several months, agencies will assess the extent to which Oregon Plan activities have addressed the key limiting factors affecting the coho populations and the likelihood that adequate measures are in place to ensure their recovery. Agencies and others will use the findings to hone our Oregon Plan efforts to ensure we are focusing on the salmon's most important needs. The evaluation will also be used to determine whether conditions are good enough to warrant some level of "lifting" of Endangered Species Act protections for the coastal coho. DEQ's role includes helping to design the evaluation approach, analyzing data, and pulling together a qualitative assessment of water quality programs and measures relative to the needs of salmon. Our data on water quality and instream habitat will be a cornerstone of the evaluation, which is planned for completion in the spring of 2004.

Governor Focuses on Renewable Energy
In November, the Governor's office formed an interagency workgroup charged with developing a renewable energy / energy efficiency strategy that will create jobs, support rural economies, help with energy price stability and protect environmental quality. Members of the workgroup include the Oregon Departments of Energy, Forestry, Agriculture, Water Resources, Economic and Community Development, Administrative Services and DEQ. David Van't Hof, one of the Governor's Natural Resources Advisors, directed the group to come up with an action plan to recommend to the Governor for the next two to five years. The Department of Energy is in the lead on this with other agencies providing supporting information. Potential energy fuels the workgroup is looking at include biomass, biofuels, geothermal, hydroelectric, ocean current, solar and wind. At this point, the renewable energy workgroup is a stand-alone effort, but it is possible it could be rolled into the sustainability and climate change initiatives in the near future.

Brownfields Conference Draws Over 4,000 Participants to Portland
Each year, the Environmental Protection Agency hosts a national conference to spotlight efforts to clean up contaminated properties so they can be returned to productive use. These properties, known as "brownfields," represent an opportunity to enhance both the environment and economy by taking care of hazardous pollution problems and producing lands available for future development. In late October, DEQ helped host in Portland the largest ever national Brownfields conference, drawing over 4,000 people to learn from Oregon's successes in brownfields redevelopments. At the conference, DEQ was acknowledged for our continued leadership in this important effort to clean up the environment while supporting economic development. Nina DeConcini, DEQ Communications and Outreach Manager, and Dick DeZeeuw, DEQ Brownfields coordinator, deserve special recognition for their help with the conference.

Agreement to Address Algal Blooms at Diamond Lake
Over the past two years, DEQ has been working with a diverse stakeholder group to address toxic algae blooms that have plagued Diamond Lake each summer for the past three years. The blooms, which are toxic to humans, wildlife and domestic animals, have caused public health closures and declines in the native rainbow trout fishery and recreational use of the lake. Studies

have shown that the blooms are the result of a biological imbalance in the lake caused by the introduction of the non-native Tui Chub fish about twenty years ago.

In November, DEQ signed an agreement with the Oregon Department of Fish and Wildlife (ODFW) and the Umpqua National Forest to cooperatively draft an Environmental Impact Statement (EIS) for Diamond Lake. DEQ will provide information and staff support to the EIS process and develop options for addressing the problem, which may range from controlling algal growth to eradicating the Tui Chub. As we get closer to a decision point this spring, I will arrange for a presentation from DEQ, ODFW and Umpqua National Forest staff if you would find it useful.

OSU Summit Brings Together State Agency and University Directors

On November 19, state natural resource agency directors and Jim Brown, the Governor's Natural Resources Director, held an all day "summit" with Deans and Directors from Oregon State University. The purpose of the meeting was to share our respective strategic plans and priorities and identify opportunities to work together to address Oregon's natural resource and environmental challenges. Among various specific topics presented, we discussed potential new opportunities for collaboration with the Oregon Institute for Natural Resources directed by Gail Achterman. Gail envisions the institute as an information office, a research center, and a bridge between scientific analysis and policy decisions, and is seeking opportunities to work with state agencies on new projects. Gail plans to attend the February 2004 EQC meeting to talk with you about the role of the institute and potential partnerships with DEQ.

Oregon Business Plan Leadership Summit Highlights DEQ Efforts

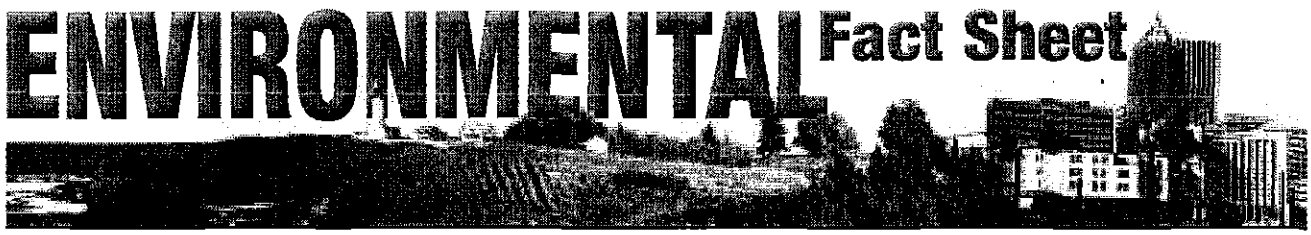
Earlier this week, I attended the second annual Leadership Summit sponsored by the Oregon Business Council, entitled "Shaping Oregon's Economic Future." The first summit, held last December, drew over 1,300 business, elected, and community leaders who came together to share in a dialogue on rebuilding our economy and nurturing our communities. At this year's plenary session, with 1,400 attendees, including Governor Kulongoski and Senators Wyden and Smith, DEQ's effort to streamline the wastewater permitting program was highlighted as one of the state's initiatives in support of the Business Plan's Goal 11: "Simplify and streamline regulation and permitting."

Performance Commitments Submitted to the Governor

This week, I submitted performance commitments to Jim Brown, the Governor's Natural Resources Advisor, and Gary Weeks, Department of Administrative Services (DAS) Director, representing my commitment to assist the Governor in achieving the administration's priorities (see Attachment B). For DAS, I am one of five "pilot" agency directors, and the only one who reports to a Board or Commission, developing a performance "contract" with the Governor, as he promised for all agency directors when he took office. The pilot agencies include the Departments of Transportation, Consumer and Business Services, Human Services, Revenue and DEQ. For the Governor's office, these commitments are in line with "near term actions" that Jim Brown requested of all natural resource agencies to incorporate elements of agency strategic plans, sustainability measures, economic revitalization work and the Governor's natural resource priorities. Progress on these commitments will be tracked through DEQ's performance measures. In February, we plan to present you with an annual review of all of our performance measures in association with updating DEQ's Strategic Directions document.

Attachment A

ENVIRONMENTAL Fact Sheet



EPA **McCormick & Baxter Superfund Site, Portland, Oregon**

U.S.Environmental Protection Agency Region 10 October 2003

McCormick & Baxter Site On a Fast Track for Cleanup

EPA is pleased to provide $12 million to continue cleanup of the McCormick and Baxter Superfund Site in Portland, Oregon. The former wood-treating plant on the Willamette River is being cleaned up by a highly successful state-federal partnership. The Oregon Department of Environmental Quality (DEQ) manages the overall cleanup, while EPA provides technical support and funding. DEQ expects to complete the cleanup by late 2005.

Site wood-treating operations, which ended in 1991, contaminated soil, groundwater, and river sediments with heavy metals, polycyclic aromatic hydrocarbons (PAHs), dioxin, and pentachlorophenols (PCPs). During the 2004 fiscal year already under way, the $12 million will fund construction of a cap to contain contaminated river sediments. Another $4 million is planned for next year to construct a soil cap on land. Both caps are necessary to complete the site cleanup. These funds follow $4 million provided last year for a subsurface barrier wall *(see box)*.

EPA's cleanup at the McCormick & Baxter site represents the Agency's largest investment of Superfund monies at a single Oregon site. The 2004 funding supplements more than $15 million EPA has given the Oregon DEQ since 1997 for site investigation and cleanup. The State of Oregon had already invested $8 million in remediation before the site was added to the National Priorities List.

To protect people and the Portland environment, the cleanup so far has:

- removed wood-treating chemicals and processing equipment
- demolished contaminated structures
- removed 33,000 tons of contaminated soil
- recovered 1,900 gallons of creosote from groundwater
- completed an underground barrier wall around some 16 acres of the site to prevent creosote from migrating into Willamette River sediments

CITY HAS PLANS FOR SITE REUSE

With assistance from the Superfund Redevelopment Initiative, the City of Portland completed a reuse assessment in 2001. Public comment was received from a group of concerned citizens in the community. When the cleanup is complete, Portland plans to redevelop the prime waterfront location as a recreational park.

(Site background and contacts >>)

SITE BACKGROUND

The former McCormick and Baxter Creosoting Company was a wood-treating facility on the Willamette River. The site covers about 45 acres of land and another 15 acres in the river. Wood-treating operations from 1944 to 1991 contaminated the soil, groundwater, and river sediments with heavy metals, polycyclic aromatic hydrocarbons (PAHs), dioxin, and pentachlorophenols (PCPs).

The site was proposed for the National Priorities List of the nation's most contaminated properties in 1993 and finalized on the list in May of 1994.

EPA

FOR MORE INFORMATION, please contact:

Alan Goodman
Remedial Project Manager
goodman.alan@epa.gov
503-326-3685

Judy R. Smith
Community Involvement Coordinator
smith.judy@epa.gov
206-326-6994

Kevin Parrett
ODEQ Project Manager
parrett.kevin@deq.state.or.us
503-229-6748

Fenix Grange
Oregon Dept. of Environmental Quality
grange.fenix@deq.state.or.us
503-229-6590

STATE OF OREGON

AGENCY HEAD PERFORMANCE EXPECTATIONS

Agency Name: Department of Environmental Quality **Agency Head:** Stephanie Hallock
Dates: From: September 1, 2003 **To:** June 30, 2005

- **Purpose** The "Agency Head Performance Expectations" document represents the commitment of agency leadership to assist the Governor in achieving the administration's priorities.
- **Agency-Specific Results** In addition to the statewide standards cited below, the Agency Head commits to the following projects/activities during the 2003-2005 biennium:

Activity/Project Name	Anticipated Outcome(s)	Key Milestones/Dates	Targeted Completion Date
Provide a climate that supports excellence and outstanding customer service.	Improved customer satisfaction with service provided by DEQ.	• Spring 2004, conduct second survey of air and water quality permitted sources. • December 2004, evaluate survey findings and other efforts to date and make adjustments to our customer service improvement plan.	Improvement efforts are ongoing.
Clean up the Willamette River System.	Total Maximum Daily Loads (TMDL) completed for the Willamette Mainstem.		June 2004
	Comprehensive assessment of work and strategy for improving the Willamette River Basin.		June 2004
	Streamline DEQ's Wastewater Permitting Program.	• April 2004, Blue Ribbon Advisory Committee recommends program changes. • June 2004, reduced permit backlog for "major" dischargers from 57% to 30%, and for "minors" from 43% to 21%.	To be determined after recommendations from Blue Ribbon Committee are presented.
	Increase the number of Portland Harbor Superfund sites that require no further clean up action.	• July 2004, commence capping of sediments at the McCormick & Baxter site.	Late 2005, complete cleanup of the McCormick & Baxter site. Completion dates for cleanup of

Attachment B

Activity/Project Name	Anticipated Outcome(s)	Key Milestones/Dates	Targeted Completion Date
			other Portland Harbor sites are to be determined.
Encourage broader reuse of wastewater.	Increased percentage of permitted facilities reusing wastewater.		By 2005, 10% of permitted facilities will be reusing wastewater.
Reduce toxic releases to air, water and land, and clean up toxic contaminants already in the environment.	Reduced risk associated with chemical agent stored at the Umatilla Army Depot through the safe destruction of weapons.	Mid to late 2004, start the destruction of chemical weapons at the Umatilla Army Depot.	To be determined based on the start date of destruction.
	A strategy for reducing toxics.	December 2003, present a framework for the strategy to the Environmental Quality Commission, receive guidance.	Late 2004, strategy established for reducing toxics in the environment, presented to the Commission.
	Introduce ultra low sulfur diesel fuel in Oregon, provide electrification at truck stops as envisioned by Governor's Climate Change Initiative, and retrofit trucks with clean burning engines when ultra low sulfur fuel is secured.	Spring 2004, secure ultra low sulfur fuel in Oregon if economically feasible.	To be determined.
	Assess abandoned or inactive mines in Oregon for toxics.	December 2003, assess a cumulative total of 77 abandoned or inactive mines.	Future targets to be determined in early 2004.
	Reduce mercury in our environment.	December 2003, remove 40 pounds of mercury through DEQ's mercury reduction efforts.	Future targets to be determined in early 2004.
Provide Oregonians with better access to information on local environmental conditions and issues.	A plan completed for the creation of a center for environmental science and information as part of the new DEQ and Public Health Division Laboratory.	Spring 2004, select a site for the new DEQ and Public Health Division Laboratory.	December 2004, plan for science and information center completed.
Support communities in solving environmental and economic problems.	DEQ actively participates in the goals and activities outlined by the Governor's Economic Recovery Teams.		DEQ's participation in GERTs is funded through June 2004.

For information on how these activities fit with DEQ's four Strategic Directions, see the attached summary of "Supporting a Healthy, Sustainable Environment and Economy," submitted to the Governor's office in December 2003.

- **Statewide Management Standards**
  All Agency Heads are expected to provide agency and statewide leadership in the following areas:

  - Diverse Workforce as evidenced by a culturally competent workforce.
  - Financial Accountability as evidenced by managing within legislatively-approved budgets; accurate financial forecasting and reporting; ongoing cash flow analysis; and early identification of problems and potential solutions.
  - Excellent Customer Service as evidenced by positive feedback from customers, particularly in the areas of providing credible information, responsiveness, professionalism, and problem-solving.
  - Collaborative Planning with other State and Local Agencies as evidenced by their participation in planning and initiatives that impact their constituents.
  - Regulatory Streamlining Processes as evidenced by a review of all regulations, policies, and procedures; implementation of business process re-engineering activities; and coordination with other local and state agencies to eliminate redundant processes.
  - Sustainability Practices as evidenced by implementation of Governor's Executive Order.
  - Statewide Efficiency Initiatives as evidenced by participation in development and training as well as pro-active communication to staff to support the outcomes.
  - Ensure that issues/problems identified by Internal Auditors or the Secretary of State Audits are adequately addressed and not recurring.

- **Reviewing Results**
  The Agency Head agrees to the following:
  - To meet the statewide management requirements.
  - To accomplish the results specified above.
  - To notify the Director of Government Operations of obstacles that may hinder or impede, or opportunities that may increase, the Agency Head's ability to carry out the activities required to achieve results.
  - At least quarterly, to discuss and share data with the Director of Government Operations related to the progress in meeting the results. This will include a discussion of opportunities to improve matters, resolve problems and enhance progress.
  - At least yearly, to meet with the Governor to review the performance of the agency and the results.

Summary: Supporting a Healthy, Sustainable Environment and Economy	
Specifically: Develop public policies and improve regulatory processes to facilitate economic opportunity while working cooperatively with all Oregonians to achieve and maintain a healthy, sustainable environment. **Why:** Our environment and our people are Oregon's greatest asset, and maintaining a healthy environment is essential to building a strong economy.	
Strategic Directions	**Top Action Items**
Deliver Excellence in Performance and Product. DEQ is committed to providing a work climate that supports excellence and results in the delivery of outstanding customer service. We must constantly ask ourselves and others how we can do better, and we must recruit and train to provide the best technical and "people" skills. We must continually strive to streamline our regulatory processes and be accessible to the various publics we serve.	• Provide a work climate that supports excellence and outstanding customer service. Implement new performance management system, evaluate hiring and employee development processes, ensure fiscal and performance accountability, streamline regulations, and survey customers regularly for service improvement opportunities.
Protect Oregon's Water. Clean water is the lifeblood of Oregon's economy and environment. It is DEQ's job to protect and improve surface, ground and coastal waters throughout the state for drinking, industrial processes, agricultural and recreational activities, healthy ecosystems and wildlife habitat.	• Clean up the Willamette River System. Complete Willamette River TMDLs in 2004, lead the development of a comprehensive assessment and strategy for improving the Willamette River Basin, implement changes to streamline DEQ's wastewater permitting program, and clean up pollution in the Portland Harbor Superfund site. • Encourage broader reuse of wastewater. Provide information on new technologies, address public health concerns, and develop incentives.
Protect Human Health and the Environment from Toxics. DEQ plays a vital role in Oregon's emergency preparedness network, including responsibility for safe destruction of chemical weapons at the Umatilla Army Depot. Throughout the state, we monitor and gather data about toxics in the environment, develop strategies to prevent further toxic pollution, and clean up sites contaminated by past practices so they can be returned to productive use.	• Reduce toxic releases to air, water and land, and clean up toxic contaminants already in our environment. Ensure safe destruction of chemical weapons at the Umatilla Army Depot, develop a strategy for reducing toxics and move forward with mercury reduction efforts, support Governor's West Coast Climate Change initiative through "clean diesel" work, and continue cleanup of contaminated sites, abandoned or inactive mines, and Brownfield properties.
Involve Oregonians in Solving Environmental Problems. Responsibility for environmental protection needs to expand beyond traditional "command and control" regulation and engage many partners as environmental stewards. DEQ is committed to providing Oregonians with better access to information on local environmental conditions and issues and to working with others to seek and provide opportunities for individuals to make a difference in protecting the environment.	• Provide Oregonians with better access to information on local environmental conditions and issues. Launch a service to provide easy access to regional information, develop a new center for environmental science and information as part of the new DEQ and Health Division Laboratory, and expand our sharing of water quality information. • Support communities in solving environmental and economic problems and continue to be an active participant in the Governor's Economic Recovery Teams.

State of Oregon

Department of Environmental Quality Memorandum

Date: November 13, 2003

To: Environmental Quality Commission

From: Stephanie Hallock, Director S. Hallock

Subject: Agenda Item D, Rule Adoption: Water Quality Standards, Including Temperature Criteria, OAR Chapter 340, Division 41, December 4, 2003, EQC Meeting

Department Recommendation

The Department recommends that the Environmental Quality Commission (Commission) repeal the existing Division 41 rules and adopt the new set of Division 41 rules presented in Attachment A.

Need for Rulemaking

Since 1965, federal law has required States to develop and implement water quality standards. Water quality standards include the designated beneficial uses for water bodies and narrative and numeric criteria to protect those uses. These standards set the foundation for the nation's water pollution control efforts by articulating a benchmark for water quality. Waters exceeding standards are considered to be "polluted" while those achieving standards are "clean" and fully support their designated beneficial uses (such as fishing and aquatic habitat, swimming, drinking water, irrigation, etc). These standards are also used for regulatory purposes in National Pollutant Discharge Elimination System (NPDES) point source permits, federal Clean Water Act section 401 certification decisions, the federal Clean Water Act section 303(d) impaired waters listing process, and in developing total maximum daily loads (TMDLs).

The Commission adopted comprehensive revisions to Oregon temperature and intergravel dissolved oxygen criteria in 1996 and, with one exception, the Environmental Protection Agency (EPA) approved those criteria in July 1999. EPA rejected the temperature criteria (68 degrees Fahrenheit) for the Lower Willamette concluding that it was not protective of salmonids. On March 31, 2003, EPA's approval of Oregon's temperature criteria, dissolved oxygen criteria, and antidegradation rules was overturned by the Federal District Court of Oregon in Northwest Environmental Advocates (NWEA) v EPA. Similarly, on September 29, 2003, EPA informed the State that it was withdrawing its approval of these same rules. EPA is now under Court order to either 1) develop federally-promulgated rules to replace the disapproved state rules or 2) approve revised state rules that address the concerns identified by the Court. This rulemaking package addresses these concerns.

Effect of Rule

These proposed rules substantively revise the antidegradation, dissolved oxygen, temperature, and mixing zone rules, eliminate approximately 170 pages of existing text, and reorganize the remaining text to be more user friendly. Specifically:

- The proposed rules clarify the antidegradation provisions by more clearly indicating the type of discharges that are considered new or increased discharges (that trigger an antidegradation review), and by identifying discharges exempt from such reviews.

- The proposed rules revise the intergravel dissolved oxygen criteria from 6 mg/l to 8 mg/l to protect incubating salmonid eggs.

- The proposed rules establish revised numeric and narrative temperature criteria and clarify the use and implementation of those criteria, including incorporating by reference a series of tables and maps that depict where and when the criteria apply in each of Oregon's major watersheds.

Commission Authority

The Commission has authority to take this action under ORS 468B.025(1)(b), 468B.030, 468B.035, 468B.048, 468B.062, and 468B.110.

Early Stakeholder Involvement

These proposed rules have been a long time in the making. Since October 1999, the Department has participated with the other Pacific Northwest States and Tribes in an EPA-sponsored initiative to develop recommendations for temperature criteria. The technical basis for these discussions and the resulting EPA recommendations released as regional guidance (April 2003) was subject to several rounds of public hearings and comment.

Before drafting these rules, the Department sponsored a series of 11 listening sessions at 6 locations across the State to discuss the concerns and suggestions of Oregonians. These sessions included discussions about the existing criteria, the NWEA v EPA law suit, the EPA guidance, and options available to the State. Virtually all persons in attendance favored going forward with a State rule to address the Federal District Court's concerns.

In addition to reaching out to the general public, the Department has had numerous discussions with members of the Water Quality Standards Policy Advisory Committee and has circulated multiple drafts of the proposed rules for their individual review and comment prior to seeking formal public comment. In addition, the Department assembled a technical advisory committee to review the EPA guidance and the proposed draft rules. Attachment C identifies the

members of the policy and technical advisory committees.

As these rules were taking shape, the Department posted several preliminary draft versions of the rules on our website and took informal public comment via email prior to the formal comment period. Further, the Department went above and beyond the direct mailing requirements in the State Administrative Procedures Act by providing additional notice of the proposed rule to all of the Oregon watershed councils, soil and water conservation districts, and irrigation districts by e-mail.

Finally, the Department provided a 45-day formal public comment period and held 10 hearings in 9 locations around the State (see below for details).

Formal Public Comment

The formal public comment period extended from August 15, 2003, through October 3, 2003, and included public hearings in Newport, North Bend, Medford, Eugene, Redmond, Burns, John Day, and La Grande. Forty nine persons submitted oral or written comments on this rule. Most of the comments were requests for clarification of the proposed rules. The major comments are reflected in the "Key Issues" set out below. The final rule was revised to address these questions, suggestions and concerns. A summary of all comments and the department's responses is provided in Attachment B.

Key Issues

1. Whether the Commission should go forward with these rule revisions or defer to EPA to promulgate temperature, dissolved oxygen, and antidegradation rules for Oregon?

Recommendation: For the following reasons, the Department recommends adopting the proposed rules rather than deferring to EPA. First, the Department believes this should be an Oregon rulemaking and an Oregon process rather than a national one. The Clean Water Act envisions States adopting water quality standards. EPA only promulgates standards when a State fails to avail itself of this fundamental duty. Second, the Department has been working closely with EPA, NOAA Fisheries, U.S. Fish and Wildlife Service, the Oregon Department of Fish and Wildlife, and the public on temperature questions for many years. We have the data and expertise to revise these rules. Third, whichever agency develops the rules, owns the rules thereafter. If this were a federal rule, EPA would decide future questions regarding proper interpretations of the rule. EPA would also be the sole decision-maker on variance requests, site specific criteria, and beneficial use attainability rather than the Department and the Commission. Such an EPA

role would undermine the Department's water quality permitting and enforcement processes and create a confusing regulatory situation for Oregonians.

2. How to accurately map the beneficial fish use (the "where and when") information for anadromous salmonids?

Recommendation: The Department has relied on species–specific fish distribution and timing information collected by the Oregon Department of Fish and Wildlife (ODFW). The Department in turn has analyzed this data for all species in a watershed and developed the specific information depicted on the beneficial use maps incorporated into the rule (See Attachment A1, pages 41-90). The Department has closely coordinated this data and mapping process with EPA and the federal fish services' technical fish experts.

3. How to define and use a de minimis (insignificant heat loading) concept in the rule?

Recommendation: In 2003 Temperature Guidance, EPA recognized the legitimacy of de minimis increases representing insignificant temperature effects on anadromous salmonids to allow some human use of Oregon streams. The guidance recommends a de minimis discharge of no more than 0.25 Celsius. However, the precision of measuring temperature to a hundredth of a degree is not generally available. Therefore, after consulting with EPA and the federal services, we have reached consensus that a de minimis increase of 0.3 degrees Celsius (0.5 degrees Fahrenheit) above the applicable temperature criteria will have no adverse affect on salmonids. EPA used this same value in its proposed rule[1].

4. How to integrate natural condition and the thermal potential of a watershed, and relate the two concepts to biologically based temperature criteria?

Recommendation: Generally, the "natural condition" of a water body

[1] EPA's proposed de minimis rule can be found at see 68 *Federal Register* pag e 58758, October 10, 2003.

supersedes any numeric or narrative water quality criteria. The recommended rules contemplate three types of numeric temperature criteria. The first is the biologically based criteria that ensure thermally optimal temperature conditions in the state's waters. Since all of the state's waters will not meet these optimal temperatures at all times in all places, the rule acknowledges that thermal potential (as determined through temperature TMDL modeling) supersedes biologically based criteria (as the best we can expect to achieve). The thermal potential of a water body is a modeled estimation of a thermal profile of that water body after improvements are made in streamside vegetation, geomorphology, stream flows, and other measures reflecting the natural condition of a water body determined during a temperature TMDL. Consequently, the rule equates the thermal potential of a water body with its "natural condition." In addition to biologically based and natural condition criteria, the rule also allows for "site-specific" temperature criteria to be established. This third pathway requires water-body specific rulemaking and must be based on the unique characteristics of the watershed that protects the beneficial use despite less-than-optimal or natural temperatures. Situations where a water body cannot, despite all of the best efforts of people in the watershed, achieve compliance with any of these criteria can only be resolved through a use attainability analysis (UAA). A UAA is a Clean Water Act mechanism to lower a designated beneficial use of a water body for good cause. Similar to other aspects of standards, UAAs also require EPA approval before they can be considered effective.

5. How to design temperature implementation mechanisms for both point and nonpoint sources that ensure the protection of Oregon salmonids?

Recommendation: Water quality criteria are imposed on point sources through water quality-based permit limits in NPDES permits (used where the discharger has a reasonable potential to exceed the criteria). The proposed rules make it clear that point sources can use a variety of methods to achieve compliance including outfall design, flow augmentation, and effluent (heat load) trading.

Water quality criteria are imposed on nonpoint sources in a variety of ways. State and private forestry and agricultural activities are designed to achieve standards through compliance with the Forest Practices Act and the Agricultural Water Quality Management Plans (SB 1010) respectively. Forestry and agricultural activities on federal lands are directly subject to the

water quality criteria and the Department's jurisdiction. Similarly, other nonpoint sources also remain subject to the water quality criteria and the Department's jurisdiction.

For all sources, the criteria are implemented through load allocations for nonpoint sources and the waste load allocations for point sources identified in TMDLs.

Next Steps

Once adopted, these rules will be filed with the Secretary of State. In addition, according to federal law, water quality standards rules are not effective until they have been approved by EPA. Consequently, these rules will also be forwarded to U.S. EPA for review and approval under the Federal Clean Water Act. Since these rules have an impact on threatened and endangered species, EPA must consult with the U.S. Fish and Wildlife Service and NOAA-Fisheries under the Endangered Species Act before giving its approval. Due to a court order, EPA approval is anticipated on or before March 2, 2004.

Between adoption of the rule and EPA approval, the department will prepare and present a series of internal and external training on what the new rules say and how they are used in regulatory decisions.

Attachments

A. Proposed Rule Revisions
A1. New Division 41 (90 pages)
A2. Deleted Division 41 (255 pages)
B. Summary of Public Comments and Department Responses
C. Advisory Committees Reports
C1. Policy Advisory Committee (PAC) Report
C2. Technical Advisory Committee (TAC) Report
D. Presiding Officer's Report on Public Hearings
E. Relationship to Federal Requirements Questions
F. Statement of Need and Fiscal and Economic Impact
G. Land Use Evaluation Statement
H. Information and Methods to Delineate Beneficial Fish Use Designations

Available Upon Request

1. Legal Notice of Hearing
2. Cover Memorandum from Public Notice
3. Written Comment Received
4. Rule Implementation Plan

Approved:

Section: Mark D. Charles

Division: Michael T. Llewelyn

Report Prepared By: Mark D. Charles

Phone: (503) 229-5589

Crosswalk Revisions to OAR Chapter 340, Division 041		
Existing Rules – Division 041	**Action**	**Revised Rules – Division 041**
Title: State-Wide Water Quality Management Plan; Beneficial Uses, Policies, Standards, and Treatment Criteria for Oregon	amend	**Title:** Water Quality Standards: Beneficial Uses, Policies, and Criteria for Oregon
0001 -- Preface	unchanged	**0001** -- Preface
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DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER POLLUTION
DIVISION 41
WATER QUALITY STANDARDS:
BENEFICIAL USES, POLICIES, AND CRITERIA FOR OREGON

11/5/03

Note to the Commission: This rule package is a complete substitute for the existing Division 41. For your convenience, we have bolded language which is new. All other rule text is drawn from the existing Division 41 language which has been reorganized and reformatted for the convenience of the reader.

340-041-0001

Preface

(1) The rules that follow, together with the applicable laws of the State of Oregon and the applicable regulations of the Environmental Quality Commission (the Commission), set forth Oregon's plans for management of the quality of public waters within the State of Oregon.

(2) Under this plan, the Department of Environmental Quality will continue to manage water quality by evaluating discharges and activities, whether existing or a new proposal, on a case-by-case basis, based on best information currently available and within the limiting framework of minimum standards, treatment criteria and policies which are set forth in the plan.

(3) The Commission recognizes that the deadlines for adoption of this plan prevented thorough involvement by local government in the development and review of the plan. Accordingly, the Department will review the contents of this plan with affected local governments and will use their comments and suggestions in preparing amendments for consideration by the Commission not later than December, 1977. At a minimum, the processes of coordination with local governments will consist of the following elements:

(a) Work with county coordinators to set up meetings to explain the plan to groups of local governments and solicit their comments;

(b) Provide copies of the plan and supporting documents to any affected local governments who have not already received them;

(c) Seek input from councils of governments;

(d) Upon request, visit local level governments to discuss the plan;

(e) Work with Statewide associations of local governments and others to inform local governments of the plan.

Stat. Auth.: ORS 468
Stats. Implemented: ORS 468.015, ORS 468.035 & ORS 468B.015
Hist.: DEQ 128, f. & ef. 1-21-77

340-041-0002

Definitions

Definitions applicable to all basins unless context requires otherwise:

(1) "401 Water Quality Certification" means a determination made by DEQ that a dredge and fill activity, private hydropower facility, or other federally licensed or permitted activity that may result in a discharge to waters of the State, has adequate terms and conditions to prevent an exceedance of water quality criteria. The federal permit in question may not be issued without this State determination in accordance with the Federal Clean Water section 401 (33 USC 1341).

(2) "Ambient Stream Temperature" means the stream temperature measured at a specific time and place. The selected location for measuring stream temperature must be representative of the stream in the vicinity of the point being measured.

(3) "Anthropogenic", when used to describe "sources" or "warming", means that which results from human activity;

(4) "Applicable Criteria" means the biologically-based temperature criteria set out in OAR 340-041-0028(4), the superseding cold water protection criteria as described in OAR 340-041-0028(12), or the superseding natural condition criteria as described in OAR 340-041-0028(8). In addition, the applicable criteria may also be site-specific criteria approved by U.S. EPA. A subbasin may have a combination of applicable temperature criteria derived from some or all of these numeric and narrative criteria.

(5) "Appropriate Reference Site or Region" means a site on the same water body, or within the same basin or ecoregion that has similar habitat conditions, and represents the water quality and biological community attainable within the areas of concern.

(6) "Aquatic Species" means any plants or animals that live at least part of their life cycle in waters of the State.

(7) "Basin" means a third field hydrologic unit as identified by the U.S. Geological Survey.

(8) "BOD" means 5-day 20°C Biochemical Oxygen Demand.

(9) "Cold-Water Aquatic Life" means aquatic organisms that are physiologically restricted to cold water, including but not limited to native salmon, steelhead, mountain whitefish, char (including bull trout), and trout.

(10) **"Cold Water Refugia"** means **those** portions of a water body **where, or times during the diel temperature cycle when, the water temperature is at least 2 degrees Celsius colder than the daily maximum temperature of the adjacent well mixed flow of the water body.**

(11) "Commission" means the Oregon Environmental Quality Commission.

(12) "Cool-Water Aquatic Life" means aquatic **organisms** that are physiologically restricted to cool waters**, including but not limited to native sturgeon, pacific lamprey, suckers, chub, sculpins and certain species of cyprinids (minnows).**

(13) "Core Cold Water Habitat Use" means waters that are expected to maintain temperatures within the range generally considered optimal for salmon and steelhead rearing, or that are suitable for bull trout migration, foraging and sub-adult rearing that occurs during the summer. These uses are designated on the following subbasin maps set out at OAR 340-041-0101 to OAR 340-041-0340: Figures 130A, 151A, 160A, 170A, 220A, 230A, 271A, 286A, 300A, 310A, 320A, and 340A.

(14) "Critical Habitat" means those areas that support rare, threatened or endangered species, or serve as sensitive spawning and rearing areas for aquatic **life as designated by the U.S. Fish and Wildlife Service or NOAA Fisheries pursuant to the Endangered Species Act (16 USC 1531).**

(15) "Daily Mean" (dissolved oxygen) means the numeric average of an adequate number of data to describe the variation in dissolved oxygen concentration throughout a day, including daily maximums and minimums. For the purpose of calculating the mean, concentrations in excess of 100 percent of saturation are valued at the saturation concentration.

(16) "Department" or "DEQ" means the Oregon State Department of Environmental Quality.

(17) "Designated Beneficial Use" means the purpose or benefit to be derived from a water body, as designated by the Water Resources Department or the Commission.

(18) "DO" means dissolved oxygen.

(19) "Ecological Integrity" means the summation of chemical, physical and biological integrity capable of supporting and maintaining a balanced, integrated, adaptive community of organisms having a species composition, diversity, and functional organization comparable to that of the natural habitat of the region.

(20) "Erosion Control Plan" means a plan containing a list of best management practices to be applied during construction to control and limit soil erosion.

(21) "High Quality Waters" means those waters which meet or exceed those levels that are necessary to support the propagation of fish, shellfish, and wildlife and recreation in and on the water, and other designated beneficial uses.

(22) "Industrial Waste" means any liquid, gaseous, radioactive, or solid waste substance or a combination thereof resulting from any process of industry, manufacturing, trade, or business, or from the development or recovery of any natural resources.

(23) "In Lieu Fee" means a fee collected by a jurisdiction in lieu of requiring construction of on-site stormwater quality control facilities.

(24) "Intergravel Dissolved Oxygen" (IGDO) means the concentration of oxygen measured in the water within the stream bed gravels. Measurements should be taken within a limited time period, prior to emergence of fry.

(25) "Jurisdiction" means any city or county agency in the Tualatin River and Oswego Lake subbasin that regulates land development activities within its boundaries by approving plats, site plans or issuing permits for land development.

(26) "Land Development" means any human induced change to improved or unimproved real estate, including but not limited to construction, installation or expansion of a building or other structure, land division, drilling, and site alteration such as that due to land surface mining, dredging, grading, construction of earthen berms, paving, improvements for use as parking or storage, excavation or clearing.

(27) "Load Allocation (LA)" means the portion of a receiving water's loading capacity that is attributed either to one of its existing or future nonpoint sources of pollution or to natural background sources. Load allocations are best estimates of the loading that may range from reasonably accurate estimates to gross allotments, depending on the availability of data and appropriate techniques for predicting loading. Whenever possible, natural and nonpoint source loads should be distinguished.

(28) "Loading Capacity (LC)" means the greatest amount of loading that a water body can receive without violating water quality standards.

(29) "Low Flow Period" means the flows in a stream resulting primarily from groundwater discharge or base flows augmented from lakes and storage projects during the driest period of the year. The dry weather period varies across the State according to

climate and topography. Wherever the low flow period is indicated in the Water Quality Management Plans, this period has been approximated by the inclusive months. Where applicable in a waste discharge permit, the low flow period may be further defined.

(30) "mg/l" means milligrams per liter.

(31) "Migration Corridors" mean those waters that are predominantly used for salmon and steelhead migration during the summer, and where there is little or no anadromous salmonid rearing occurring in the months of July and August. These uses are designated on the following subbasin maps set out at OAR 340-041-0101 to OAR 340-041-0340: Tables 101B, and 121B, and Figures 151A, 170A, and 340A.

(32) "Minimum" (dissolved oxygen) means the minimum recorded concentration including seasonal and diurnal minimums.

(33) "Monthly (30-day) Mean Minimum" (dissolved oxygen) means the minimum of the 30 consecutive day floating averages of the calculated daily mean dissolved oxygen concentration.

(34) "Natural Conditions" means conditions or circumstances affecting the physical, chemical, or biological integrity of a water of the State that are not influenced by past or present anthropogenic activities. Disturbances from wildfire, floods, earthquakes, volcanic or geothermal activity, wind, insect infestation, diseased vegetation are considered natural conditions.

(35) "Natural Thermal Potential" means the determination of the thermal profile of a water body using best available methods of analysis and the best available information on the site potential riparian vegetation, stream geomorphology, stream flows and other measures to reflect natural conditions.

(36) "Nonpoint Sources" means **any source of water pollution other than a point source. Generally, a nonpoint source is** a diffuse or unconfined source of pollution where wastes can either enter into, or be conveyed by the movement of water, to ~~public~~ waters **of the State**.

(37) "Ocean Waters" means all oceanic, offshore waters outside of estuaries or bays and within the territorial limits of the State of Oregon.

(38) "Outstanding Resource Waters" means those waters designated by the Environmental Quality Commission where existing high quality waters constitute an outstanding State or national resource based on their extraordinary water quality or ecological values, or where special water quality protection is needed to maintain critical habitat areas.

(39) "Pollution" means such contamination or other alteration of the physical, chemical, or biological properties of any waters of the State, including change in temperature, taste,

color, turbidity, silt, or odor of the waters, or such radioactive or other substance into any waters of the State which either by itself or in connection with any other substance present, will or can reasonably be expected to create a public nuisance or render such waters harmful, detrimental, or injurious to public health, safety, or welfare, or to domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses or to livestock, wildlife, fish or other aquatic life, or the habitat thereof.

(40) "Point Source" means a discernable, confined and discrete conveyance, including but not limited to a pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, vessel, or other floating craft, or leachate collection system, from which pollutants are or may be discharged. Point source does not include agricultural storm water discharges and return flows from irrigated agriculture.

(41) "Public Water" means the same as "waters of the State".

(42) "Public Works Project" means any land development conducted or financed by a local, State, or federal governmental body.

(43) "Reserve Capacity" means that portion of a receiving stream's loading capacity which has not been allocated to point sources or nonpoint sources and natural background as waste load allocations or load allocations, respectively. The reserve capacity includes that loading capacity which has been set aside for a safety margin and is otherwise unallocated.

(44) "Resident Biological Community" means aquatic life expected to exist in a particular habitat when water quality standards for a specific ecoregion, basin, or water body are met. This must be established by accepted biomonitoring techniques.

(45) "Salmon" means chinook, chum, coho, sockeye and pink salmon.

(46) "Salmon and Steelhead Spawning Use" means waters that are or could be used for salmon and steelhead spawning, egg incubation and fry emergence. These uses are designated on the following subbasin maps set out at OAR 340-041-0101 to OAR 340-041-0340: Tables 101B, and 121B, and Figures 130B, 151B, 160B, 170B, 220B, 230B, 271B, 286B, 300B, 310B, 320B, and 340B.

(47) "Salmon and Trout Rearing and Migration Use" means thermally suitable rearing habitat for salmon and steelhead, rainbow and cutthroat trout as designated on subbasin maps set out at OAR 340-041-0101 to OAR 340-041-0340: Figures 130A, 151A, 160A, 170A, 220A, 230A, 271A, 286A, 300A, 310A, 320A, and 340A.

(48) "Salmonid or Salmonids" means native salmon, trout, mountain whitefish and char (including bull trout). For purposes of Oregon water quality standards, salmonid does not include brook or brown trout since they are introduced species.

(49) "Secondary Treatment" means the following depending on the context:

(a) "Sewage Wastes" means the minimum level of treatment mandated by EPA regulations pursuant to Public Law 92-500;

(b) "Industrial and Other Waste Sources" means control equivalent to best practicable treatment (BPT).

(50) "Seven-Day Average Maximum Temperature" means a calculation of the average of the daily maximum temperatures from seven consecutive days, made on a rolling basis.

(51) "Sewage" means the water-carried human or animal waste from residences, buildings, industrial establishments, or other places together with such groundwater infiltration and surface water as may be present. The admixture with sewage as herein defined of industrial wastes or wastes, as defined in sections (6) and (13) of this rule, may also be considered "sewage" within the meaning of this division.

(52) "Short-Term Disturbance" means a temporary disturbance **of six months or less** where water quality standards may be violated briefly, but not of sufficient duration to cause acute or chronic effects on beneficial uses.

(53) "Spatial Median" means the value which falls in the middle of a data set of multiple IGDO measurements taken within a spawning area. Half the samples should be greater than, and half the samples should be less than the spatial median.

(54) "SS" means suspended solids.

(55) "Stormwater Quality Control Facility" means any structure or drainage way that is designed, constructed, and maintained to collect and filter, retain, or detain surface water runoff during and after a storm event for the purpose of water quality improvement. It may also include, but not be limited to, existing features such as wetlands, water quality swales, and ponds which are maintained as stormwater quality control facilities.

(56) "Subbasin" means a fourth field hydrologic unit as identified by the U.S. Geological Survey.

(57) "Summer" means June 1 through September 30 of each calendar year.

(58) "Threatened or Endangered Species" means aquatic species listed as either threatened or endangered under the federal Endangered Species Act (16 USC 1531 et seq. and Title 50 of the Code of Federal Regulations).

(59) "Total Maximum Daily Load (TMDL)" means the sum of the individual WLAs for point sources and LAs for nonpoint sources and background. If receiving water has only one point source discharger, the TMDL is the sum of that point source WLA plus the

LAs for any nonpoint sources of pollution and natural background sources, tributaries, or adjacent segments. TMDLs can be expressed in terms of either mass per time, toxicity, or other appropriate measure. If Best Management Practices (BMPs) or other nonpoint source pollution controls make more stringent load allocations practicable, then wasteload allocations can be made less stringent. Thus, the TMDL process provides for nonpoint source control tradeoffs.

(60) "Wasteload Allocation (WLA)" means the portion of receiving water's loading capacity that is allocated to one of its existing or future point sources of pollution. WLAs constitute a type of water quality-based effluent limitation.

(61) "Wastes" means sewage, industrial wastes, and all other liquid, gaseous, solid, radioactive, or other substances which will or may cause pollution or tend to cause pollution of any water of the State.

(62) "Water Quality Limited" means one of the following categories:

(a) A receiving stream that does not meet instream water quality standards during the entire year or defined season even after the implementation of standard technology;

(b) A receiving stream that achieves, and is expected to continue to achieve instream water quality standard but utilizes higher than standard technology to protect beneficial uses;

(c) A receiving stream for which there is insufficient information to determine if water quality standards are being met with higher-than-standard treatment technology, or where, through professional judgment, the receiving stream would not be expected to meet water quality standards during the entire year or defined season without higher than standard technology.

(63) "Water Quality Swale" means a natural depression or wide, shallow ditch that is used to temporarily store, route, or filter runoff for the purpose of improving water quality.

(64) "Waters of the State" means lakes, bays, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Pacific Ocean within the territorial limits of the State of Oregon, and all other bodies of surface or underground waters, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface or underground waters), and that are located wholly or partially within or bordering the State or within its jurisdiction.

(65) "Weekly (seven-day) Mean Minimum" (dissolved oxygen) means the minimum of the seven consecutive day floating average of the calculated daily *mean* dissolved oxygen concentration.

(66) "Weekly (seven-day) Minimum Mean" (dissolved oxygen) means the minimum of the seven consecutive day floating average of the daily *minimum* concentration. For purposes of application of the criteria, this value will be used as the reference for diurnal minimums.

(67) "Without Detrimental Changes in the Resident Biological Community" means no loss of ecological integrity when compared to natural conditions at an appropriate reference site or region.

Stat. Auth: ORS 183.500, ORS 468.020, ORS 468B.048, ORS 468.705, ORS 468.710 & ORS 468.735
Stats. Implemented: ORS 468B.048
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 24-1981, f. & ef. 9-8-81; DEQ 16-1988, f. & cert. ef. 7-13-88; DEQ 16-1989, f. & cert. ef. 7-31-89 (and corrected 8-3-89); DEQ 30-1989, f. & cert. ef. 12-14-89; DEQ 22-1990, f. & cert. ef. 7-6-90; DEQ 14-1991, f. & cert. ef. 8-13-91; DEQ 17-1991, f. & cert. ef. 9-30-91; DEQ 5-1996, f. & cert. ef. 3-7-96

340-041-0004

Antidegradation

(1) **Purpose**. The purpose of the Antidegradation Policy is to guide decisions that affect water quality such that unnecessary **further** degradation from **new or increased** point and nonpoint sources of pollution is prevented, and to protect, maintain, and enhance existing surface water quality to **ensure the full protection of** all existing beneficial uses. The standards and policies set forth in OAR 340-041-0007 through 340-041-0350 are intended to **supplement** the Antidegradation Policy.

(2) Growth Policy. In order to maintain the quality of waters in the State of Oregon, it is the general policy of the **Commission** to require that growth and development be accommodated by increased efficiency and effectiveness of waste treatment and control such that measurable future discharged waste loads from existing sources do not exceed presently allowed discharged loads **except as provided in section (3) through (9) of this rule.**

(3) Nondegradation Discharges. The following new or increased discharges are subject to this Division. However, because they are not considered degradation of water quality, they are not required to undergo an antidegradation review under this rule:

(a) Discharges Into Existing Mixing Zones. Pollutants discharged into the portion of a water body that has been included in a previous ~~calculation for a~~ mixing zone for a permitted source, including the zones of initial dilution, are not considered a reduction in water quality, so long as the mixing zone is established in accordance with OAR 340-041-0053, there are no other overlapping mixing zones from other

point sources, and the discharger complies with all effluent limits set out in its NPDES permit;

(b) Water Conservation Activities. An increase in a pollutant concentration is not considered a reduction in water quality so long as the increase occurs as the result of a water conservation activity, the total mass load of the pollutant is not increased, and the concentration increase has no adverse effect on either beneficial uses or threatened or endangered species in the water body; and

(c) Temperature. Insignificant temperature increases authorized under OAR 340-041-0028(11) and (12) are not considered a reduction in water quality.

(d) Dissolved Oxygen. Up to a 0.1 mg/l decrease in dissolved oxygen from the upstream end of a stream reach to the downstream end of the reach is not considered a reduction in water quality so long as it has no adverse effects on threatened and endangered species.

(4) Recurring Activities. Since the baseline for applying the antidegradation policy to an individual source is the water quality resulting from the source's currently authorized discharge, and since regularly-scheduled, recurring activities remain subject to water quality standards and the terms and conditions in any applicable federal and state permits, certifications and licenses, the following activities will not be considered new or increasing discharges and will therefore not trigger an antidegradation review under this rule so long as they do not increase in frequency, intensity, duration or geographical extent:

(a) Rotating grazing pastures, ~~Cattle rotations~~

(b) Agricultural crop rotations, and

(c) Maintenance dredging.

(5) Exemptions to the Antidegradation Requirement. Some activities may, on a short term basis, cause temporary water quality degradation. However, these same activities may also have substantial and desirable environmental benefits. The following activities and situations fall into this category. Such activities and situations remain subject to water quality standards, and must demonstrate that they have minimized adverse affects to threatened and endangered species in order to be exempt from the antidegradation review under this rule:

(a) Riparian Restoration Activities. Activities that are intended to restore the geomorphology or riparian vegetation of a water body, or control invasive species need not undergo an antidegradation review so long as the Department determines that there is a net ecological benefit to the restoration activity. Reasonable measures that are consistent with the restoration objectives for the water body must be used to minimize the degradation;

(b) Emergency Situations. The Director or a designee may, for a period of time no greater than 6 months, allow lower water quality without an antidegradation review under this rule in order to respond to public health and welfare emergencies (i.e., a significant threat of loss of life, personal injury or severe property damage); and

(c) Exceptions. Exceptions **authorized by the Commission under (9) of this rule.**

(6) High Quality Waters Policy: Where the existing water quality meets or exceeds those levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, and other designated beneficial uses, that level of water quality **must** be maintained and protected. **However,** the Environmental Quality Commission, after full satisfaction of the intergovernmental coordination and public participation provisions of the continuing planning process, and with full consideration of sections (2) and (12) of this rule, and 340-041-0007(5), may allow a lowering of water quality in these high quality waters if it finds:

(a) No other reasonable alternatives exist except to lower water quality; and

(b) **The action is necessary and benefits of the lowered water quality outweigh the environmental costs of the reduced water quality. This evaluation will be conducted in accordance with DEQ's "Antidegradation Policy Implementation Internal Management Directive for NPDES Permits and section 401 water quality certifications," pages 27, and 33-39 (March 2001) incorporated herein by reference;**

(c) All water quality standards will be met and beneficial uses protected; and

(d) Federal threatened and endangered aquatic species will not be adversely affected.

(7) Water Quality Limited Waters Policy: **Water quality limited waters may not be further degraded except in accordance with** section (9)(a)(B), (C) and (D) of this rule.

(8) Outstanding Resource Waters Policy. Where existing high quality waters constitute an outstanding State or national resource such as those waters designated as extraordinary resource waters, or as critical habitat areas, the existing water quality and water quality values must be maintained and protected, and classified as "Outstanding Resource Waters of Oregon."

(a) The Commission may specially designate high quality waterbodies to be classified as Outstanding Resource Waters in order to protect the water quality parameters that affect ecological integrity of critical habitat or special water quality values that are vital to the unique character of those water bodies. The Department will develop a screening process and establish a list of nominated water bodies for Outstanding Resource Waters designation in the Biennial Water Quality Status Assessment Report (305(b) Report). The priority water bodies for nomination include:

(A) **Those in State and** National Parks;

(B) National Wild and Scenic Rivers;

(C) State Scenic Waterways;

(D) **Those in State and** National Wildlife Refuges; and

(E) Those in federally designated wilderness areas.

(b) The Department will bring to the Commission a list of water bodies that are proposed for designation as Outstanding Resource Waters at the time of each triennial Water Quality Standards Review; and

(c) When designating Outstanding Resource Waters, the Commission may establish the water quality values to be protected and provide a process for determining what activities are allowed that would not affect the outstanding resource values. After the designation, the Commission may not allow activities that may lower water quality below the level established except on a short term basis to respond to public health and welfare emergencies, or to obtain long-term water quality improvements.

(9) Exceptions. The Commission or Department may grant exceptions to **this rule so long as the following procedures are met:**

(a) In allowing new or increased discharged loads, the Commission or Department **must** make the following findings:

(A) The new or increased discharged load **will** not cause water quality standards to be violated;

(B) The action is necessary and benefits of the lowered water quality outweigh the environmental costs of the reduced water quality. This evaluation will be conducted in accordance with DEQ's "Antidegradation Policy Implementation Internal Management Directive for NPDES Permits and section 401 water quality certifications," pages 27, and 33-39 (March 2001) incorporated herein by reference; and

(C) The new or increased discharged load **will** not unacceptably threaten or impair any recognized beneficial uses **or adversely affect threatened or endangered species**. In making this determination, the Commission or Department may rely upon the presumption that if the numeric criteria established to protect specific uses are met the beneficial uses they were designed to protect are protected. In making this determination the Commission or Department may also evaluate other State and federal agency data that would provide information on potential impacts to beneficial uses for which the numeric criteria have not been set;

(D) The new or increased discharged load may not be granted if the receiving stream is classified as being water quality limited under OAR 340-041-0002(62)(a), unless:

(i) The pollutant parameters associated with the proposed discharge are unrelated either directly or indirectly to the parameter(s) causing the receiving stream to violate water quality standards and being designated water quality limited; or

(ii) Total maximum daily loads (TMDLs), waste load allocations (WLAs) load allocations (LAs), and the reserve capacity have been established for the water quality limited receiving stream; and compliance plans under which enforcement action can be taken have been established; and there will be sufficient reserve capacity to assimilate the increased load under the established TMDL at the time of discharge; or

(iii) Effective July 1, 1996, in waterbodies designated water-quality limited for dissolved oxygen, when establishing WLAs under a TMDL for waterbodies meeting the conditions defined in this rule, the Department may at its discretion provide an allowance for WLAs calculated to result in no measurable reduction of dissolved oxygen (DO). For this purpose, "no measurable reduction" is defined as no more than 0.10 mg/L for a single source and no more than 0.20 mg/L for all anthropogenic activities that influence the water quality limited segment. The allowance applies for surface water DO criteria and for Intergravel dissolved oxygen (IGDO) if a determination is made that the conditions are natural. The allowance for WLAs **applies** only to surface water 30-day and seven-day means; or

(iv) **Under extraordinary circumstances to solve an existing, immediate and critical environmental problem, the Commission or Department may, after the completion of a TMDL but before the water body has achieved compliance with standards,** consider a waste load increase for an existing source on a receiving stream designated water quality limited under OAR 340-041-0002(62)(a). This action must be based on the following conditions:

(I) That TMDLs, WLAs and LAs have been set; and

(II) That a compliance plan under which enforcement actions can be taken has been established and is being implemented on schedule; and

(III) That an evaluation of the requested increased load shows that this increment of load will not have an unacceptable temporary or permanent adverse effect on beneficial uses **or adversely affect threatened or endangered species**; and

(IV) That any waste load increase granted under subparagraph (iv) of this paragraph is temporary and does not extend beyond the TMDL compliance deadline established for the waterbody. If this action will result in a permanent load increase, the action has to comply with sub-paragraphs (i) or (ii) of this paragraph.

(b) The activity, expansion, or growth necessitating a new or increased discharge load is consistent with the acknowledged local land use plans as evidenced by a statement of land use compatibility from the appropriate local planning agency.

(c) Oregon's water quality management policies and programs recognize that Oregon's water bodies have a finite capacity to assimilate waste. Unused assimilative capacity is an exceedingly valuable resource that enhances in-stream values and environmental quality in general. Allocation of any unused assimilative capacity should be based on explicit criteria. In addition to the conditions in subsection (a) of this section, the Commission or Department may consider the following:

(A) Environmental Effects Criteria:

(i) Adverse Out-of-Stream Effects. There may be instances where the non-discharge or limited discharge alternatives may cause greater adverse environmental effects than the increased discharge alternative. An example may be the potential degradation of groundwater from land application of wastes;

(ii) Instream Effects. Total stream loading may be reduced through elimination or reduction of other source discharges or through a reduction in seasonal discharge. A source that replaces other sources, accepts additional waste from less efficient treatment units or systems, or reduces discharge loadings during periods of low stream flow may be permitted an increased discharge load year-round or during seasons of high flow, so long as the loading has no adverse affect on threatened and endangered species;

(iii) Beneficial Effects. Land application, upland wetlands application, or other non-discharge alternatives for appropriately treated wastewater may replenish groundwater levels and increase streamflow and assimilative capacity during otherwise low streamflow periods.

(B) Economic Effects Criteria. When assimilative capacity exists in a stream, and when it is judged that increased loadings will not have significantly greater adverse environmental effects than other alternatives to increased discharge, the economic effect of increased loading will be considered. Economic effects will be of two general types:

(i) Value of Assimilative Capacity. The assimilative capacity of Oregon's streams is finite, but the potential uses of this capacity are virtually unlimited. Thus it is important that priority be given to those beneficial uses that promise the greatest return (beneficial use) relative to the unused assimilative capacity that might be utilized. In-stream uses that will benefit from reserve assimilative capacity, as well as potential future beneficial use, will be weighed against the economic benefit associated with increased loading;

(ii) Cost of Treatment Technology. The cost of improved treatment technology, non-discharge and limited discharge alternatives may be evaluated.

340-041-0007

State Wide Narrative Criteria

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

(2) Where **a less stringent** natural condition **of a water of the State exceeds the numeric criteria set out in this Division, the natural condition supersedes the numeric criteria and becomes the standard for that water body. However, there are special restrictions, described in OAR 340-041-0004(9)(a)(C)(iii), that may apply to discharges that affect dissolved oxygen.**

(3) Point source discharges must follow policies and guidelines in OAR 340-041-0004, and nonpoint source activities must follow guidelines in sections (6), (8), (9), (10), (11), and (12) of this rule.

(4) For any new waste sources, alternatives that utilize reuse or disposal with no discharge to public waters must be given highest priority for use wherever practicable. New source discharges may be approved subject to the criteria in OAR 340-041-0004(9).

(5) No discharges of wastes to lakes or reservoirs may be allowed except as provided in section OAR 340-041-0004(9).

(6) Logging and forest management activities must be conducted in accordance with the Oregon Forest Practices Act to minimize adverse effects on water quality.

(7) Log handling in public waters must conform to current Commission policies and guidelines.

(8) Sand and gravel removal operations must be conducted pursuant to a permit from the Division of State Lands and separated from the active flowing stream by a watertight berm wherever physically practicable. Recirculation and reuse of process water must be required wherever practicable. Discharges or seepage or leakage losses to public waters may not cause a violation of water quality standards or adversely affect legitimate beneficial uses.

(9) Road building and maintenance activities must be conducted in a manner so as to keep waste materials out of public waters and minimize erosion of cut banks, fills, and road surfaces.

(10) In order to improve controls over nonpoint sources of pollution, federal, State, and local resource management agencies will be encouraged and assisted to coordinate planning and implementation of programs to regulate or control runoff, erosion, turbidity, stream temperature, stream flow, and the withdrawal and use of irrigation water on a basin-wide approach so as to protect the quality and beneficial uses of water and related resources. Such programs may include, but not be limited to, the following:

(a) Development of projects for storage and release of suitable quality waters to augment low stream flow;

(b) Urban runoff control to reduce erosion;

(c) Possible modification of irrigation practices to reduce or minimize adverse impacts from irrigation return flows;

(d) Stream bank erosion reduction projects; and

(e) Federal water quality restoration plans.

(11) The development of fungi or other growths having a deleterious effect on stream bottoms, fish or other aquatic life, or that are injurious to health, recreation, or industry may not be allowed;

(12) The creation of tastes or odors or toxic or other conditions that are deleterious to fish or other aquatic life or affect the potability of drinking water or the palatability of fish or shellfish may not be allowed;

(13) The formation of appreciable bottom or sludge deposits or the formation of any organic or inorganic deposits deleterious to fish or other aquatic life or injurious to public health, recreation, or industry may not be allowed;

(14) Objectionable discoloration, scum, oily sheens, or floating solids, or coating of aquatic life with oil films may not be allowed;

(15) Aesthetic conditions offensive to the human senses of sight, taste, smell, or touch may not be allowed;

(16) Radioisotope concentrations may not exceed maximum permissible concentrations (MPC's) in drinking water, edible fishes or shellfishes, wildlife, irrigated crops, livestock and dairy products, or pose an external radiation hazard;

(17) Minimum Design Criteria for Treatment and Control of Wastes. **Except as provided in OAR 340-041-0101 through OAR 340-041-0350,** and subject to the implementation requirements set forth in OAR 340-041-0061, prior to discharge of any wastes from any new or modified facility to any waters of the State, such wastes must be

treated and controlled in facilities designed in accordance with the following minimum criteria.

(a) In designing treatment facilities, average conditions and a normal range of variability are generally used in establishing design criteria. A facility once completed and placed in operation should operate at or near the design limit most of the time but may operate below the design criteria limit at times due to variables which are unpredictable or uncontrollable. This is particularly true for biological treatment facilities. The actual operating limits are intended to be established by permit pursuant to ORS 468.740 and recognize that the actual performance level may at times be less than the design criteria.

(A) Sewage wastes:

(i) Effluent BOD concentrations in mg/l, divided by the dilution factor (ratio of receiving stream flow to effluent flow) may not exceed one unless otherwise approved by the Commission;

(ii) Sewage wastes must be disinfected, after treatment, equivalent to thorough mixing with sufficient chlorine to provide a residual of at least 1 part per million after 60 minutes of contact time unless otherwise specifically authorized by permit;

(iii) Positive protection must be provided to prevent bypassing raw or inadequately treated sewage to public waters unless otherwise approved by the Department where elimination of inflow and infiltration would be necessary but not presently practicable; and

(iv) More stringent waste treatment and control requirements may be imposed where special conditions make such action appropriate.

(B) Industrial wastes:

(i) After maximum practicable inplant control, a minimum of secondary treatment or equivalent control (reduction of suspended solids and organic material where present in significant quantities, effective disinfection where bacterial organisms of public health significance are present, and control of toxic or other deleterious substances);

(ii) Specific industrial waste treatment requirements may be determined on an individual basis in accordance with the provisions of this plan, applicable federal requirements, and the following:

(I) The uses that are or may likely be made of the receiving stream;

(II) The size and nature of flow of the receiving stream;

(III) The quantity and quality of wastes to be treated; and

(IV) The presence or absence of other sources of pollution on the same watershed.

(iii) Where industrial, commercial, or agricultural effluents contain significant quantities of potentially toxic elements, treatment requirements may be determined utilizing appropriate bioassays;

(iv) Industrial cooling waters containing significant heat loads must be subjected to offstream cooling or heat recovery prior to discharge to public waters;

(v) Positive protection must be provided to prevent bypassing of raw or inadequately treated industrial wastes to any public waters;

(vi) Facilities must be provided to prevent and contain spills of potentially toxic or hazardous materials.

Stat. Auth: ORS 183.500, ORS 468.020, ORS 468B.048, ORS 468.705, ORS 468.710 & ORS 468.735
Stats. Implemented: ORS 468B.048
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 1-1980, f. & ef. 1-9-80; DEQ 13-1989, f. & cert. ef. 6-14-89; DEQ 22-1990, f. & cert. ef. 7-6-90; DEQ 17-1991, f. & cert. ef. 9-30-91; DEQ 5-1996, f. & cert. ef. 3-7-96

340-041-0009

Bacteria

(1) Numeric Criteria: Organisms of the coliform group commonly associated with fecal sources (MPN or equivalent membrane filtration using a representative number of samples) may not exceed the criteria described in paragraphs (a) and (b) of this paragraph:

(a) Freshwaters and Estuarine Waters Other than Shellfish Growing Waters:

(A) A 30-day log mean of 126 *E. coli* organisms per 100 milliliters, based on a minimum of five (5) samples;

(B) No single sample may exceed 406 *E. coli* organisms per 100 milliliters.

(b) Marine Waters and Estuarine Shellfish Growing Waters: A fecal coliform median concentration of 14 organisms per 100 milliliters, with not more than ten percent of the samples exceeding 43 organisms per 100 ml.

(2) Raw Sewage Prohibition: No sewage may be discharged into or in any other manner be allowed to enter the waters of the State, unless such sewage has been treated in a manner approved by the Department or otherwise allowed by these rules;

(3) Animal Waste: Runoff contaminated with domesticated animal wastes must be minimized and treated to the maximum extent practicable before it is allowed to enter waters of the State;

(4) Bacterial pollution or other conditions deleterious to waters used for domestic purposes, livestock watering, irrigation, bathing, or shellfish propagation, or otherwise injurious to public health may not be allowed;

(5) Effluent Limitations for Bacteria: Except as allowed in subsection (c) of this section, upon NPDES permit renewal or issuance, or upon request for a permit modification by the permittee at an earlier date, effluent discharges to freshwaters, and estuarine waters other than shellfish growing waters may not exceed a monthly log mean of 126 E. coli organisms per 100 ml. No single sample may exceed 406 E. coli organisms per 100 ml. However, no violation will be found, for an exceedance if the permittee takes at least five consecutive re-samples at four-hour intervals beginning as soon as practicable (preferably within 28 hours) after the original sample was taken and the log mean of the five re-samples is less than or equal to 126 E. coli. The following conditions apply:

(a) If the Department finds that re-sampling within the timeframe outlined in this section would pose an undue hardship on a treatment facility, a more convenient schedule may be negotiated in the permit, provided that the permittee demonstrates that the sampling delay will result in no increase in the risk to water contact recreation in waters affected by the discharge;

(b) The in-stream criterion for chlorine listed in Table 20 must be met at all times outside the assigned mixing zone;

(c) For sewage treatment plants that are authorized to use reclaimed water pursuant to OAR Chapter 340, Division 55, and that also use a storage pond as a means to dechlorinate their effluent prior to discharge to public waters, effluent limitations for bacteria may, upon request by the permittee, be based upon appropriate total coliform, limits as required by OAR Chapter 340, Division 55:

(i) Level II limitations: No two consecutive samples may exceed 240 total coliform per 100 milliliters.

(ii) Level III and Level IV limitations: No single sample may exceed 23 total coliform per 100 milliliters.

(iii) No violation will be found for an exceedance under this paragraph if the permittee takes at least five consecutive re-samples at four hour intervals beginning as soon as practicable (preferably within 28 hours) after the original sample(s) were taken; and in the case of Level II effluent, the log mean of the five re-samples is less than or equal to 23 total coliform per 100 milliliters or, in the case of Level III and IV effluent, if the log mean of the five re-samples is less than or equal to 2.2 total coliform per 100 milliliters.

(6) Sewer Overflows in Winter: Domestic waste collection and treatment facilities are prohibited from discharging raw sewage to waters of the State during the period of November 1 through May 21, except during a storm event greater than the one-in-five-year, 24-hour duration storm. However, the following exceptions apply:

(a) The Commission may on a case-by-case basis approve a bacteria control management plan to be prepared by the permittee, for a basin or specified geographic area which describes hydrologic conditions under which the numeric bacteria criteria would be waived. These plans will identify the specific hydrologic conditions, identify the public notification and education processes that will be followed to inform the public about an event and the plan, describe the water quality assessment conducted to determine bacteria sources and loads associated with the specified hydrologic conditions, and describe the bacteria control program that is being implemented in the basin or specified geographic area for the identified sources;

(b) Facilities with separate sanitary and storm sewers existing on January 10, 1996, and which currently experience sanitary sewer overflows due to inflow and infiltration problems, must submit an acceptable plan to the Department at the first permit renewal, which describes actions that will be taken to assure compliance with the discharge prohibition by January 1, 2010. Where discharges occur to a receiving stream with sensitive beneficial uses, the Department may negotiate a more aggressive schedule for discharge elimination;

(c) On a case-by-case basis, the beginning of winter may be defined as October 15, if the permittee so requests and demonstrates to the Department's satisfaction that the risk to beneficial uses, including water contact recreation, will not be increased due to the date change.

(7) Sewer Overflows in Summer: Domestic waste collection and treatment facilities are prohibited from discharging raw sewage to waters of the State during the period of May 22 through October 31, except during a storm event greater than the one-in-ten-year, 24-hour duration storm. The following exceptions apply:

(a) For facilities with combined sanitary and storm sewers, the Commission may on a case-by-case basis approve a bacteria control management plan such as that described in subsection (6)(a) of this rule;

(b) On a case-by-case basis, the beginning of summer may be defined as June 1 if the permittee so requests and demonstrates to the Department's satisfaction that the risk to beneficial uses, including water contact recreation, will not be increased due to the date change;

(c) For discharge sources whose permit identifies the beginning of summer as any date from May 22 through May 31: If the permittee demonstrates to the Department's satisfaction that an exceedance occurred between May 21 and June 1 because of a sewer

overflow, and that no increase in risk to beneficial uses, including water contact recreation, occurred because of the exceedance, no violation may be triggered, if the storm associated with the overflow was greater than the one-in-five-year, 24-hour duration storm.

(8) Storm Sewers Systems Subject to Municipal NPDES Storm Water Permits: Best management practices must be implemented for permitted storm sewers to control bacteria to the maximum extent practicable. In addition, a collection-system evaluation must be performed prior to permit issuance or renewal so that illicit and cross connections are identified. Such connections must be removed upon identification. A collection system evaluation is not required where the Department determines that illicit and cross connections are unlikely to exist.

(9) Storm Sewers Systems Not Subject to Municipal NPDES Storm Water Permits: A collection system evaluation must be performed of non-permitted storm sewers by January 1, 2005, unless the Department determines that an evaluation is not necessary because illicit and cross connections are unlikely to exist. Illicit and cross-connections must be removed upon identification.

(10) Water Quality Limited for Bacteria: In those water bodies, or segments of water bodies identified by the Department as exceeding the relevant numeric criteria for bacteria in the basin standards and designated as water-quality limited under section 303(d) of the Clean Water Act, the requirements specified in **section 11 of this rule** and in OAR 340-041-0061(11) must apply.

(11) In water bodies designated by the Department as water-quality limited for bacteria, and in accordance with priorities established by the Department, development and implementation of a bacteria management plan may be required of those sources that the Department determines to be contributing to the problem. The Department may determine that a plan is not necessary for a particular stream segment or segments within a water-quality limited basin based on the contribution of the segment(s) to the problem. The bacteria management plans will identify the technologies, best management practices and/or measures and approaches to be implemented by point and nonpoint sources to limit bacterial contamination. For point sources, their National Pollutant Discharge Elimination System permit is their bacteria management plan. For nonpoint sources, the bacteria management plan will be developed by designated management agencies (DMAs) which will identify the appropriate best management practices or measures and approaches.
[ED. NOTE: The Table(s) referenced in this rule is not printed in the OAR Compilation. Copies are available from the agency.]

340-041-0011

Biocriteria

Waters of the State must be of sufficient quality to support aquatic species without detrimental changes in the resident biological communities.
Stat. Auth.: ORS 468.735
Stats. Implemented: ORS 468B.048
Hist.: DEQ 14-1991, f. & cert. ef. 8-13-91

340-041-0016

Dissolved Oxygen

(1) Dissolved oxygen (DO): No wastes may be discharged and no activities must be conducted that either alone or in combination with other wastes or activities will cause violation of the following standards: The changes adopted by the Commission on January 11, 1996, become effective July 1, 1996. Until that time, the requirements of this rule that were in effect on January 10, 1996, apply:

(a) For water bodies identified **as active spawning areas in the places and times indicated on the following Tables and Figures set out in OAR 340-041-0101 to OAR 340-041-0340: Tables 101B, 121B, 180B, 201B and 260B, and Figures 130B, 151B, 160B, 170B, 220B, 230B, 271B, 286B, 300B, 310B, 320B, and 340B, (as well as any active spawning area used by resident trout species),** the following criteria apply **during the applicable spawning through fry emergence periods set forth in the tables and figures**:

(A) The dissolved oxygen may not be less than 11.0 mg/l. However, if the minimum intergravel dissolved oxygen, measured as a spatial median, is 8.0 mg/l or greater, then the DO criterion is 9.0 mg/l;

(B) Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 11.0 mg/l or 9.0 mg/l criteria, dissolved oxygen levels must not be less than 95 percent of saturation.

(b) For water bodies identified by the Department as providing cold-water aquatic life, the dissolved oxygen may not be less than 8.0 mg/l as an absolute minimum. Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 8.0 mg/l, dissolved oxygen may not be less than 90 percent of saturation. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen may not fall below 8.0 mg/l as a 30-day mean minimum, 6.5 mg/l as a seven-day minimum mean, and may not fall below 6.0 mg/l as an absolute minimum (Table 21);

(c) For water bodies identified by the Department as providing cool-water aquatic life, the dissolved oxygen may not be less than 6.5 mg/l as an absolute minimum. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen may not fall below 6.5 mg/l as a 30-day mean minimum, 5.0

mg/l as a seven-day minimum mean, and may not fall below 4.0 mg/l as an absolute minimum (Table 21);

(d) For water bodies identified by the Department as providing warm-water aquatic life, the dissolved oxygen may not be less than 5.5 mg/l as an absolute minimum. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen may not fall below 5.5 mg/l as a 30-day mean minimum, and may not fall below 4.0 mg/l as an absolute minimum (Table 21);

(e) For estuarine water, the dissolved oxygen concentrations may not be less than 6.5 mg/l (for coastal waterbodies);

(f) For ocean waters, no measurable reduction in dissolved oxygen concentration may be allowed.

340-041-0019

Nuisance Phytoplankton Growth

(1) The following values and implementation program must be applied to lakes, reservoirs, estuaries and streams, except for ponds and reservoirs less than ten acres in surface area, marshes and saline lakes:

(a) The following average Chlorophyll a values must be used to identify water bodies where phytoplankton may impair the recognized beneficial uses:

(A) Natural lakes that thermally stratify: 0.01 mg/1;

(B) Natural lakes that do not thermally stratify, reservoirs, rivers and estuaries: 0.015 mg/1;

(C) Average Chlorophyll a values may be based on the following methodology (or other methods approved by the Department): A minimum of three samples collected over any three consecutive months at a minimum of one representative location (e.g., above the deepest point of a lake or reservoir or at a point mid-flow of a river) from samples integrated from the surface to a depth equal to twice the secchi depth or the bottom (the lesser of the two depths); analytical and quality assurance methods must be in accordance with the most recent edition of *Standard Methods for the Examination of Water and Wastewater.*

(2) Upon determination by the Department that the values in section (1) of this rule are exceeded, the Department may:

(a) In accordance with a schedule approved by the Commission, conduct such studies as are necessary to describe present water quality; determine the impacts on beneficial uses;

determine the probable causes of the exceedance and beneficial use impact; and develop a proposed control strategy for attaining compliance where technically and economically practicable. Proposed strategies could include standards for additional pollutant parameters, pollutant discharge load limitations, and other such provisions as may be appropriate. Where natural conditions are responsible for exceedance of the values in section (1) of this rule or beneficial uses are not impaired, the values in section (1) of this rule may be modified to an appropriate value for that water body;

(b) Conduct necessary public hearings preliminary to adoption of a control strategy, standards or modified values after obtaining Commission authorization;

(c) Implement the strategy upon adoption by the Commission.

(3) In cases where waters exceed the values in section (1) of this rule and the necessary studies are not completed, the Department may approve new activities (which require Department approval), new or additional (above currently approved permit limits) discharge loadings from point sources provided that it is determined that beneficial uses would not be significantly impaired by the new activity or discharge.
[Publications: The publication(s) referred to or incorporated by reference in this rule are available from the agency.]
Stat. Auth.: ORS 468
Stats. Implemented: ORS 468B.048
Hist.: DEQ 7-1986, f. & ef. 3-26-86

340-041-0021

pH

(1) **Unless otherwise specified in OAR 340-041-0101 through 340-041-0350,** pH values (Hydrogen ion concentrations) may not fall outside the following ranges:

(a) Marine waters: 7.0 – 8.5;

(b) Estuarine and fresh waters: 6.5 – 8.5.

(2) Waters impounded by dams existing on January 1, 1996, which have pHs that exceed the criteria are not in violation of the standard, if the Department determines that the exceedance would not occur without the impoundment and that all practicable measures have been taken to bring the pH in the impounded waters into compliance with the criteria.

340-041-0028

Temperature

(1) Background. Water temperatures affect the biological cycles of aquatic species and are a critical factor in maintaining and restoring healthy salmonid populations throughout the State. Water temperatures are influenced by solar radiation, stream shade, ambient air temperatures, channel morphology, groundwater inflows, and stream velocity, volume, and flow. Surface water temperatures may also be warmed by anthropogenic activities such as discharging heated water, changing stream width or depth, reducing stream shading, and water withdrawals.

(2) Policy. It is the policy of the Commission to protect aquatic ecosystems from adverse warming and cooling caused by anthropogenic activities. The Commission intends to minimize the risk to cold-water aquatic ecosystems from anthropogenic warming, to encourage the restoration and protection of critical aquatic habitat, and to control extremes in temperature fluctuations due to anthropogenic activities. The Commission recognizes that some of the State's waters will, in their natural condition, not provide optimal thermal conditions at all places and at all times that salmonid use occurs. Therefore, it is especially important to minimize additional warming due to anthropogenic sources. In addition, the Commission acknowledges that control technologies, best management practices and other measures to reduce anthropogenic warming are evolving and that the implementation to meet these criteria will be an iterative process. Finally, the Commission notes that it will reconsider beneficial use designations in the event that man-made obstructions or barriers to anadromous fish passage are removed and may justify a change to the beneficial use for that water body.

(3) Purpose. The purpose of the temperature criteria in this rule is to protect designated temperature-sensitive, beneficial uses, including specific salmonid life cycle stages in waters of the State.

(4) Biologically Based Numeric Criteria. Unless superseded by the natural conditions criteria described in section (8) of this rule, or by subsequently adopted site-specific criteria approved by EPA, the temperature criteria for State waters supporting salmonid fishes are as follows:

(a) The seven-day-average maximum temperature of a stream identified as having salmon and steelhead spawning use on subbasin maps and tables set out in OAR 340-041-0101 to OAR 340-041-0340: Tables 101B, and 121B, and Figures 130B, 151B, 160B, 170B, 220B, 230B, 271B, 286B, 300B, 310B, 320B, and 340B, may not exceed 13.0 degrees Celsius (55.4 degrees Fahrenheit) at the times indicated on these maps and tables;

(b) The seven-day-average maximum temperature of a stream identified as having core cold water habitat use on subbasin maps set out in OAR 340-041-101 to OAR 340-041-340: Figures 130A, 151A, 160A, 170A, 220A, 230A, 271A, 286A, 300A, 310A, 320A, and 340A, may not exceed 16.0 degrees Celsius (60.8 degrees Fahrenheit);

(c) The seven-day-average maximum temperature of a stream identified as having salmon and trout rearing and migration use on subbasin maps set out at OAR 340-041-0101 to OAR 340-041-0340: Figures 130A, 151A, 160A, 170A, 220A, 230A, 271A, 286A, 300A, 310A, 320A, and 340A, may not exceed 18.0 degrees Celsius (64.4 degrees Fahrenheit);

(d) The seven-day-average maximum temperature of a stream identified as having a migration corridor use on subbasin maps and tables OAR 340-041-0101 to OAR 340-041-0340: Tables 101B, and 121B, and Figures 151A, 170A, and 340A, may not exceed 20.0 degrees Celsius (68.0 degrees Fahrenheit). In addition, these water bodies must have cold water refugia that is sufficiently distributed so as to allow salmon and steelhead migration without significant adverse effects from higher water temperatures elsewhere in the water body. Finally, the seasonal thermal pattern in Columbia and Snake Rivers must reflect the natural seasonal thermal pattern;

(e) The seven-day-average maximum temperature of a stream identified as having Lahontan cutthroat trout or redband trout use on subbasin maps and tables set out in OAR 340-041-0101 to OAR 340-041-0340: Tables 120B, 140B, 190B, and 250B, and Figures 180A, 201A, and 260A may not exceed 20.0 degrees Celsius (68.0 degrees Fahrenheit);

(f) The seven-day-average maximum temperature of a stream identified as having bull trout spawning and juvenile rearing use on subbasin maps set out at OAR 340-041-0101 to OAR 340-041-0340: Figures 130B, 151B, 160B, 170B, 180A, 201A, 260A, 310B, and 340B, may not exceed 12.0 degrees Celsius (53.6 degrees Fahrenheit). In waters designated as bull trout spawning habitat that are located downstream from a reservoir, there may be no more than a 0.3 degrees Celsius (0.5 Fahrenheit) increase between the water temperature immediately upstream of the reservoir and the water temperature immediately downstream of the spillway when bull trout are spawning or during egg incubation;

(5) Unidentified Tributaries. For waters that are not identified on the fish use maps and tables referenced in section (4) of this rule, the applicable criteria for these waters are the same criteria as is applicable to the nearest downstream water body depicted on the applicable map.

(6) Natural Lakes. Natural lakes may not be warmed by more than 0.3 degrees Celsius (0.5 degrees Fahrenheit) above the ambient condition unless a greater increase would not reasonably be expected to adversely affect fish or other aquatic life.

(7) Oceans and Bays. Except for the Columbia River above river mile 7, ocean and bay waters may not be warmed by more than 0.3 degrees Celsius (0.5 degrees

Fahrenheit) above the ambient condition unless a greater increase would not reasonably be expected to adversely affect fish or other aquatic life.

(8) Natural Conditions Criteria. Where the department determines that the natural thermal potential of all or a portion of a water body exceeds the biologically-based criteria in section (4) of this rule, the natural thermal potential temperatures supersede the biologically-based criteria, and are deemed to be the applicable temperature criteria for that water body.

(9) Cool Water Species. Waters that support cool water species may not be warmed by more than 0.3 degrees Celsius (0.5 degrees Fahrenheit) above the ambient condition unless a greater increase would not reasonably be expected to adversely affect fish or other aquatic life. Cool waters of the State are described on subbasin tables set out in OAR 340-041-0101 to OAR 340-041-0340: Tables 140B, 180B, 201B, and 250B.

(10) Borax Lake Chub. State waters in the Malheur Lake Basin supporting the borax lake chub may not be cooled more than 0.3 degrees Celsius (0.5 degrees Fahrenheit) below the ambient condition.

(11) Protecting Cold Water. (a) Except as described in subsection (c) of this rule, waters of the State that have summer seven-day-average maximum ambient temperatures that are colder than the biologically based criteria in section (4) of this rule, may not be warmed by more than 0.3 degrees Celsius (0.5 degrees Fahrenheit) above the colder water ambient temperature. This provision applies to all sources taken together at the point of maximum impact where salmon, steelhead or bull trout are present.

(b) A point source that discharges into or above salmon & steelhead spawning waters that are colder than the spawning criterion, may not cause the water temperature in the spawning reachwhere the physical habitat for spawning exists during the time spawning through emergence use occurs, to increase more than the following amounts after complete mixing of the effluent with the river:

(A) If the rolling 60 day average maximum ambient water temperature, between the dates of spawning use as designated under subsection (4)(a) of this rule, is 10 to 12.8 degrees Celsius, the allowable increase is 0.5 Celsius above the 60 day average; or

(B) If the rolling 60 day average maximum ambient water temperature, between the dates of spawning use as designated under subsection (4)(a) of this rule, is less than 10 degrees Celsius, the allowable increase is 1.0 Celsius above the 60 day average, unless the source provides analysis showing that a greater increase will not significantly impact the survival of salmon or steelhead eggs or the timing of salmon or steelhead fry emergence from the gravels in downstream spawning reach.

(c) The cold water protection narrative criteria in subsection (a) does not apply if:

(A) There are no threatened or endangered salmonids currently inhabiting the water body;

(B) The water body has not been designated as critical habitat; and

(C) The colder water is not necessary to ensure that downstream temperatures achieve and maintain compliance with the applicable temperature criteria.

(12) Implementation of the Temperature Criteria.

(a) Minimum Duties. There is no duty for anthropogenic sources to reduce heating of the waters of the State below their natural condition. Similarly, each anthropogenic point and nonpoint source is responsible only for controlling the thermal effects of its own discharge or activity in accordance with its overall heat contribution. In no case may a source cause more warming than that allowed by the human use allowance provided in subsection (b) of this rule.

(b) Human Use Allowance. Insignificant additions of heat are authorized in waters that exceed the applicable temperature criteria as follows:

(A) Prior to the completion of a temperature TMDL or other cumulative effects analysis, no single NPDES point source that discharges into a temperature water quality limited water may cause the temperature of the water body to increase more than 0.3 degrees Celsius (0.5 Fahrenheit) above the applicable criteria after mixing with either twenty five (25) percent of the stream flow, or the temperature mixing zone, whichever is more restrictive; or

(B) Following a temperature TMDL or other cumulative effects analysis, waste load and load allocations will restrict all NPDES point sources and nonpoint sources to a cumulative increase of no greater than 0.3 degrees Celsius (0.5 Fahrenheit) above the applicable criteria after complete mixing in the water body, and at the point of maximum impact.

(C) Point sources must be in compliance with the additional mixing zone requirements set out in OAR 340-041-0053(2)(d).

(D) A point source in compliance with the temperature conditions of its NPDES permit is deemed in compliance with the applicable criteria.

(c) Air Temperature Exclusion. A water body that only exceeds the criteria set out in this rule when the exceedance is attributed to daily maximum air temperatures that exceed the 90th percentile value of annual maximum seven-day average maximum air temperatures calculated using at least 10 years of air temperature data, will not be listed on the section 303(d) list of impaired waters and sources will not be considered in violation of this rule.

(d) Low Flow Conditions. An exceedance of the biologically-based numeric criteria in section (4) of this rule, or an exceedance of the natural condition criteria in section (8) of this rule will not be considered a permit violation during stream flows that are less than the 7Q10 low flow condition for that water body.

(e) Forestry on State and Private Lands. For forest operations on State or private lands, water quality standards are intended to be attained and are implemented through best management practices and other control mechanisms established under the Forest Practices Act (ORS 527.610 to 527.992) and rules thereunder, administered by the Oregon Department of Forestry. Therefore, forest operations that are in compliance with the Forest Practices Act requirements are (except for the limits set out in ORS 527.770) deemed in compliance with this rule. DEQ will work with the Oregon Department of Forestry to revise the Forest Practices program to attain water quality standards.

(f) Agriculture on State and Private Lands. For farming or ranching operations on State or private lands, water quality standards are intended to be attained and are implemented through the Agricultural Water Quality Management Act (ORS 568.900 to 568.933) and rules thereunder, administered by the Oregon Department of Agriculture. Therefore, farming and ranching operations that are in compliance with the Agricultural Water Quality Management Act requirements will not be subject to DEQ enforcement under this rule. DEQ will work with the Oregon Department of Agriculture to revise the Agricultural Water Quality Management program to attain water quality standards.

(g) Agriculture and Forestry on Federal Lands. Agriculture and forestry activities conducted on federal land must meet the requirements of this rule and are subject to the department's jurisdiction. Pursuant to Memoranda of Agreement with the U.S. Forest Service and the Bureau of Land Management, water quality standards are expected to be met through the development and implementation of water quality restoration plans, best management practices and aquatic conservation strategies. Where a Federal Agency is a Designated Management Agency by the Department, implementation of these plans, practices and strategies is deemed compliance with this rule.

(h) Other Nonpoint Sources. The department may, on a case-by-case basis, require nonpoint sources (other than forestry and agriculture), including private hydropower facilities regulated by a 401 water quality certification, that may contribute to warming of State waters beyond 0.3 degrees Celsius (0.5 degrees Fahrenheit), and are therefore designated as water-quality limited, to develop and implement a temperature management plan to achieve compliance with applicable temperature criteria or an applicable load allocation in a TMDL pursuant to OAR 340-042-0080.

(A) Each plan must ensure that the nonpoint source controls its heat load contribution to water temperatures such that the water body experiences no more than a 0.3 degrees Celsius (0.5 degree Fahrenheit) increase above the applicable criteria from all sources taken together at the maximum point of impact.

(B) Each plan must include a description of best management practices, measures, effluent trading, and control technologies (including eliminating the heat impact on the stream) that the nonpoint source intends to use to reduce its temperature effect, a monitoring plan, and a compliance schedule for undertaking each measure.

(C) The Department may periodically require a nonpoint source to revise its temperature management plan to ensure that all practical steps have been taken to mitigate or eliminate the temperature effect of the source on the water body.

(D) Once approved, a nonpoint source complying with its temperature management plan is deemed in compliance with this rule.

(i) Compliance Methods. Anthropogenic sources may engage in thermal water quality trading in whole or in part to offset its temperature discharge, so long as the trade results in at least a net thermal loading decrease in anthropogenic warming of the waterbody, and does not adversely affect a threatened or endangered species . Sources may also achieve compliance, in whole or in part, by flow augmentation, hyporheic exchange flows, outfall relocation, or other measures that reduce the temperature increase caused by the discharge.

(j) Release of Stored Water. Stored cold water may be released from reservoirs to cool downstream waters in order to achieve compliance with the applicable numeric criteria. However, there can be no significant adverse impact to downstream designated beneficial uses as a result of the releases of this cold water, and the release may ~~does~~ not contribute to violations of other water quality criteria. Where the Department determines that the release of cold water is resulting in a significant adverse impact, the Department may require the elimination or mitigation of the adverse impact.

(13) Site-Specific Criteria. The Department may establish, by separate rulemaking, alternative site-specific criteria for all or a portion of a water body that fully protects the designated use.

(a) These site-specific criteria may be set on a seasonal basis as appropriate.

(b) The Department may use, but is not limited by the following considerations when calculating site-specific criteria:

(A) Stream flow;

(B) Riparian vegetation potential;

(C) Channel morphology modifications;

(D) Cold water tributaries and groundwater;

(E) Natural physical features and geology influencing stream temperatures; and

(F) Other relevant technical data.

(c) DEQ may consider the thermal benefit of increased flow when calculating the site-specific criteria.

(d) Once established and approved by EPA, the site-specific criteria will be the applicable criteria for the water bodies affected.

340-041-0031

Total Dissolved Gas

(1) Waters will be free from dissolved gases, such as carbon dioxide hydrogen sulfide, or other gases, in sufficient quantities to cause objectionable odors or to be deleterious to fish or other aquatic life, navigation, recreation, or other reasonable uses made of such water.

(2) Except when stream flow exceeds the ten-year, seven-day average flood, the concentration of total dissolved gas relative to atmospheric pressure at the point of sample collection may not exceed 110 percent of saturation. However, in hatchery-receiving waters and other waters of less than two feet in depth, the concentration of total dissolved gas relative to atmospheric pressure at the point of sample collection may not exceed 105 percent of saturation.

340-041-0032

Total Dissolved Solids (TDS)

Total Dissolved Solids: Total Dissolved Solids: The concentrations listed below may not be exceeded unless otherwise specifically authorized by DEQ upon such conditions as it may deem necessary: All Fresh Water Streams and Tributaries -- 100.0 mg/l.

340-041-0033

Toxic Substances

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

(2) Levels of toxic substances may not exceed the criteria listed in Table 20 which were based on criteria established by EPA and published in *Quality Criteria for Water* (1986), unless otherwise noted;

(3) The criteria in **section** (2) of this **rule** must apply unless data from scientifically valid studies demonstrate that the most sensitive designated beneficial uses will not be adversely affected by exceeding a criterion, or that a more restrictive criterion is warranted to protect beneficial uses, as accepted by the Department on a site specific basis. Where no published EPA criteria exist for a toxic substance, public health advisories and other published scientific literature may be considered and used, if appropriate, to set guidance values;

(4) If the Department determines that it is necessary to monitor the toxicity of complex effluents, other suspected discharges or chemical substances without numeric criteria to aquatic life, then bio-assessment studies may be conducted. Laboratory bioassays or in-stream measurements of indigenous biological communities, properly conducted in accordance with standards testing procedures, may be considered as scientifically valid data for the purposes of **section** (3) of this **rule**. If toxicity occurs, the Department will evaluate and implement necessary measures to reduce or eliminate the toxicity on a case-by-case basis.

340-041-0036

Turbidity

Turbidity (Nephelometric Turbidity Units, NTU): No more than a ten percent cumulative increase in natural stream turbidities may be allowed, as measured relative to a control point immediately upstream of the turbidity causing activity. However, limited duration activities necessary to address an emergency or to accommodate essential dredging, construction or other legitimate activities and which cause the standard to be exceeded may be authorized provided all practicable turbidity control techniques have been applied and one of the following has been granted:

(a) Emergency activities: Approval coordinated by the Department with the Oregon Department of Fish and Wildlife under conditions they may prescribe to accommodate response to emergencies or to protect public health and welfare;

(b) Dredging, Construction or other Legitimate Activities: Permit or certification authorized under terms of section 401 or 404 (Permits and Licenses, Federal Water

Pollution Control Act) or OAR 141-085-0100 et seq. (Removal and Fill Permits, Division of State Lands), with limitations and conditions governing the activity set forth in the permit or certificate.

340-041-0046

Water Quality Limited Waters

(1)A receiving stream may be designated as water quality limited through the biennial water quality status assessment report prepared to meet the requirements of section 305(b) of the Federal Clean Water Act. Appendix A of the Status Assessment report will identify: what water bodies are water quality limited, the time of year the water quality standards violations occur, the segment of stream or area of waterbody limited, the parameter(s) of concern, whether it is water quality limited under OAR 340-041-0002(62)(a), (b) or (c). Appendix B and C of the Status Assessment report will identify the specific evaluation process for designating water bodies limited;

(2) The water quality limited list contained in Appendix A of the Status Assessment report will be placed on public notice and reviewed through the public hearing process. At the conclusion of the hearing process and the evaluation of the testimony, Appendix A will become the official water quality limited list. The Department may add a waterbody to the water quality limited list between status assessment reports after placing that action out on public notice and conducting a public hearing;

(3) For interstate water bodies, the State is responsible for completing the requirements of OAR 340-041-0004(9) of this rule for that portion of the interstate waterbody within the boundary of the State;

(4) For water bodies designated as water quality limited under OAR 340-041-0002(62)(c), the Department will establish a priority list and schedule for future water quality monitoring activities to determine: if the waterbody should be designated as water quality limited under OAR 340-041-0002(62)(a) or (b), if estimated TMDLs need to be prepared, and if an implementation plan needs to be developed and implemented;

(5) For water bodies designated as water quality limited under OAR 340-041-0002(62)(b), requests for load increases may be considered using the process set out in OAR 340-041-0004(9)(b) of this rule.

(6) Appendix B and C of the Status Assessment report will identify the specific evaluation process for designating water bodies limited.

340-041-0053

Mixing Zones

(1) The Department may allow a designated portion of a receiving water to serve as a zone of dilution for wastewaters and receiving waters to mix thoroughly and this zone will be defined as a mixing zone;

(2) The Department may suspend all or part of the water quality standards, or set less restrictive standards in the defined mixing zone, provided that the following conditions are met:

(a) **A point source for which the mixing zone is established may not cause or significantly contribute to any of the following:**

(A) Materials in concentrations that will cause acute toxicity to aquatic life as measured by a Department approved bioassay method. Acute toxicity is lethal to aquatic life as measured by a significant difference in lethal concentration between the control and 100 percent effluent in an acute bioassay test. Lethality in 100 percent effluent may be allowed due to ammonia and chlorine only when it is demonstrated on a case-by-case basis that immediate dilution of the effluent within the mixing zone reduces toxicity below lethal concentrations. The Department may on a case-by-case basis establish a zone of immediate dilution if appropriate for other parameters;

(B) Materials that will settle to form objectionable deposits;

(C) Floating debris, oil, scum, or other materials that cause nuisance conditions; and

(D) Substances in concentrations that produce deleterious amounts of fungal or bacterial growths.

(b) **A point source for which the mixing zone is established may not cause or significantly contribute to any of the following conditions** outside the boundary of the mixing zone:

(A) Materials in concentrations that will cause chronic (sublethal) toxicity. Chronic toxicity is measured as the concentration that causes long-term sublethal effects, such as significantly impaired growth or reproduction in aquatic organisms, during a testing period based on test species life cycle. Procedures and end points will be specified by the Department in wastewater discharge permits;

(B) **Exceedances of any** other water quality standards under normal annual low flow conditions.

(c) The limits of the mixing zone must be described in the wastewater discharge permit. In determining the location, surface area, and volume of a mixing zone area, the Department may use appropriate mixing zone guidelines to assess the biological, physical, and chemical character of receiving waters, effluent, and the most appropriate placement of the outfall, to protect instream water quality, public health, and other

beneficial uses. Based on receiving water and effluent characteristics, the Department will define a mixing zone in the immediate area of a wastewater discharge to:

(A) Be as small as feasible;

(B) Avoid overlap with any other mixing zones to the extent possible and be less than the total stream width as necessary to allow passage of fish and other aquatic organisms;

(C) Minimize adverse effects on the indigenous biological community, especially when species are present that warrant special protection for their economic importance, tribal significance, ecological uniqueness, or other similar reasons determined by the Department and does not block the free passage of aquatic life;

(D) Not threaten public health;

(E) Minimize adverse effects on other designated beneficial uses outside the mixing zone.

(d) Temperature Thermal Plume Limitations. Temperature mixing zones and effluent limits authorized under 340-041-0028(12)(b) will be established to prevent or minimize the following adverse effects to salmonids inside the mixing zone:

(A) Impairment of an active salmonid spawning area where spawning redds are located or likely to be located. This adverse effect is prevented or minimized by limiting potential fish exposure to temperatures of 13 degrees Celsius (55.4 Fahrenheit) or less for salmon and steelhead, and 9 degrees Celsius (48 degrees Fahrenheit) for bull trout;

(B) Acute impairment or instantaneous lethality is prevented or minimized by limiting potential fish exposure to temperatures of 32.0 degrees Celsius (89.6 degrees Fahrenheit) or more to less than 2 seconds);

(C) Thermal shock caused by a sudden increase in water temperature is prevented or minimized by limiting potential fish exposure to temperatures of 25.0 degrees Celsius (77.0 degrees Fahrenheit) or more to less than 5 percent of the cross section of 100 percent of the 7Q10 low flow of the water body; The Department may develop additional exposure timing restrictions to prevent thermal shock; and

(D) Unless the ambient temperature is 21.0 degrees of greater, migration blockage is prevented or minimized by limiting potential fish exposure to temperatures of 21.0 degrees Celsius (69.8 degrees Fahrenheit) or more to less than 25 percent of the cross section of 100 percent of the 7Q10 low flow of the water body.

(e) The Department may request the applicant of a permitted discharge for which a mixing zone is required, to submit all information necessary to define a mixing zone, such as:

(A) Type of operation to be conducted;

(B) Characteristics of effluent flow rates and composition;

(C) Characteristics of low flows of receiving waters;

(D) Description of potential environmental effects;

(E) Proposed design for outfall structures.

(f) The Department may, as necessary, require mixing zone monitoring studies and/or bioassays to be conducted to evaluate water quality or biological status within and outside the mixing zone boundary;

(g) The Department may change mixing zone limits or require the relocation of an outfall, if it determines that the water quality within the mixing zone adversely affects any existing beneficial uses in the receiving waters.

(h) Alternate requirements for mixing zones: For some existing or proposed discharges to some receiving streams, it may not be practical to treat wastewater to meet instream water quality standards at the point of discharge or within a short distance from the point of discharge. Some of these discharges could be allowed without impairing the overall ecological integrity of the receiving streams, or may provide an overall benefit to the receiving stream. This section specifies the conditions and circumstances under which a mixing zone may be allowed by the Department that extends beyond the immediate area around a discharge point, or that extends across a stream width. An alternate mixing zone may be approved if the applicant demonstrates to the Department's satisfaction that the discharge (A) creates an overall environmental benefit, or (B) is to a constructed water course, or (C) is insignificant. The three circumstances under which alternate mixing zones may be established are described further below.

(A) Overall environmental benefit.

(i) Qualifying for alternate mixing zone based on overall environmental benefit: In order to qualify for an alternate mixing zone based on a finding of overall environmental benefit, the discharger must demonstrate to the Department's satisfaction the following:

(I) All practical strategies have been, or will be, implemented to minimize the pollutant loads in the effluent; and

(II) For proposed increased discharges, the current actual discharge and mixing zone does not meet the requirements of a standard mixing zone; and

(III) Either that, on balance, an environmental benefit would be lost if the discharge did not occur, or that the discharger is prepared to undertake other actions that will mitigate

the effect of the discharge to an extent resulting in a net environmental benefit to the receiving stream.

(IV) For the purposes of this rule, the term "practical" must include environmental impact, availability of alternatives, cost of alternatives and other relevant factors.

(ii) Studies required and evaluation of studies: In order to demonstrate that, on balance, an environmental benefit will result from the discharge, the following information must be provided by the applicant:

(I) The effluent flow and pollutant loads that are detected or expected in the effluent, by month, both average and expected worst case discharges: The parameters to be evaluated include at a minimum: temperature, biochemical oxygen demand, total suspended solids, total dissolved solids, pH, settleable solids, *E. coli* bacteria, oil and grease, any pollutants listed in Table 20 of this rule division, and any pollutant for which the receiving stream has been designated by the Department as water quality limited; and

(II) Receiving stream flow, by month; and

(III) The expected impact of the discharge, by month, on the receiving stream for the entire proposed mixing zone area for all of the pollutants listed above. Included in this analysis must be a comparison of the receiving stream water quality with the discharge and without the discharge; and

(IV) A description of fish, other vertebrate populations, and macroinvertebrates that reside in, or are likely to pass through, the proposed mixing zone, including expected location (if known), species identification, stage of development, and time of year when their presence is expected. For existing discharges, the applicant must provide the same information for similar nearby streams that are unaffected by wastewater discharges. In addition, any threatened or endangered species in the immediate vicinity of the receiving stream must be identified; and

(V) The expected impact of the discharge on aquatic organisms and/or fish passage, including any expected negative impacts from the effluent attracting fish, where that is not desirable; and

(VI) A description of the expected environmental benefits to be derived from the discharge or other mitigation measures proposed by the applicant, including but not limited to improvements in water quality, improvements in fish passage, and improvements in aquatic habitat. If the applicant proposes to undertake mitigation measures designed to provide environmental benefits (e.g., purchasing water or water conservation rights to increase stream flows or establishing stream cover to decrease temperature), the applicant must describe the mitigation measures in detail, including a description of the steps it will take to ensure that the benefits of the mitigation measures are attained and are not lost or diminished over time.

(VII) Some or all of the above study requirements may be waived by the Department, if the Department determines that the information is not needed. In the event that the Department does waive some or all of the above study requirements, the basis for waiving the requirements will be included in the permit evaluation report upon the next permit renewal or modification relating to the mixing zone.

(VIII) Upon request of the Department, the applicant must conduct additional studies to further evaluate the impact of the discharge, which may include whole effluent toxicity testing, stream surveys for water quality, stream surveys for fish and other aquatic organisms, or other studies as specified by the Department.

(IX) In evaluating whether an existing or proposed increase in an existing discharge would result in a net environmental benefit, the applicant must use the native biological community in a nearby, similar stream that is unaffected by wastewater discharges. The Department will consider all information generated as required in this rule and other relevant information. The evaluation will only consider benefits to the native aquatic biological community.

(iii) Permit conditions: Upon determination by the Department that the discharge and mitigation measures (if any) will likely result in an overall environmental benefit, the Department will include appropriate permit conditions to ensure that the environmental benefits are attained and continue. Such permit conditions may include, but not be limited to:

(I) Maximum allowed effluent flows and pollutant loads;

(II) Requirements to maintain land ownership, easements, contracts, or other legally binding measures necessary to assure that mitigation measures, if any, remain in place and effective;

(III) Special operating conditions;

(IV) Monitoring and reporting requirements; and

(V) Studies to evaluate the effectiveness of mitigation measures.

(B) Constructed water course: A mixing zone may be extended through a constructed water course and into a natural water course. For the purposes of this rule, a constructed water course is one that was constructed for irrigation, site drainage, or wastewater conveyance, and has the following characteristics:

(i) Irrigation flows, stormwater runoff, or wastewater flows have replaced natural streamflow regimes;

(ii) The channel form is greatly simplified in lengthwise and cross sectional profiles;

(iii) Physical and biological characteristics that differ significantly from nearby natural streams;

(iv) A much lower diversity of aquatic species than the diversity found in nearby natural streams; and

(v) Effective fish screens if the constructed water course is an irrigation canal.

(C) Insignificant discharges: Insignificant discharges are those that either by volume, pollutant characteristics, and/or temporary nature are expected to have little if any impact on beneficial uses in the receiving stream, and for which the extensive evaluations required for discharges to smaller streams are not warranted. For the purposes of this rule, only filter backwash discharges and underground storage tank cleanups are considered insignificant discharges.

(D) Other requirements for alternate mixing zones: The following are additional requirements for dischargers requesting an alternate mixing zone:

(i) Most discharges that qualify for an alternate mixing zone will extend through the receiving stream until a larger stream is reached, where thorough mixing of the effluent can occur and where the edge of the allowed mixing zone will be located. The portion of the mixing zone in the larger stream must meet all of the requirements of the standard mixing zone, including not blocking aquatic life passage; and

(ii) An alternate mixing zone may not be granted if a municipal drinking water intake is located within the proposed mixing zone, and the discharge has a significant adverse impact on the drinking water source; and

(iii) The discharge will not pose an unreasonable hazard to the environment or pose a significant health risk, considering the likely pathways of exposure; and

(iv) The discharge may not be acutely toxic to organisms passing through the mixing zone; and

(v) An alternate mixing zone may not be granted if the substances discharged may accumulate in the sediments or bioaccumulate in aquatic life or wildlife to levels that adversely affect public health, safety or welfare, aquatic life, wildlife, or other designated beneficial uses; and

(vi) In the event that the receiving stream is water quality limited, the requirements for discharges to water quality limited streams supersede this rule.

340-041-0057

Implementation at Domestic Wastewater Treatment Works

(1) Oregon's publicly owned sewerage utilities have since 1956 developed an increasing reliance on federal sewerage works construction grant funds to meet a major portion of the cost of their sewerage works construction needs. This reliance did not appear unreasonable based on federal legislation passed up through 1978. Indeed, the Environmental Quality Commission (Commission) has routinely approved compliance schedules with deadlines contingent on federal funding. This reliance no longer appears reasonable based on recent and proposed legislative actions and appropriations and the general state of the nation's economy.

(2) The federal funds expected for future years will address a small percentage of Oregon's sewerage works construction needs. Thus, continued reliance by DEQ and public agencies on federal funding for sewerage works construction will not assure that sewage from a growing Oregon population will be adequately treated and disposed of so that health hazards and nuisance conditions are prevented, and beneficial uses of public waters are not threatened or impaired by quality degradation.

(3) Therefore, the following statements of policy are established to guide future sewerage works planning and construction:

(a) The Commission remains strongly committed to its historic program of preventing water quality problems by requiring control facilities to be provided prior to the connection of new or increased waste loads;

(b) The Commission urges each sewerage utility in Oregon to develop, as soon as practicable, a financing plan that will ensure that future sewerage works construction, operation, maintenance and replacement needs can be met in a timely manner. Such financing plans will be a prerequisite to Department issuance of permits for new or significantly modified sewerage facilities, for approval of plans for new or significantly modified sewerage facilities, or for access to funding assistance from the State pollution control bond fund. The Department may accept assurance of development of such financing plan if necessary to prevent delay in projects already planned and in the process of implementation. The Department will work with the League of Oregon Cities and others as necessary to aid in the development of financing plans;

(c) No sewerage utility should assume that it will receive grant assistance to aid in addressing its planning and construction needs;

(d) Existing sewerage facility plans that are awaiting design and construction should be updated where necessary to include:

(A) Evaluation of additional alternatives where appropriate, and re-evaluation of costs of existing alternatives;

(B) Identification and delineation of phased construction alternatives; and

(C) A financing plan which will assure ability to construct facilities over an appropriate time span with locally derived funds.

(e) New sewerage works facility planning initiated after October 1, 1981 should not be approved without adequate consideration of alternatives and phased construction options, and without a financing plan which assures adequate funding for construction, operation, maintenance and replacement of sewerage facilities:

(A) The Commission recognizes that many cities in need of immediate sewerage works construction have completed planning and are awaiting design or construction funding. These cities have developed their program relying on 75 percent federal grants. They will have difficulty developing and implementing alternatives to fund immediate construction needs. Many are, or will be, under moratoriums on new connections because existing facilities are at, or near, capacity. The Commission will consider the following interim measures as a means of assisting these cities to get on a self-supporting basis provided that an approvable long-range program is presented:

(i) Temporary increases in waste discharge loading may be approved provided a minimum of secondary treatment, or equivalent control is maintained and beneficial uses of the receiving waterway are not impaired;

(ii) Installation and operation of temporary treatment works may be approved providing:

(I) The area served is inside an approved urban growth boundary and the proposal is consistent with State Land Use Planning laws;

(II) A master sewerage plan is adopted which shows how and when the temporary facilities will be phased out;

(III) The public agency responsible for implementing the master plan is the owner and operator of the temporary facilities;

(IV) Sewerage service to the area served by the temporary facility is necessary as part of the financing program for master plan implementation and no other option for service is practicably available;

(V) An acceptable receiving stream or method of effluent disposal is available for the temporary facility.

(B) Compliance schedules and other permit requirements may be modified to incorporate an approved interim program. Compliance with a permit so modified will be required at all times.

(f) Sewerage Construction programs should be designed to eliminate raw sewage bypassing during the summer recreation season (except for a storm event greater than the ten-year, 24-hour storm) as soon as practicable. A program and timetable should be

developed through negotiation with each affected source. Bypasses which occur during the remainder of the year should be eliminated in accordance with an approved longer term maintenance based correction program. More stringent schedules may be imposed as necessary to protect drinking water supplies and shellfish growing areas;

(g) Any sewerage utility that is presently in compliance and foresees a need to plan for future expansion to accommodate growth, but elects to wait for federal funds for planning and construction, will make such election with full knowledge that if existing facilities reach capacity before new facilities are completed, a new-connection moratorium will be imposed. Such moratorium will not qualify them for any special consideration, since its presence is deemed a matter of their choice;

(h) The Department will continue to assist cities to develop interim and long-range programs, use construction schedules and to secure financing for essential construction.

Stat. Auth.: ORS 183
Stats. Implemented: ORS 468.035 & ORS 468B.035
Hist.: DEQ 29-1981, f. & ef. 10-19-81

340-041-0061

Other Implementation of Water Quality Criteria

(1) No waste treatment and disposal facilities may be constructed or operated, and no wastes may be discharged to public waters, without obtaining a permit from the Department as required by ORS 468B.050.

(2) Water Quality Variances. The Commission may grant point source variances from the water quality standards in this Division where the following requirements are met:

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

(b) A water quality standard variance shall not be granted if:

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

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

(c) Prior to granting a variance, the point source must demonstrate that attaining the water quality standard is not feasible because:

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

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

(C) Human-caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place; or

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

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

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

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

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

(B) A variance may not exceed 3 years or the term of the NPDES permit, whichever is less. A variance may be renewed if the applicant reapplies and demonstrates that the use in question is still not attainable. Renewal of the variance may be denied if

the applicant does not comply with the conditions of the original variance, or otherwise does not meet the requirements of this section.

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

(3) Plans for all sewage and industrial waste treatment, control, and disposal facilities must be submitted to the Department for review and approval prior to construction as required by ORS 468B.055.

(4) Minimum design criteria for waste treatment and control facilities prescribed under this plan and such other waste treatment, and controls as may be necessary to ensure compliance with the water quality standards contained in this plan, must be provided in accordance with specific permit conditions for those sources or activities for which permits are required and the following implementation program:

(a) For new or expanded waste loads or activities, fully approved treatment or control facilities, or both, must be provided prior to discharge of any wastes from the new or expanded facilities or conduct of the new or expanded activity;

(b) For existing waste loads or activities, additional treatment or control facilities necessary to correct specific unacceptable water quality conditions must be provided in accordance with a specific program and timetable incorporated into the waste discharge permit for the individual discharger or activity. In developing treatment requirements and implementation schedules for existing installations or activities, consideration will be given to the impact upon the overall environmental quality, including air, water, land use, and aesthetics;

(c) Wherever minimum design criteria for waste treatment and control facilities set forth in this plan are more stringent than applicable federal standards and treatment levels currently being provided, upgrading to the more stringent requirements will be deferred until it is necessary to expand or otherwise modify or replace the existing treatment facilities. Such deferral will be acknowledged in the permit for the source;

(d) Where planning, design or construction of new or modified waste treatment and controls to meet prior applicable State or federal requirements are underway at the time this plan is adopted, such plans, design, or construction may be completed under the requirements in effect when the project was initiated. Timing for upgrading to meet more stringent future requirements will be as provided in section (3) of this rule.

(5) Confined animal feeding operations (CAFOs) are regulated pursuant to OAR 340-051-0005 through 340-051-0080 in order to minimize potential adverse effect on water quality **(see also OAR 603-074-0005 through 603-074-0070).**

(6) Programs for control of pollution from nonpoint sources when developed by the Department, or by other agencies pursuant to section 208 of Public Law 92-500 and

approved by the Department, will as applicable, be incorporated into this plan by amendment via the same process used to adopt the plan unless other procedures are established by law.

(7) Where minimum requirements of federal law or enforceable regulations are more stringent than specific provisions of this plan, the federal requirements will prevail.

(8) Within framework of State-wide priority and available resources, the Department will monitor water quality within the basin for the purposes of evaluating conformance with the plan and developing information for future additions or updating.

(9) The Commission recognizes that the potential exists for conflicts between water quality management plans and the land use plans and resource management plans which local governments and other agencies must develop pursuant to law. In the event any such conflicts develop, it is the intent of the Department to meet with the local government or responsible agency to formulate proposed revisions to one or both so as to resolve the conflict. Revisions will be presented for adoption via the same process used to adopt the plan unless other specific procedures are established by law.

(10) The Department will calculate and include effluent limits specified in pounds per day, which will be the mass load limits for biochemical oxygen demand or carbonaceous biochemical oxygen demand and total suspended solids in National Pollutant Discharge Elimination System permits issued to all sewage treatment facilities. These limits must be calculated as follows:

(a) Except as noted in paragraph (H) of this subsection, for existing facilities and for facilities receiving engineering plans and specifications approval from the Department for new treatment facilities or treatment facilities expanding the average dry weather treatment capacity, prior to June 30, 1992:

(A) During periods of low stream flows (approximately May 1 through October 31), the monthly average mass load expressed as pounds per day may not exceed the applicable monthly concentration effluent limit times the design average dry weather flow expressed in million gallons per day times 8.34. The weekly average mass load expressed as pounds per day may not exceed the monthly average mass load times 1.5. The daily mass load expressed in pounds per day may not exceed the monthly average mass load times 2.0;

(B) During the period of high stream flows (approximately November 1 through April 30), the monthly average mass load expressed as pounds per day may not exceed the monthly concentration effluent limit times the design average wet weather flow expressed in million gallons per day times 8.34. The weekly average mass load expressed as pounds per day may not exceed the monthly average mass load times 1.5. The daily mass load expressed in pounds per day may not exceed the monthly average mass load times 2.0;

(C) On any day that the daily flow to a sewage treatment facility exceeds the lesser hydraulic capacity of the secondary treatment portion of the facility or twice the design average dry weather flow, the daily mass load limit will not apply. The permittee must operate the treatment facility at highest and best practicable treatment and control;

(D) The design average wet weather flow used in calculating mass loads must be approved by the Department in accordance with prudent engineering practice and must be based on a facility plan approved by the Department, engineering plans and specifications approved by the Department, or an engineering evaluation. The permittee must submit documentation describing and supporting the design average wet weather flow with the permit application, application for permit renewal, or modification request, or upon request by the Department. The design average wet weather flow is defined as the average flow between November 1 and April 30 when the sewage treatment facility is projected to be at design capacity for that portion of the year;

(E) Mass loads assigned as described in paragraphs (B) and (C) of this subsection will not be subject to OAR 340-041-0004(7);

(F) Mass loads as described in this rule will be included in permits upon renewal, or upon permit modification request;

(G) Within 180 days after permit renewal or modification, permittees receiving higher mass loads under this rule and having a separate sanitary sewer system must submit to the Department for review and approval a proposed program and time schedule for identifying and reducing inflow. The program must consist of the following:

(i) Identification of all overflow points and verification that sewer system overflows are not occurring up to a 24-hour, five-year storm event or equivalent;

(ii) Monitoring of all pump station overflow points; and

(iii) A program for identifying and removing all inflow sources into the permit holder's sewer system over which the permit holder has legal control; and

(iv) For those permit holders not having the necessary legal authority for all portions of the sewer system discharging into the permit holder's sewer system or treatment facility, a program and schedule for gaining legal authority to require inflow reduction and a program and schedule for removing inflow sources.

(H) Within one year after the Department's approval of the program, the permit holder must begin implementation of the program.

(I) Paragraphs (A) through (G) of this subsection does not apply to the cities of Athena, Elgin, Adair Village, Halsey, Harrisburg, Independence, Carlton and Sweet Home. Mass load limits have been individually assigned to these facilities.

(b) For new sewage treatment facilities or treatment facilities expanding the average dry weather treatment capacity, and receiving engineering plans and specifications approval from the Department after June 30, 1992, the mass load limits must be calculated by the Department based on the proposed treatment facility capabilities and the highest and best practicable treatment to minimize the discharge of pollutants;

(c) Mass load limits as defined in this rule may be replaced by more stringent limits if required by waste load allocations established in accordance with a TMDL for treatment facilities discharging to water quality limited streams, or if required to prevent or eliminate violations of water quality standards;

(d) In the event that the design average wet weather flow or the hydraulic secondary treatment capacity is not known or has not been approved by the Department at the time of permit issuance, the permit must include as interim mass load limits the mass load limits in the previous permit issued to the permit holder for the treatment facility. The permit must also include a requirement that the permit holder must submit to the Department the design average wet weather flow and hydraulic secondary treatment capacity within 12 months after permit issuance. Upon review and approval of the design flow information, the Department will modify the permit and include mass load limits as described in subsection (a) of this section;

(e) Each permit holder with existing sewage treatment facilities otherwise subject to subsection (a) of this section may choose mass load limits calculated as follows:

(A) The monthly average mass load expressed as pounds per day may not exceed the applicable monthly concentration effluent limit times the design average dry weather flow expressed in million gallons per day times 8.34 pounds per gallon;

(B) The weekly average mass load expressed as pounds per day may not exceed the monthly average mass load times 1.5;

(C) The daily mass load expressed in pounds per day may not exceed the monthly average mass load times 2.0. In the event that existing mass load limits are retained by the permit holder, the terms and requirements of subsection (a) of this section will not apply.

(f) The Commission may grant exceptions to subsection (a) of this section. In allowing increased discharged loads, the Commission must make the findings specified in OAR 340-041-0004(9)(a) for waste loads, and in addition must make the following findings:

(A) That mass loads as calculated in subsection (a) of this section cannot be achieved with the existing treatment facilities operated at maximum efficiency at projected design flows; and

(B) That there are no practicable alternatives to achieving the mass loads as calculated in subsection (a) of this section.

(11) Forestry on State and Private Lands. For forest operations on State or private lands, water quality standards are intended to be attained and are implemented through best management practices and other control mechanisms established under the Forest Practices Act (ORS 527.610 to 527.992) and rules thereunder, administered by the Oregon Department of Forestry. Therefore, forest operations that are in compliance with the Forest Practices Act requirements are (except for the limits set out in ORS 527.770) deemed in compliance with this Division. DEQ will work with the Oregon Department of Forestry to revise the Forest Practices program to attain water quality standards.

(12) Agricultural water quality management plans to reduce agricultural nonpoint source pollution are developed and implemented by the Oregon Department of Agriculture (ODA) through a cooperative agreement with the Department to implement applicable provisions of ORS 568.900 to 568.933 and ORS 561.191. If the Department has reason to believe that agricultural discharges or activities are contributing to water quality problems resulting in water quality standards violations, the Department may consult with the ODA. If water quality impacts are likely from agricultural sources, and the Department determines that a water quality management plan is necessary, the Director may write a letter to the Director of the ODA requesting that such a management plan be prepared and implemented to reduce pollutant loads and achieve the water quality criteria.

(13) Agriculture and Forestry on Federal Lands. Agriculture and forestry activities conducted on federal land must meet the requirements of this Division and are subject to the department's jurisdiction. Pursuant to Memoranda of Agreement with the U.S. Forest Service and the Bureau of Land Management, water quality standards are expected to be met through the development and implementation of water quality restoration plans, best management practices and aquatic conservation strategies. Where a Federal Agency is a Designated Management Agency by the Department, implementation of these plans, practices and strategies is deemed compliance with this Division.

(14) Testing methods: The analytical testing methods for determining compliance with the water quality standards contained in this rule must be in accordance with 40 CFR Part 136, or if Part 136 does not prescribe a method, then the most recent edition of *Standard Methods for the Examination of Water and Waste Water* published jointly by the American Public Health Association, American Water Works Association, and Water Pollution Control Federation, unless the Department has published an applicable superseding method, in which case testing must be in accordance with the superseding method; provided, however, that testing in accordance with an alternative method must comply with this rule if the Department has published the method or has approved the method in writing.

Stat. Auth.: ORS 468B.030 & ORS 468B.048
Stats. Implemented: ORS 468B.048

Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 16-1992, f. & cert. ef. 8-7-92; DEQ 5-1996, f. & cert. ef. 3-7-96; DEQ 11-1997, f. & cert. ef. 6-11-97

Basin-Specific Criteria
(Main Stem Columbia River)

340-041-0101

Beneficial Uses to Be Protected in the Main Stem Columbia River

(1) Water quality in the main stem Columbia River (see Figure 1) must be managed to protect the designated beneficial uses shown in Table 101A (November 2003).

(2) Designated fish uses to be protected in the main stem Columbia River are shown in Table 101B (November 2003).

340-041-0103

Approved TMDLs in the Basin:

[The following TMDLs have been approved by EPA, and appear on the Department's web site:]

Columbia River – Dioxin – February 25, 1991

Columbia River - Dissolved Gas – November 11, 2002

340-041-0104

Water Quality Standards and Policies Specific to the Main Stem Columbia River

(1) pH (hydrogen ion concentration). pH values may not fall outside the following range: main stem Columbia River (mouth to river mile 309): 7.0 – 8.5.

(2) Total Dissolved Solids. Guide concentrations listed below must not be exceeded unless otherwise specifically authorized by DEQ upon such conditions as it may deem necessary to carry out the general intent of this plan and to protect the beneficial uses set forth in OAR 340-041-0101:

(a) Main stem Columbia River (river miles 120 to 147 and 210-309) — 200.0 mg/l;

(b) All other river miles of main stem Columbia River — 500.0 mg/l.

(3) Total Dissolved Gas. The Commission may modify the total dissolved gas criteria in the Columbia River for the purpose of allowing increased spill for salmonid migration. The Commission must find that:

(a) Failure to act would result in greater harm to salmonid stock survival through in-river migration than would occur by increased spill;

(b) The modified total dissolved gas criteria associated with the increased spill provides a reasonable balance of the risk of impairment due to elevated total dissolved gas to both resident biological communities and other migrating fish and to migrating adult and juvenile salmonids when compared to other options for in-river migration of salmon;

(c) Adequate data will exist to determine compliance with the standards; and

(d) Biological monitoring is occurring to document that the migratory salmonid and resident biological communities are being protected.

(e) The Commission will give public notice and notify all known interested parties and will make provision for opportunity to be heard and comment on the evidence presented by others, except that the Director may modify the total dissolved gas criteria for emergencies for a period not exceeding 48 hours;

(f) The Commission may, at its discretion, consider alternative modes of migration.

(4) Minimum Design Criteria for Treatment and Control of Sewage Wastes:

(a) During periods of low stream flows (see subsections (A) and (B) below): Treatment resulting in monthly average effluent concentrations not to exceed 20 mg/l of BOD and 20 mg/l of SS or equivalent control. Periods of low stream flow vary throughout the main stem Columbia River. Low stream flow periods are listed below, by river mile:

(A) River miles 120 to 147: Approximately July 1 to January 31;

(B) River miles 147 to 218: Approximately May 1 to October 31.

(b) During periods of high stream flows (see subsections (A) and (B) below): A minimum of secondary treatment or equivalent control and unless otherwise specifically authorized by the Department, operation of all waste treatment and control facilities at maximum practicable efficiency and effectiveness so as to minimize waste discharges to public waters.

(A) River miles 120 to 147: Approximately February 1 to June 30;

(B) River miles 147 to 218: Approximately November 1 to April 30.

Basin-Specific Criteria
(Main Stem Snake River)

340-041-0121

Beneficial Uses to Be Protected in the Main Stem Snake River

(1) Water quality in the main stem Snake River (see Figure 1) must be managed to protect the designated beneficial uses shown in Table 121A (November 2003).

(2) Designated fish uses to be protected in the main stem Snake River are shown in Table 121B (November 2003).

340-041-0122

Approved TMDLs in the Basin:

[The following TMDLs have been approved by EPA, and appear on the Department's web site:]

None

340-041-0124

Water Quality Standards and Policies Specific to the Main Stem Snake River

(1) pH (hydrogen ion concentration). pH values may not fall outside the following range: main stem Snake River (river miles 260 to 335): 7.0 – 9.0.

(2) Total Dissolved Solids. Guide concentrations listed below may not be exceeded unless otherwise specifically authorized by DEQ upon such conditions as it may deem necessary to carry out the general intent of this plan and to protect the beneficial uses set forth in OAR 340-041-0120: main stem Snake River — 750.0 mg/l.

Basin-Specific Criteria
(Deschutes)

340-041-0130

Beneficial Uses to Be Protected in the Deschutes Basin

(1) Water quality in the Deschutes Basin (see Figure 1) must be managed to protect the designated beneficial uses shown in Table 130A (November 2003).

(2) Designated fish uses to be protected in the Deschutes Basin are shown in Figures 130A and 130B (November 2003).

340-041-0133

Approved TMDLs in the Basin:

[The following TMDLs have been approved by EPA, and appear on the Department's web site:]

None

340-041-0135

Water Quality Standards and Policies for this Basin

(1) pH (hydrogen ion concentration). pH values may not fall outside the following ranges:

(a) All other Basin streams (except Cascade lakes): 6.5–8.5;

(b) Cascade lakes above 3,000 feet altitude: pH values may not fall outside the range of 6.0 to 8.5.

(2) Total Dissolved Solids. Guide concentrations listed below may not be exceeded unless otherwise specifically authorized by DEQ upon such conditions as it may deem necessary to carry out the general intent of this plan and to protect the beneficial uses set forth in OAR 340-041-0562: 500.0 mg/l.

(3) La Pine Aquifer. In order to protect the shallow aquifer located in the vicinity of the community of La Pine in Deschutes County for present and future use as a drinking water source, it is the policy of the Environmental Quality Commission to support the implementation of the La Pine Aquifer Management Plan adopted by the Deschutes County Board of Commissioners on September 28, 1982, by requiring the following:

(b) The waste water generated outside the core area of the community of La Pine but within the study area described in the La Pine Aquifer Management Plan, will be subjected to regulation under the Department's on-site waste disposal rules (OAR Chapter 340, Division 71);

(A) The core area of the community of La Pine is that area defined as follows: Located in a portion of Sections 10, 11, 14, and 15, Township 22 South, Range 10 East, Willamette

Meridian, Deschutes County, Oregon, more particularly described as follows: Beginning at the northwest corner of the intersection of U.S. Highway 97 and First Street (aka Reed Road); thence in a northeasterly direction along the westerly right-of-way line of said U.S. Highway 97 a distance of 1,480 feet, more or less, to the intersection of said U.S. Highway 97 and the northerly line of the south one-half of the southwest one-quarter of said Section 11; thence in a westerly direction along the northerly line of the south one-half of the southwest one-quarter of said Section 11 a distance of 1,950 feet, more or less, to the south one-sixteenth corner between said Sections 10 and 11; thence in a northerly direction along the section line between Sections 10 and 11, 990 feet, more or less, to the northeast corner of the south one-half of the north one-half of the northeast one-quarter of the southeast one-quarter of said Section 10 being the northeast corner of the Bend-La Pine School District property; thence in a westerly direction along the north line of the said south one-half of the north one-half of the northeast one-quarter of the southeast one-quarter, being the north line of the said Bend-La Pine School District property, 1,320 feet, more or less, to the northwest corner of the south one-half of the north one-half of the southeast one-quarter of the southeast one-quarter of said Section 10, said point further being the northwest corner of the Bend-La Pine School District property; thence in a southerly direction along the westerly line of the east one-half of the southeast one-quarter of said Section 10, 2, 310 feet, more or less, to a point at the intersection of the westerly line of the southeast one-quarter of the southeast one-quarter of said Section 10 and the northerly right-of-way line of said First Street, said point further being the southwest corner of the Bend-La Pine School District property; thence in an easterly direction along the northerly right-of-way line of said First Street, 350 feet, more or less, to a point on the northerly right-of-way line of said First Street due north of the northwest corner of the alley in Block 16 of the Plat of La Pine Subdivision; thence in a southerly direction along the westerly side of said alley 550 feet, more or less, to a point along the southerly right-of-way of 2nd Street due south of the southwest corner of the alley in Block 16 of the Plat of La Pine Subdivision; thence in an easterly direction along the southerly right-of-way of 2nd Street, 390 feet, more or less, to the southwest corner of the intersection of Stillwell Street and 2nd Street; thence in a southerly direction along the westerly right-of-way line of said Stillwell Street, 950 feet, more or less, to the northwest corner of the intersection of said Stillwell Street and 4th Street; thence in a southerly direction along the west right-of-way line of Stillwell Street approximately 1,186 feet to the northwest corner of the intersection of Stillwell Street and Hill Street; thence in a southwesterly direction along the west right-of-way line of Hill Street approximately 340 feet to the intersection of the west line of Hill Street with the north line of 8th Street; thence westerly along the north line of 8th Street, 41 feet, more or less to the northeast corner of the intersection of 8th Street and Stearns Street; thence in a southerly direction along the east right-of-way line of Stearns Street approximately 387 feet to the northeast corner of the intersection of Stearns Street and 9th Street; thence in an easterly direction along the north right-of-way line of 9th Street and the easterly extension of the north line of said 9th Street, 1,093 feet to its intersection with the east right-of-way line of Pengra Huntington Road; thence in a northerly direction along the east right-of-way line of Pengra Huntington Road approximately 1,166 feet to the southwest corner of Lot 31, Government Homesite Tracts; thence in an easterly direction along the south boundary of said Lot 31 approximately 263 feet to the southeast corner of said Lot 31; thence in a

northerly direction along the east boundary of said Lot 31 approximately 200 feet to the south right-of-way line of Finley Butte Road; thence in an easterly direction along the south right-of-way line of Finley Butte Road approximately 675 feet to the southeast corner of the intersection of Finley Butte Road and Bonnie Road; thence in a northerly direction along the east right-of-way line of Bonnie Road approximately 1,075 feet to the southeast corner of the intersection of Bonnie Road and William Foss Road; thence in an easterly direction along the southerly right-of-way line of said William Foss Road, 1,640 feet, more or less, to the north-south center section line of said Section 14 thence in a northerly direction along the north-south center line of said Section 14, 1,635 feet, more or less, to the north right-of-way line of said First Street (aka Reed Road); thence in a westerly direction along the north right-of-way line of said First Street, 1,432 feet, more or less, to the point of beginning;

(B) All dwellings and buildings that contain plumbing fixtures inside this core area boundary must eliminate the discharge of inadequately treated sewage, abandon existing on-site sewage disposal systems and connect to the regional sewerage facility. This must be done within 90 days following notification by the approved regional sewerage agency that sewer service is available.

(c) Waste disposal systems for new developments within the La Pine Aquifer Management Plan Boundary where development density exceeds two single family equivalent dwelling units per acre or which have an aggregate waste flow in excess of 5,000 gallons per day may only be approved if a study is conducted by the applicant which convinces the department that the aquifer will not be unreasonably degraded.

(4) In addition to the requirements set forth in section (3) of this rule, the following actions are encouraged:

(a) Since the aquifer is presently degraded to the point where it does not meet Federal Drinking Water Standards, and the installation of sewer facilities will not immediately restore the quality to safe levels, Deschutes County should notify the citizens of the La Pine core area of the need to develop a safe drinking water supply for the community as soon as possible;

(b) Residents of the La Pine area are encouraged to test their drinking water frequently;

(c) Owners of underground liquid storage tanks are encouraged to periodically test the storage tanks to assure prompt detection and repair of leaks;

(d) Data on the quality of the shallow aquifer in and around La Pine should be obtained on a periodic basis to assess the effect of the above waste water management decisions on the quality of the groundwater.

(5) Minimum Design Criteria for Treatment and Control of Sewage Wastes:

(a) Metolius River Subbasin and Deschutes River Basin above Bend Diversion Dam (river mile 165): Treatment resulting in monthly average effluent concentrations not to exceed 5 mg/l of BOD and 5 mg/l of SS or equivalent control;

(b) Deschutes River from the Bend Diversion Dam (river mile 165) downstream to the Pelton Reregulating Dam (river mile 100) and for the Crooked River Subbasin:

(A) During periods of low stream flows (approximately April 1 to October 31): Treatment resulting in monthly average effluent concentrations not to exceed 10 mg/l of BOD and 10 mg/l of SS or equivalent control;

(B) During the period of high stream flows (approximately November 1 to March 31): A minimum of secondary treatment or equivalent and unless otherwise specifically authorized by the Department, operation of all waste treatment and control facilities at maximum practicable efficiency and effectiveness so as to minimize waste discharges to public waters.

(c) Deschutes from the Pelton Reregulating Dam (river mile 100) downstream to the mouth:

(A) During periods of low stream flows (approximately April 1 to October 31): Treatment resulting in monthly average effluent concentrations not to exceed 20 mg/l of BOD and 20 mg/l of SS or equivalent control;

(B) During the period of high stream flows (approximately November 1 to March 31): A minimum of secondary treatment or equivalent and unless otherwise specifically authorized by the Department, operation of all waste treatment and control facilities at maximum practicable efficiency and effectiveness so as to minimize waste discharges to public waters.

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Stat. Auth.: ORS 468.735, ORS 468B.035 & ORS 468B.048
Stats. Implemented: ORS 468B.048 & ORS 468B.030
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 1-1980, f. & ef. 1-9-80; DEQ 18-1987, f. & ef. 9-4-87; DEQ 14-1991, f. & cert. ef. 8-13-91; DEQ 17-1992, f. & cert. ef. 8-7-92 (and corrected 8-13-92); DEQ 6-1995, f. & cert. ef. 2-28-95; DEQ 21-1995(Temp), f. & cert. ef. 9-21-95; DEQ 5-1996, f. & cert. ef. 3-7-96; DEQ 22-1997, f. & cert. ef. 10-24-97; DEQ 9-1985, f. & ef. 8-6-85

Basin-Specific Criteria (Goose and Summer Lakes)

340-041-0140

Beneficial Uses to be Protected in Goose and Summer Lake Basins

(1) Water quality in the Goose and Summer Lake Basins (see Figure 1) must be managed to protect the designated beneficial uses shown in Table 140A (November 2003).

(2) Designated fish uses to be protected in the Goose and Summer Lake Basins are shown in Table 140B (November 2003).

340-041-0143

Approved TMDLs in the Basin:

[The following TMDLs have been approved by EPA, and appear on the Department's web site:]

None

340-041-0145

Water Quality Standards and Policies for this Basin

(1) pH (hydrogen ion concentration):

(a) Goose Lake: pH values may not fall outside the range of 7.5 to 9.5;

(b) All other basin waters. pH values may not fall outside the range of 7.0 to 9.0. When greater than 25 percent of ambient measurements taken between June and September are greater than pH 8.7, and as resources are available according to priorities set by the Department, the Department will determine whether the values higher than 8.7 are anthropogenic or natural in origin.

(2) Total Dissolved Solids. Guide concentrations listed below may not be exceeded unless otherwise specifically authorized by DEQ upon such conditions as it may deem necessary to carry out the general intent of this plan and to protect the beneficial uses set forth in OAR 340-041-0140: None.

(3) Minimum Design Criteria for Treatment and Control of Sewage Wastes: a minimum of secondary treatment or equivalent control and unless otherwise specifically authorized by the Department, operation of all waste treatment and control facilities at maximum practicable efficiency and effectiveness so as to minimize waste discharges to public waters.

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Stats. Implemented: ORS 468B.048 & ORS 468B.030
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 1-1980, f. & ef. 1-9-80; DEQ 18-1987, f. & ef. 9-4-87; DEQ 14-1991, f. & cert. ef. 8-13-91; DEQ 17-1992, f. & cert. ef. 8-7-92 (and corrected 8-13-92); DEQ 6-1995, f. & cert. ef. 2-28-95; DEQ 21-1995(Temp), f. & cert. ef. 9-21-95; DEQ 5-1996, f. & cert. ef. 3-7-96; DEQ 22-1997, f. & cert. ef. 10-24-97; DEQ 9-1985, f. & ef. 8-6-85

Basin-Specific Criteria (Grande Ronde)

340-041-0151

Beneficial Uses to Be Protected in the Grande Ronde Basin

(1) Water quality in the Grande Ronde Basin (see Figure 1) must be managed to protect the designated beneficial uses shown in Table 151A (November 2003).

(2) Designated fish uses to be protected in the Grande Ronde Basin are shown in Figures 151A and 151B (November 2003).

340-041-0154

Approved TMDLs in the Basin:

[The following TMDLs have been approved by EPA, and appear on the Department's web site:]

Upper Grande Ronde – Temperature, Sediment, Nitrogen and Phosphorous – May 3, 2000

340-041-0156
Water Quality Standards and Policies for this Basin

(1) pH (hydrogen ion concentration). pH values may not fall outside the following range: all basin streams (other than main stem Snake River): 6.5–9.0. When greater than 25 percent of ambient measurements taken between June and September are greater than pH 8.7, and as resources are available according to priorities set by the Department, the

Department will determine whether the values higher than 8.7 are anthropogenic or natural in origin.

(2) Total Dissolved Solids. Guide concentrations listed below may not be exceeded unless otherwise specifically authorized by DEQ upon such conditions as it may deem necessary to carry out the general intent of this plan and to protect the beneficial uses set forth in OAR 340-041-0150: main stem Grande Ronde River — 200.0 mg/l;

(3) Minimum Design Criteria for Treatment and Control of Sewage Wastes:

(a) During periods of low stream flows (approximately June 1 to October 31): Treatment resulting in monthly average effluent concentrations not to exceed 20 mg/l of BOD and 20 mg/l of suspended solids or equivalent control;

(b) During the period of high stream flows (approximately November 1 to May 31): A minimum of secondary treatment or equivalent control and unless otherwise specifically authorized by the Department, operation of all waste treatment and control facilities at maximum practicable efficiency and effectiveness so as to minimize waste discharges to public waters.

Basin-Specific Criteria (Hood)

340-041-0160

Beneficial Uses to Be Protected in the Hood Basin

(1) Water quality in the Hood Basin (see Figure 1) must be managed to protect the designated beneficial uses shown in Table 160A (November 2003).

(2) Designated fish uses to be protected in the Hood Basin are shown in Figures 160A and 160B (November 2003).

340-041-0164

Approved TMDLs in the Basin:

[The following TMDLs have been approved by EPA, and appear on the Department's web site:]

Western Hood – Temperature – January 30, 2002

340-041-0165

Water Quality Standards and Policies for this Basin

(1) pH (hydrogen ion concentration). pH values may not fall outside the following ranges:

(a) Hood River Basin streams (except main stem Columbia River and Cascade lakes): pH values may not fall outside the range of 6.5 to 8.5;

(b) Cascade lakes above 3,000 feet altitude: pH values may not fall outside the range of 6.0 to 8.5.

(2) Total Dissolved Solids. Guide concentrations listed below may not be exceeded unless otherwise specifically authorized by DEQ upon such conditions as it may deem necessary to carry out the general intent of this plan and to protect the beneficial uses set forth in OAR 340-041-0160: 500.0 mg/l.

(3) Minimum Design Criteria for Treatment and Control of Sewage Wastes in this Basin:

(a) During periods of low stream flows (approximately May 1 to October 31): Hood River Basin streams (except main stem Columbia River): Treatment resulting in monthly average effluent concentrations not to exceed 10 mg/l of BOD and 10 mg/l of suspended solids or equivalent control.

(b) During the period of high stream flows (approximately November 1 to April 30): A minimum of secondary treatment or equivalent control and unless otherwise specifically authorized by the Department, operation of all waste treatment and control facilities at maximum practicable efficiency and effectiveness so as to minimize waste discharges to public waters.

Basin-Specific Criteria (John Day)

340-041-0170

Beneficial Uses to Be Protected in the John Day Basin

(1) Water quality in the John Day Basin (see Figure 1) must be managed to protect the designated beneficial uses shown in Table 170A (November 2003).

(2) Designated fish uses to be protected in the John Day Basin are shown in Figures 170A and 170B (November 2003).

340-041-0174

Approved TMDLs in the Basin:

[The following TMDLs have been approved by EPA, and appear on the Department's web site:]

None

340-041-0175

Water Quality Standards and Policies for this Basin

(1) pH (hydrogen ion concentration). pH values may not fall outside the following range: all Basin streams (other than the main stem Colombia River): 6.5 – 9.0. When greater than 25 percent of ambient measurements taken between June and September are greater than pH 8.7, and as resources are available according to priorities set by the Department, the Department will determine whether the values higher than 8.7 are anthropogenic or natural in origin.

(2) Total Dissolved Solids. Guide concentrations listed below may not be exceeded unless otherwise specifically authorized by DEQ upon such conditions as it may deem necessary to carry out the general intent of this plan and to protect the beneficial uses set forth in OAR 340-041-0170: John Day River and Tributaries — 500.0 mg/l.

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Stat. Auth.: ORS 468.735, ORS 468B.035 & ORS 468B.048
Stats. Implemented: ORS 468B.048 & ORS 468B.030
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 1-1980, f. & ef. 1-9-80; DEQ 18-1987, f. & ef. 9-4-87; DEQ 14-1991, f. & cert. ef. 8-13-91; DEQ 17-1992, f. & cert. ef. 8-7-92 (and corrected 8-13-92); DEQ 6-1995, f. & cert. ef. 2-28-95; DEQ 21-1995(Temp), f. & cert. ef. 9-21-95; DEQ 5-1996, f. & cert. ef. 3-7-96; DEQ 22-1997, f. & cert. ef. 10-24-97; DEQ 9-1985, f. & ef. 8-6-85

Basin-Specific Criteria (Klamath)

340-041-0180

Beneficial Uses to Be Protected in the Klamath Basin

(1) Water quality in the Klamath Basin (see Figure 1) must be managed to protect the designated beneficial uses shown in Table 180A (November 2003).

(2) Designated fish uses to be protected in the Klamath Basin are shown in Figure 180A (November 2003).

340-041-0184

Approved TMDLs in the Basin:

[The following TMDLs have been approved by EPA, and appear on the Department's web site:]

Upper Klamath Lake Drainage – Temperature, Dissolved Oxygen, pH, Chlorophyll a – August 7, 2002.

340-041-0185

Water Quality Standards and Policies for this Basin

(1) pH (hydrogen ion concentration). pH values may not fall outside the following ranges:

(a) Fresh waters except Cascade lakes: pH values may not fall outside the range of 6.5 – 9.0. When greater than 25 percent of ambient measurements taken between June and September are greater than pH 8.7, and as resources are available according to priorities set by the Department, the Department will determine whether the values higher than 8.7 are anthropogenic or natural in origin;

(b) Cascade lakes above 5,000 feet altitude: pH values may not fall outside the range of 6.0 to 8.5.

(2) Total Dissolved Solids. Guide concentrations listed below may not be exceeded unless otherwise specifically authorized by DEQ upon such conditions as it may deem necessary to carry out the general intent of this plan and to protect the beneficial uses set forth in OAR 340-041-0180: main stem Klamath River from Klamath Lake to the Oregon-California Border (river miles 255 to 208.5): The specific conductance may not exceed 400 micro-ohms at 77°F when measured at the Oregon-California Border (river mile 208.5).

(3) Minimum Design Criteria for Treatment and Control of Sewage Wastes:

(a) During periods of low streams flows (approximately May 1 to October 31):

Treatment resulting in monthly average effluent concentrations not to exceed 20 mg/l of BOD and 20 of suspended solids or equivalent control;

(b) During the period of high stream flows (approximately November 1 to April 30): A minimum of secondary treatment or equivalent control and unless otherwise specifically authorized by the Department, operation of all waste treatment and control facilities to maximum practicable efficient and effectiveness so as to minimize waste discharge to public waters.

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Stats. Implemented: ORS 468B.048 & ORS 468B.030
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 1-1980, f. & ef. 1-9-80; DEQ 18-1987, f. & ef. 9-4-87; DEQ 14-1991, f. & cert. ef. 8-13-91; DEQ 17-1992, f. & cert. ef. 8-7-92 (and corrected 8-13-92); DEQ 6-1995, f. & cert. ef. 2-28-95; DEQ 21-1995(Temp), f. & cert. ef. 9-21-95; DEQ 5-1996, f. & cert. ef. 3-7-96; DEQ 22-1997, f. & cert. ef. 10-24-97; DEQ 9-1985, f. & ef. 8-6-85

Basin-Specific Criteria (Malheur Lake)

340-041-0190

Beneficial Uses to Be Protected in the Malheur Lake Basin

(1) Water quality in the Malheur Lake Basin (see Figure 1) must be managed to protect the designated beneficial uses shown in Table 190A (November 2003).

(2) Designated fish uses to be protected in the Malheur Lake Basin are shown in Table 190B (November 2003).

340-041-0194

Approved TMDLs in the Basin:

[The following TMDLs have been approved by EPA, and appear on the Department's web site:]

None

340-041-0195
Water Quality Standards and Policies for this Basin

(1) pH (hydrogen ion concentration). pH values may not fall outside the range of 7.0 to 9.0. When greater than 25 percent of ambient measurements taken between June and September are greater than pH 8.7, and as resources are available according to priorities set by the Department, the Department will determine whether the values higher than 8.7 are anthropogenic or natural in origin.

(2) Total Dissolved Solids. Guide concentrations listed below may not be exceeded unless otherwise specifically authorized by DEQ upon such conditions as it may deem necessary to carry out the general intent of this plan and to protect the beneficial uses set forth in OAR 340-041-0190: None.

(3) Minimum Design Criteria for Treatment and Control of Sewage wastes: a minimum of secondary treatment or equivalent control and unless otherwise specifically authorized by the Department, operation of all waste treatment and control facilities at maximum practicable efficiency and effectiveness so as to minimize waste discharges to public waters.

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Stats. Implemented: ORS 468B.048 & ORS 468B.030
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 1-1980, f. & ef. 1-9-80; DEQ 18-1987, f. & ef. 9-4-87; DEQ 14-1991, f. & cert. ef. 8-13-91; DEQ 17-1992, f. & cert. ef. 8-7-92 (and corrected 8-13-92); DEQ 6-1995, f. & cert. ef. 2-28-95; DEQ 21-1995(Temp), f. & cert. ef. 9-21-95; DEQ 5-1996, f. & cert. ef. 3-7-96; DEQ 22-1997, f. & cert. ef. 10-24-97; DEQ 9-1985, f. & ef. 8-6-85

Basin-Specific Criteria (Malheur River)

340-041-0201

Beneficial Uses to Be Protected in the Malheur River Basin

(1) Water quality in the Malheur River Basin (see Figure 1) must be managed to protect the designated beneficial uses shown in Table 201A (November 2003).

(2) Designated fish uses to be protected in the Malheur River Basin are shown in Figure 201A (November 2003).

340-041-0204

Approved TMDLs in the Basin:

[The following TMDLs have been approved by EPA, and appear on the Department's web site:]

None

340-041-0207

Water Quality Standards and Policies for this Basin

(1) pH (hydrogen ion concentration). pH values may not fall outside the range of 7.0 to 9.0. When greater than 25 percent of ambient measurements taken between June and September are greater than pH 8.7, and as resources are available according to priorities set by the Department, the Department will determine whether the values higher than 8.7 are anthropogenic or natural in origin.

(2) Total Dissolved Solids. Guide concentrations listed below may not be exceeded unless otherwise specifically authorized by DEQ upon such conditions as it may deem necessary to carry out the general intent of this plan and to protect the beneficial uses set forth in OAR 340-041-0201: Snake River — 750.0 mg/l.

(3) Minimum Design Criteria for Treatment Control of Sewage Wastes:

(a) During periods of low stream flow (approximately May 1 to October 31): Treatment resulting in monthly average effluent concentrations not to exceed 20 mg/l of BOD and 20 mg/l of SS or equivalent control;

(b) During periods of high stream flow (approximately November 1 to April 30): A minimum of Secondary Treatment or equivalent control and unless otherwise specifically authorized by the Department, operation of all waste treatment and control facilities at maximum practicable efficiency and effectiveness so as to minimize waste discharges to public waters.

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Stats. Implemented: ORS 468B.048 & ORS 468B.030
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 1-1980, f. & ef. 1-9-80; DEQ 18-1987, f. & ef. 9-4-87; DEQ 14-1991, f. & cert. ef. 8-13-91; DEQ 17-1992, f. & cert. ef. 8-7-92 (and corrected 8-13-92); DEQ 6-1995, f. & cert. ef. 2-28-95; DEQ 21-1995(Temp), f. & cert. ef. 9-21-95; DEQ 5-1996, f. & cert. ef. 3-7-96; DEQ 22-

1997, f. & cert. ef. 10-24-97; DEQ 9-1985, f. & ef. 8-6-85

Basin-Specific Criteria (Mid Coast Basin)

340-041-0220

Beneficial Uses to Be Protected in the Mid Coast Basin

(1) Water quality in the Mid Coast Basin (see Figure 1) may be managed to protect the designated beneficial uses shown in Table 220A (November 2003).

(2) Designated fish uses to be protected in the Mid Coast Basin are shown in Figures 220A and 220B (November 2003).

340-041-0224

Approved TMDLs in the Basin:

[The following TMDLs have been approved by EPA, and appear on the Department's web site:]

Clear Lake – Phosphorus – December 8, 1992

340-041-0225

Water Quality Standards and Policies for this Basin

(1) pH (hydrogen ion concentration). pH values may not fall outside the following ranges:

(a) Marine waters: 7.0 – 8.5;

(b) Estuarine and fresh waters: 6.5 – 8.5.

(2) Total Dissolved Solids. Guide concentrations listed below may not be exceeded unless otherwise specifically authorized by DEQ upon such conditions as it may deem necessary to carry out the general intent of this plan and to protect the beneficial uses set forth in OAR 340-041-0220: 100.0 mg/l.

(3) Nutrients in Clear Lake Watershed. In order to preserve the existing high quality water in Clear Lake north of Florence for use as a public water supply source requiring

only minimal filtration, it is the policy of the Environmental Quality Commission to protect the Clear Lake watershed including both surface and groundwater, from existing and potential contamination sources with the following requirements:

(a) The total phosphorus maximum annual loading discharged into Clear Lake may not exceed 241 pounds per year from all sources.

(b) The total phosphorus maximum annual loading for the Clear Lake watershed may be deemed exceeded if the median concentration of total phosphorus from samples collected in the epilimnion between May 1 and September 30 exceed nine micrograms per liter during two consecutive years.

(c) Of the total phosphorus loading of 241 pounds per year specified in section (1) of this rule, 192 pounds per year will be considered current background and Department reserve and is not available to other sources.

(d) The total phosphorus maximum annual loading discharged into Collard Lake may not exceed 123 pounds per year.

(e) If water quality monitoring within the Clear Lake watershed indicates degradation, the Commission may require additional studies, corrective actions, or both, by rule. Such corrective actions may include but are not limited to the construction of sewage collection and off-site treatment and disposal facilities.

(4) Minimum Design Criteria for Treatment and Control of Sewage Wastes:

(a) During periods of low stream flows (approximately May 1 to October 31): Treatment resulting in monthly average effluent concentrations not to exceed 20 mg/l of BOD and 20 mg/l of SS, or equivalent control;

(b) During the period of high stream flows (approximately November 1 to April 30) and for direct ocean discharges: a minimum of secondary treatment or equivalent control, and unless otherwise specifically authorized by the Department, operation of all waste treatment and control facilities at maximum practicable efficiency and effectiveness so as to minimize waste discharges to public waters.

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Stat. Auth.: ORS 468.735, ORS 468B.035 & ORS 468B.048
Stats. Implemented: ORS 468B.048 & ORS 468B.030
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 1-1980, f. & ef. 1-9-80; DEQ 18-1987, f. & ef. 9-4-87; DEQ 14-1991, f. & cert. ef. 8-13-91; DEQ 17-1992, f. & cert. ef. 8-7-92 (and corrected 8-13-92); DEQ 6-1995, f. & cert. ef. 2-28-95; DEQ 21-1995(Temp), f. & cert. ef. 9-21-95; DEQ 5-1996, f. & cert. ef. 3-7-96; DEQ 22-1997, f. & cert. ef. 10-24-97; DEQ 9-1985, f. & ef. 8-6-85

Basin-Specific Criteria
(North Coast)

340-041-0230

Beneficial Uses to Be Protected in the North Coast Basin

(1) Water quality in the North Coast Basin (see Figure 1) must be managed to protect the designated beneficial uses shown in Table 230A (November 2003).

(2) Designated fish uses to be protected in the North Coast Basin are shown in Figures 230A and 230B (November 2003).

340-041-0234

Approved TMDLs in the Basin:

[The following TMDLs have been approved by EPA, and appear on the Department's web site:]

Nestucca Bay Drainage – Temperature, Bacteria and Sediment – May 13, 2002

Tillamook Bay Drainage – Temperature and Bacteria – July 31, 2001

North Coast – Temperature and Bacteria - August 20, 2003

340-041-0235

Water Quality Standards and Policies for this Basin

(1) pH (hydrogen ion concentration). pH values may not fall outside the following ranges:

(a) Marine waters: 7.0—8.5;

(b) Estuarine and fresh waters: 6.5—8.5.

(2) Total Dissolved Solids. Guide concentrations may not be exceeded unless otherwise specifically authorized by DEQ upon such conditions as it may deem necessary to carry out the general intent of this plan and to protect the beneficial uses set forth in OAR 340-

041-0230: All Fresh Water Streams and Tributaries (other than the main stem Columbia River) — 100.0 mg/l.

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Stat. Auth.: ORS 468.735, ORS 468B.035 & ORS 468B.048
Stats. Implemented: ORS 468B.048 & ORS 468B.030
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 1-1980, f. & ef. 1-9-80; DEQ 18-1987, f. & ef. 9-4-87; DEQ 14-1991, f. & cert. ef. 8-13-91; DEQ 17-1992, f. & cert. ef. 8-7-92 (and corrected 8-13-92); DEQ 6-1995, f. & cert. ef. 2-28-95; DEQ 21-1995(Temp), f. & cert. ef. 9-21-95; DEQ 5-1996, f. & cert. ef. 3-7-96; DEQ 22-1997, f. & cert. ef. 10-24-97; DEQ 9-1985, f. & ef. 8-6-85

Basin-Specific Criteria (Owyhee)

340-041-0250

Beneficial Uses to Be Protected in the Owyhee Basin

(1) Water quality in the Owyhee Basin (see Figure 1) must be managed to protect the designated beneficial uses shown in Table 250A (November 2003).

(2) Designated fish uses to be protected in the Owyhee Basin are shown in Table 250B (November 2003).

340-041-0254

Approved TMDLs in the Basin:

[The following TMDLs have been approved by EPA, and appear on the Department's web site:]

None

340-041-0256

Water Quality Standards and Policies for this Basin

(1) pH (hydrogen ion concentration). pH values may not fall outside the range of 7.0 to 9.0. When greater than 25 percent of ambient measurements taken between June and September are greater than pH 8.7, and as resources are available according to priorities set by the Department, the Department will determine whether the values higher than 8.7 are anthropogenic or natural in origin.

(2) Total Dissolved Solids. Guide concentrations listed below may not be exceeded unless otherwise specifically authorized by DEQ upon such conditions as it may deem necessary to carry out the general intent of this plan and to protect the beneficial uses set forth in OAR 340-041-0250: Snake River — 750.0 mg/l.

(3) Minimum Design Criteria for Treatment and Control of Sewage Wastes: a minimum of secondary treatment or equivalent control and unless otherwise specifically authorized by the Department, operation of all waste treatment and control facilities at maximum practicable efficiency and effectiveness so as to minimize waste discharges to public waters.

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Stats. Implemented: ORS 468B.048 & ORS 468B.030
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 1-1980, f. & ef. 1-9-80; DEQ 18-1987, f. & ef. 9-4-87; DEQ 14-1991, f. & cert. ef. 8-13-91; DEQ 17-1992, f. & cert. ef. 8-7-92 (and corrected 8-13-92); DEQ 6-1995, f. & cert. ef. 2-28-95; DEQ 21-1995(Temp), f. & cert. ef. 9-21-95; DEQ 5-1996, f. & cert. ef. 3-7-96; DEQ 22-1997, f. & cert. ef. 10-24-97; DEQ 9-1985, f. & ef. 8-6-85

Basin-Specific Criteria (Powder/Burnt)

340-041-0260

Beneficial Uses to Be Protected in the Powder/Burnt Basins

(1) Water quality in the Powder/Burnt Basins (see Figure 1) must be managed to protect the designated beneficial uses shown in Table 260A (November 2003).

(2) Designated fish uses to be protected in the Powder/Burnt Basins are shown in Figure 260A (November 2003).

340-041-0264

Approved TMDLs in the Basin:

[The following TMDLs have been approved by EPA, and appear on the Department's web site:]

None

340-041-0265

Water Quality Standards and Policies for this Basin

(1) pH (hydrogen ion concentration). pH values may not fall outside the following range: all Basin streams (other than main stem Snake River): 6.5 – 9.0. When greater than 25 percent of ambient measurements taken between June and September are greater than pH 8.7, and as resources are available according to priorities set by the Department, the Department will determine whether the values higher than 8.7 are anthropogenic or natural in origin.

(2) Minimum Design Criteria for Treatment and Control of Sewage Wastes: a minimum of secondary treatment or equivalent control and unless otherwise specifically authorized by the Department, the operation of all waste treatment and control facilities at maximum practicable efficiency and effectiveness so as to minimize waste discharges to public waters.

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Stats. Implemented: ORS 468B.048 & ORS 468B.030
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 1-1980, f. & ef. 1-9-80; DEQ 18-1987, f. & ef. 9-4-87; DEQ 14-1991, f. & cert. ef. 8-13-91; DEQ 17-1992, f. & cert. ef. 8-7-92 (and corrected 8-13-92); DEQ 6-1995, f. & cert. ef. 2-28-95; DEQ 21-1995(Temp), f. & cert. ef. 9-21-95; DEQ 5-1996, f. & cert. ef. 3-7-96; DEQ 22-1997, f. & cert. ef. 10-24-97; DEQ 9-1985, f. & ef. 8-6-85

Basin-Specific Criteria (Rogue)

340-041-0271

Beneficial Uses to Be Protected in the Rogue Basin

(1) Water quality in the Rogue Basin (see Figure 1) must be managed to protect the designated beneficial uses shown in Table 271A (November 2003).

(2) Designated fish uses to be protected in the Rogue Basin are shown in Figures 271A and 271B (November 2003).

340-041-0274

Approved TMDLs in the Basin:

[The following TMDLs have been approved by EPA, and appear on the Department's web site:]

Bear Creek – Ammonia, BOD and Phosphorus – December 8, 1992

Lobster Creek – Temperature – June 13, 2002

Lower Sucker Creek – Temperature – May 30, 2002

Upper Sucker Creek – Temperature – May 4, 1999

340-041-0275

Water Quality Standards and Policies for this Basin

(1) pH (hydrogen ion concentration). pH values may not fall outside the following ranges:

(a) Marine waters: 7.0 – 8.5;

(b) Estuarine and fresh waters (except Cascade lakes): 6.5 – 8.5;

(c) Cascade lakes above 3,000 feet altitude: pH values may not fall outside the range of 6.0 to 8.5.

(2) Total Dissolved Solids. Guide concentrations listed below may not be exceeded unless otherwise specifically authorized by DEQ upon such conditions as it may deem necessary to carry out the general intent of this plan and to protect the beneficial uses set forth in OAR 340-041-0271: 500.0 mg/l.

(3) Minimum Design Criteria for Treatment and Control of Sewage Wastes:

(a) During periods of low stream flows (approximately May 1 to October 31): Treatment resulting in monthly average effluent concentrations not to exceed 10 mg/l of BOD and 10 mg/l of SS or equivalent control;

(b) During the period of high stream flows (approximately November 1 to April 30): A minimum of secondary treatment or equivalent control and unless otherwise specifically authorized by the Department, operation of all waste treatment and control facilities at maximum practicable efficiency and effectiveness so as to minimize waste discharges to public waters.

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Stats. Implemented: ORS 468B.048 & ORS 468B.030
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 1-1980, f. & ef. 1-9-80; DEQ 18-1987, f. & ef. 9-4-87; DEQ 14-1991, f. & cert. ef. 8-13-91; DEQ 17-1992, f. & cert. ef. 8-7-92 (and corrected 8-13-92); DEQ 6-1995, f. & cert. ef. 2-28-95; DEQ 21-1995(Temp), f. & cert. ef. 9-21-95; DEQ 5-1996, f. & cert. ef. 3-7-96; DEQ 22-1997, f. & cert. ef. 10-24-97; DEQ 9-1985, f. & ef. 8-6-85

Basin-Specific Criteria (Sandy Basin)

340-041-0286

Beneficial Uses to Be Protected in the Sandy Basin

(1) Water quality in the Sandy Basin (see Figure 1) must be managed to protect the designated beneficial uses shown in Table 286A (November 2003).

(2) Designated fish uses to be protected in the Sandy Basin are shown in Figures 286A and 286B (November 2003).

340-041-0289

Approved TMDLs in the Basin:

[The following TMDLs have been approved by EPA, and appear on the Department's web site:]

None

340-041-0290

Water Quality Standards and Policies for this Basin

(1) pH (hydrogen ion concentration). pH values may not fall outside the following ranges:

(a) All Basin waters (except main stem Columbia River and Cascade lakes): pH values may not fall outside the range of 6.5 to 8.5;

(b) Cascade lakes above 3,000 feet altitude: pH values may not fall outside the range of 6.0 to 8.5.

(2) Total Dissolved Solids. Guide concentrations listed below may not be exceeded unless otherwise specifically authorized by DEQ upon such conditions as it may deem necessary to carry out the general intent of this plan and to protect the beneficial uses set forth in OAR 340-041-0286: All Basin Waters (other than the main stem Columbia river) — 100.0 mg/l.

(3) Minimum Design Criteria for Treatment and Control of Sewage Wastes:

(a) All Basin waters (except main stem Columbia River):

(A) During periods of low stream flows (approximately June 1 to October 31): Treatment resulting in monthly average effluent concentrations not to exceed 10 mg/l of BOD and 10 mg/l of SS or equivalent control;

(B) During the period of high stream flows (approximately November 1 to May 31): A minimum of secondary treatment or equivalent control and unless otherwise specifically authorized by the Department, operation of all waste treatment and control facilities at maximum practicable efficiency and effectiveness so as to minimize waste discharges to public waters.

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Stats. Implemented: ORS 468B.048 & ORS 468B.030
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 1-1980, f. & ef. 1-9-80; DEQ 18-1987, f. & ef. 9-4-87; DEQ 14-1991, f. & cert. ef. 8-13-91; DEQ 17-1992, f. & cert. ef. 8-7-92 (and corrected 8-13-92); DEQ 6-1995, f. & cert. ef. 2-28-95; DEQ 21-1995(Temp), f. & cert. ef. 9-21-95; DEQ 5-1996, f. & cert. ef. 3-7-96; DEQ 22-1997, f. & cert. ef. 10-24-97; DEQ 9-1985, f. & ef. 8-6-85

Basin-Specific Criteria (South Coast)

340-041-0300

Beneficial Uses to Be Protected in the South Coast Basin

(1) Water quality in the South Coast Basin (see Figure 1) must be managed to protect the designated beneficial uses shown in Table 300A (November 2003).

(2) Designated fish uses to be protected in the South Coast Basin are shown in Figures 300A and 300B (November 2003).

340-041-0304

Approved TMDLs in the Basin

[The following TMDLs have been approved by EPA, and appear on the Department's web site:]

Coquille – BOD – July 3, 1996

Upper South Fork of the Coquille – Temperature – March 23, 2001

340-041-0305

Water Quality Standards and Policies for this Basin

(1) pH (Hydrogen ion concentration) pH values may not fall outside the following ranges:

(a) Estuarine and fresh waters: 6.5 – 8.5.

(b) Marine waters: 7.0 – 8.5.

(2) Total Dissolved Solids. Guide concentrations listed below may not be exceeded unless otherwise specifically authorized by DEQ upon such conditions as it may deem necessary to carry out the general intent of this plan and to protect the beneficial uses set forth in OAR 340-041-0300: 100.0 mg/l.

(3) Minimum Design Criteria for Treatment and Control of Sewage Wastes:

(a) During periods of low stream flows (approximately May 1 to October 31): Treatment resulting in monthly average effluent concentrations not to exceed 20 mg/l of BOD and 20 mg/l of SS or equivalent control;

(b) During the period of high stream flows (approximately November 1 to April 30) and for direct ocean discharges: A minimum of secondary treatment or equivalent control and

unless otherwise specifically authorized by the Department, operation of all waste treatment and control facilities at maximum practicable efficiency and effectiveness so as to minimize waste discharges to public waters.

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Stats. Implemented: ORS 468B.048 & ORS 468B.030
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 1-1980, f. & ef. 1-9-80; DEQ 18-1987, f. & ef. 9-4-87; DEQ 14-1991, f. & cert. ef. 8-13-91; DEQ 17-1992, f. & cert. ef. 8-7-92 (and corrected 8-13-92); DEQ 6-1995, f. & cert. ef. 2-28-95; DEQ 21-1995(Temp), f. & cert. ef. 9-21-95; DEQ 5-1996, f. & cert. ef. 3-7-96; DEQ 22-1997, f. & cert. ef. 10-24-97; DEQ 9-1985, f. & ef. 8-6-85

Basin-Specific Criteria (Umatilla)

340-041-0310

Beneficial Uses to Be Protected in the Umatilla Basin

(1) Water quality in the Umatilla Basin (see Figure 1) must be managed to protect the designated beneficial uses shown in Table 310A (November 2003).

(2) Designated fish uses to be protected in the Umatilla Basin are shown in Figures 310A and 310B (November 2003).

340-041-0314

Approved TMDLs in the Basin:

[The following TMDLs have been approved by EPA, and appear on the Department's web site:]

Umatilla River Basin – Temperature, pH, Sediment, Turbidity, Aquatic Weeds, and Algae – May 9, 2001

340-041-0315

Water Quality Standards and Policies for this Basin

(1) pH (hydrogen ion concentration). pH values may not fall outside the following range: all Basin streams (other than main stem Columbia River): 6.5 – 9.0. When greater than 25 percent of ambient measurements taken between June and September are greater than pH 8.7, and as resources are available according to priorities set by the Department, the Department will determine whether the values higher than 8.7 are anthropogenic or natural in origin.

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Stats. Implemented: ORS 468B.048 & ORS 468B.030
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 1-1980, f. & ef. 1-9-80; DEQ 18-1987, f. & ef. 9-4-87; DEQ 14-1991, f. & cert. ef. 8-13-91; DEQ 17-1992, f. & cert. ef. 8-7-92 (and corrected 8-13-92); DEQ 6-1995, f. & cert. ef. 2-28-95; DEQ 21-1995(Temp), f. & cert. ef. 9-21-95; DEQ 5-1996, f. & cert. ef. 3-7-96; DEQ 22-1997, f. & cert. ef. 10-24-97; DEQ 9-1985, f. & ef. 8-6-85

Basin-Specific Criteria (Umpqua Basin)

340-041-0320

Beneficial Uses to Be Protected in the Umpqua Basin

(1) Water quality in the Umpqua Basin (see Figure 1) must be managed to protect the designated beneficial uses shown in Table 320A (November 2003).

(2) Designated fish uses to be protected in the Umpqua Basin are shown in Figures 320A and 320B (November 2003).

340-041-0324

Approved TMDLs in the Basin:

[The following TMDLs have been approved by EPA, and appear on the Department's web site:]

Little River – Temperature, pH and Sediment – January 29, 2002

340-041-0326

Water Quality Standards and Policies for this Basin

(1) pH (hydrogen ion concentration). pH values may not fall outside the following ranges:

(a) Marine waters: 7.0 – 8.5;

(b) Estuarine and fresh waters (except Cascade lakes): 6.5 – 8.5;

(c) Cascade lakes above 3,000 feet altitude: pH values may not fall outside the range of 6.0 to 8.5.

(2) Total Dissolved Solids. Guide concentrations listed below may not be exceeded unless otherwise specifically authorized by DEQ upon such conditions as it may deem necessary to carry out the general intent of this plan and to protect the beneficial uses set forth in OAR 340-041-0320: 500.0 mg/l.

(3) Turbidity (Nephelometric Turbidity Units, NTU). When appropriate studies are completed by the Corps of Engineers, or others, the Environmental Quality Commission will, consistent with the provisions of ORS Chapter 468, modify the turbidity standard, on a case-by-case basis if necessary, to accommodate such specific water storage and development projects in the South Umpqua Basin as are found to be in the best overall interest of the public.

(4) Minimum Design Criteria for Treatment and Control of Sewage Wastes:

(a) During periods of low stream flows (approximately May 1 to October 31):

(A) Main stem Umpqua River, South Umpqua River, and all tributaries to the main stem and South Umpqua Rivers: Treatment resulting in monthly average effluent concentrations not to exceed 10 mg/l of BOD and 10 mg/l of SS or equivalent control;

(B) North Umpqua River from mouth to Idleyld Park (river mile 0 to 35): Treatment resulting in monthly average effluent concentrations not to exceed 10 mg/l of BOD and 10 mg/l of SS or equivalent control;

(C) North Umpqua River above Idleyld Park (river mile 35) and all tributaries to North Umpqua River: Treatment resulting in monthly average effluent concentrations not to exceed 5 mg/l of BOD and 5 mg/l of SS or equivalent control.

(b) During the period of high stream flows (approximately November 1 to April 30): A minimum of secondary treatment or equivalent control and unless otherwise specifically authorized by the Department, operation of all waste treatment and control facilities at maximum practicable efficiency and effectiveness so as to minimize waste discharges to public waters.

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Basin-Specific Criteria (Walla Walla)

340-041-0330

Beneficial Uses to Be Protected in the Walla Walla Basin

(1) Water quality in the Walla Walla Basin (see Figure 1) must be managed to protect the designated beneficial uses shown in Table 330A (November 2003).

(2) Designated fish uses to be protected in the Walla Walla Basin are shown in Figures 310A and 310B (November 2003).

340-041-0334

Approved TMDLs in the Basin:

[The following TMDLs have been approved by EPA, and appear on the Department's web site:]

None

340-041-0336

Water Quality Standards and Policies for this Basin

(1) pH (hydrogen ion concentration). pH values may not fall outside the range of 6.5 to 9.0. When greater than 25 percent of ambient measurements taken between June and September are greater than pH 8.7, and as resources are available according to priorities set by the Department, the Department will determine whether the values higher than 8.7 are anthropogenic or natural in origin.

(2) Total Dissolved Solids. Guide concentrations listed below may not be exceeded unless otherwise specifically authorized by DEQ upon such conditions as it may deem necessary to carry out the general intent of this plan and to protect the beneficial uses set forth in OAR 340-041-0330: 200.0 mg/l.

Minimum Design Criteria for Treatment and Control of Sewage Wastes in this Basin:

(a) During periods of low stream flows (approximately April 1 to October 31): Treatment resulting in monthly average effluent concentrations not to exceed 20 mg/l of BOD and 20 mg/l of suspended solids or equivalent control;

(b) During the period of high stream flows (approximately November 1 to March 31): A minimum of secondary treatment or equivalent control and unless otherwise specifically authorized by the Department, operation of all waste treatment and control facilities at maximum practicable efficiency and effectiveness so as to minimize waste discharges to public waters.

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Stats. Implemented: ORS 468B.048 & ORS 468B.030
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 1-1980, f. & ef. 1-9-80; DEQ 18-1987, f. & ef. 9-4-87; DEQ 14-1991, f. & cert. ef. 8-13-91; DEQ 17-1992, f. & cert. ef. 8-7-92 (and corrected 8-13-92); DEQ 6-1995, f. & cert. ef. 2-28-95; DEQ 21-1995(Temp), f. & cert. ef. 9-21-95; DEQ 5-1996, f. & cert. ef. 3-7-96; DEQ 22-1997, f. & cert. ef. 10-24-97; DEQ 9-1985, f. & ef. 8-6-85

Basin-Specific Criteria (Willamette)

340-041-0340

Beneficial Uses to Be Protected in the Willamette Basin

(1) Water quality in the Willamette Basin (see Figure 1) must be managed to protect the designated beneficial uses shown in Table 340A (November 2003).

(2) Designated fish uses to be protected in the Willamette Basin are shown in Figures 340A and 340B (November 2003).

340-041-0344

Approved TMDLs in the Basin:

[The following TMDLs have been approved by EPA, and appear on the Department's web site:]

Columbia Slough - Bacteria, Dissolved Oxygen, Chlorophyll a, pH, lead, PCBs, Dieldrin, Dioxin, DDE/DDT, and Phosphorus – November 25, 1998

Pudding – Ammonia and BOD – October 18, 1993

Rickreall Creek – BOD – April 18, 1994

Tualatin – Temperature, Bacteria, Dissolved Oxygen, Settleable Volatile Solids, Ammonia, Chlorophyll a, pH and Phosphorus – August 7, 2001

Yamhill – Phosphorus – December 8, 1992

Willamette – Dioxin – February 25, 1991

Willamette Coast Fork – Ammonia and Phosphorus – May 17, 1996

340-041-0345

Water Quality Standards and Policies for this Basin

(1) pH (hydrogen ion concentration). pH values may not fall outside the following ranges:

(a) All basin waters (except main stem Columbia River and Cascade lakes): 6.5 to 8.5;

(b) Cascade lakes above 3,000 feet altitude: 6.0 to 8.5.

(2) Total Dissolved Solids. Guide concentrations listed may not be exceeded unless otherwise specifically authorized by DEQ upon such conditions as it may deem necessary to carry out the general intent of this plan and to protect the beneficial uses set forth in OAR 340-041-0340: Willamette River and Tributaries —100.0 mg/l.

(3) Minimum Design Criteria for Treatment and Control of Sewage Wastes:
(a) Willamette River and tributaries except Tualatin River Subbasin:

(A) During periods of low stream flows (approximately May 1 to October 31): Treatment resulting in monthly average effluent concentrations not to exceed 10 mg/l of BOD and 10 mg/l of SS or equivalent control;

(B) During the period of high stream flows (approximately November 1 to April 30): A minimum of secondary treatment or equivalent control and unless otherwise specifically authorized by the Department, operation of all waste treatment and control facilities at maximum practical efficiency and effectiveness so as to minimize waste discharges to public waters.

(b) Main stem Tualatin River from mouth to Gaston (river mile 0 to 65):

(A) During periods of low stream flows (approximately May 1 to October 31): Treatment resulting in monthly average effluent concentrations not to exceed 10 mg/l of BOD and 10 mg/l of SS or equivalent control;

(B) During the period of high stream flows (approximately November 1 to April 30): Treatment resulting in monthly average effluent concentrations not to exceed 20 mg/l of BOD and 20 mg/l of SS or equivalent control.

(c) Main stem Tualatin River above Gaston (river mile 65) and all tributaries to the Tualatin River: Treatment resulting in monthly average effluent concentrations not to exceed 5 mg/l of BOD and 5 mg/l of SS or equivalent control;

(d) Tualatin River Subbasin: The dissolved oxygen level in the discharged effluents may not be less than 6 mg/l;

(4) Nonpoint source pollution control in the Tualatin River subbasin and lands draining to Oswego Lake:

(a) Subsection (5)(b) of this rule applies to any new land development within the Tualatin River and Oswego Lake subbasins, except those developments with application dates prior to January 1, 1990. The application date is the date on which a complete application for development approval is received by the local jurisdiction in accordance with the regulations of the local jurisdiction;

(b) For land development, no preliminary plat, site plan, permit or public works project may be approved by any jurisdiction in these subbasins unless the conditions of the plat permit or plan approval include an erosion control plan containing methods and/or interim facilities to be constructed or used concurrently with land development and to be operated during construction to control the discharge of sediment in the stormwater runoff. The erosion control plan must include the following elements:

(A) Protection techniques to control soil erosion and sediment transport to less than one ton per acre per year, as calculated using the Natural Resources Conservation Service's Universal Soil Loss Equation or other equivalent methods (see Figures 1 to 6 in Appendix 1 for examples). The erosion control plan must include temporary sedimentation basins or other sediment control devices when, because of steep slopes or other site specific considerations, other on-site sediment control methods will not likely keep the sediment transport to less than one ton per acre per year. The local jurisdictions may establish additional requirements for meeting an equivalent degree of control. Any

sediment basin constructed must be sized using 1.5 feet minimum sediment storage depth plus 2.0 feet storage depth above for a settlement zone. The storage capacity of the basin must be sized to store all of the sediment that is likely to be transported and collected during construction while the erosion potential exists. When the erosion potential has been removed, the sediment basin, or other sediment control facilities, can be removed and the site restored as per the final site plan. All sediment basins must be constructed with an emergency overflow to prevent erosion or failure of the containment dike; or

(B) A soil erosion control matrix derived from and consistent with the universal soil equation approved by the jurisdiction or the Department.

(c) The Director may modify Appendix 1 as necessary without approval from the Environmental Quality Commission. The Director may modify Appendix 1 to simplify it and to make it easier for people to apply;

(d) Subsection (5)(e) of this rule applies to any new land development within the Tualatin River and Oswego Lake subbasins, except:

(A) Those developments with application dates prior to June 1, 1990. The application date is the date on which a complete application for development approval is received by the local jurisdiction in accordance with the regulations of the local jurisdiction;

(B) One and two family dwellings on existing lots of record;

(C) Sewer lines, water lines, utilities or other land development that will not directly increase nonpoint source pollution once construction has been completed and the site is either restored to or not altered from its approximate original condition;

(D) If the Environmental Quality Commission determines that a jurisdiction does not need to require stormwater quality control facilities for new development;

(E) When a jurisdiction adopts ordinances that provide for a stormwater quality program equivalent to subsection (e) of this section. Ordinances adopted to implement equivalent programs must:

(i) Encourage on-site retention of stormwater, require phosphorus removal equivalent to the removal efficiency required by subsection (e) of this section, provide for adequate operation and maintenance of stormwater quality control facilities, and require financial assurance, or equivalent security that assures construction of the stormwater quality control facilities required by the ordinance;

(ii) If the ordinances provide for exemptions other than those allowed for by paragraphs (B) and (C) of this subsection, the ordinances must provide for collection of in-lieu fees or other equivalent mechanisms that assure financing for, and construction of, associated, off-site stormwater quality control facilities. No exemption may be allowed if the

jurisdiction is not meeting an approved schedule for identifying location of the off-site stormwater quality control facility to serve the development requesting an exemption.

(e) For new development, no plat, site plan, building permit or public works project may be approved by any jurisdiction in these subbasins unless the conditions of the plat, permit or plan approval require permanent stormwater quality control facilities to control phosphorus loadings associated with stormwater runoff from the development site. Jurisdictions must encourage and provide preference to techniques and methods that prevent and minimize pollutants from entering the storm and surface water systems. Permanent stormwater quality control facilities for phosphorus must meet the following requirements:

(A) The stormwater quality control facilities must be designed to achieve a phosphorus removal efficiency as calculated from the following equation:

$R_p = 100 - 24.5/R_v$
Where:
R_p = Required phosphorus removal efficiency
R_v = Average site runoff coefficient
The average site runoff coefficient can be calculated from the following equation:
$R_v = (0.7 \times A_1) + (0.3 \times A_2) + (0.7 \times A_3) +$
$(0.05 \times A_4) + (A_5 \times 0.0)$

Where:
A_1 = fraction of total area that is paved streets with curbs and that drain to storm sewers or open ditches.
A_2 = fraction of total area that is paved streets that drain to water quality swales located on site.
A_3 = fraction of total area that is building roof and paved parking that drains to storm sewers.
A_4 = fraction of total area that is grass, trees and marsh areas.
A_5 = fraction of total area for which runoff will be collected and retained on site with no direct discharge to surface waters.

(B) A jurisdiction may modify the equation for R_v to allow the application of additional runoff coefficients associated with land surfaces not identified in this subsection. The Department must be notified in writing whenever an additional runoff coefficient is used. The use of additional runoff coefficients must be based on scientific data. The jurisdiction must discontinue use of an additional runoff coefficient if the Department objects to its use in writing within ten days of receiving notification;

(C) The stormwater quality control facilities must be designed to meet the removal efficiency specified in paragraph (A) of this subsection for a mean summertime storm event totaling 0.36 inches of precipitation with an average return period of 96 hours;

(D) The removal efficiency specified in paragraph (A) of this subsection specify only design requirements and are not intended to be used as a basis for performance evaluation or compliance determination of the stormwater quality control facility installed or constructed pursuant to this subsection;

(E) Stormwater quality control facilities required by this subsection may be approved by a jurisdiction only if the following are met:

(i) For developments larger than one acre, the plat or site plan must include plans and a certification prepared by an Oregon registered, professional engineer that the proposed stormwater control facilities have been designed in accordance with criteria expected to achieve removal efficiencies for total phosphorus required by paragraph (A) of this subsection;

(ii) The plat or site plan must be consistent with the area and associated runoff coefficients used to determine the removal efficiency required in paragraph (A) of this subsection;

(iii) A financial assurance, or equivalent security acceptable to the jurisdiction, must be provided by the developer with the jurisdiction that assures that the stormwater control facilities are constructed according to the plans established in the plat or site plan approval. Where practicable, the jurisdiction must combine the financial assurance required by this rule with other financial assurance requirements imposed by the jurisdiction;

(iv) Each jurisdiction that constructs or authorizes construction of permanent stormwater quality control facilities must file with the Department, an operation and maintenance plan for the stormwater quality control facilities within its jurisdiction. The operation and maintenance plan must allow for public or private ownership, operation, and maintenance of individual permanent stormwater quality control facilities. The jurisdiction or private operator must operate and maintain the permanent stormwater control facilities in accordance with the operation and maintenance plan.

(f) Except as required by paragraph (D) of this subsection, the jurisdiction may grant an exception to subsection (e) of this section if the jurisdiction chooses to adopt and, on a case-by-case basis, impose a one time in-lieu fee. The fee will be an option where, because of the size of the development, topography, or other factors, the jurisdiction determines that the construction of on-site permanent stormwater treatment systems is impracticable or undesirable;

(A) The in-lieu fee will be based upon a reasonable estimate of the current, prorated cost for the jurisdiction to provide stormwater quality control facilities for the land development being assessed the fee. Estimated costs include costs associated with off-site land and rights-of-way acquisition, design, construction and construction inspection;

(B) The jurisdiction must deposit any in-lieu fees collected pursuant to this paragraph in an account dedicated only to reimbursing the jurisdiction for expenses related to off-site land and rights-of-way acquisition, design, construction and construction inspection of stormwater quality control facilities;

(C) The ordinance establishing the in-lieu fee must include provisions that reduce the fee in proportion to the ratio of the site's average runoff coefficient (Rv), as established according to the equation in paragraph (6)(e)(A) of this rule;

(D) No new development may be granted an exemption if the jurisdiction is not meeting an approved time schedule for identifying the location for the off-site stormwater quality control facilities that would serve that development.

(g) The Department may approve other mechanisms that allow jurisdictions to grant exemptions to new development. The Department may only approve those mechanisms that assure financing for off-site stormwater quality control facilities and that encourage or require on-site retention where feasible;

(h) Subsection (b) of this section apply until a jurisdiction adopts ordinances that provide for a program equivalent to subsection (b) of this section, or the Environmental Quality Commission determines such a program is not necessary when it approves the jurisdiction's program plan required by OAR 340-041-0470(2)(g).

[ED. NOTE: The Table(s) referenced in this rule is not printed in the OAR Compilation. Copies are available from the agency.] [Publications: The publication(s) referred to or incorporated by reference in this rule are available from the office of the agency.]
Stat. Auth.: ORS 468.735, ORS 468B.035 & ORS 468B.048
Stats. Implemented: ORS 468B.048 & ORS 468B.030
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 1-1980, f. & ef. 1-9-80; DEQ 18-1987, f. & ef. 9-4-87; DEQ 14-1991, f. & cert. ef. 8-13-91; DEQ 17-1992, f. & cert. ef. 8-7-92 (and corrected 8-13-92); DEQ 6-1995, f. & cert. ef. 2-28-95; DEQ 21-1995(Temp), f. & cert. ef. 9-21-95; DEQ 5-1996, f. & cert. ef. 3-7-96; DEQ 22-1997, f. & cert. ef. 10-24-97; DEQ 9-1985, f. & ef. 8-6-85

340-041-0350

The Three Basin Rule: Clackamas, McKenzie (above RM 15) & the North Santiam

(1) In order to preserve or improve the existing high quality water for municipal water supplies, recreation, and preservation of aquatic life, new or increased waste discharges must be prohibited, except as provided by this rule, to the waters of:

(a) The Clackamas River Subbasin;

(b) The McKenzie River Subbasin above the Hayden Bridge (river mile 15);

(c) The North Santiam River Subbasin.

(2) Except as otherwise provided for in this rule, this rule becomes effective and applies to all permits pending or applied for after the date of filing with the Secretary of State.

(3) Special Definitions. The following special definitions apply to this rule:

(a) "Waste Discharges" are defined to mean any discharge that requires and NPDES permit, WPCF permit, or 401 Certification. Individual on-site sewage disposal systems subject to issuance of a construction-installation permit; domestic sewage facilities that discharge less than 5,000 gallons per day under WPCF permit; biosolids land applied within agronomic loading rates pursuant to OAR chapter 340, division 50; and reclaimed domestic waste water land applied at agronomic rates pursuant to OAR chapter 340, division 55 are excluded from this definition.

(b) "Existing Discharges" are defined as those discharges from point sources which existed prior to January 28, 1994;

(c) "Existing Facilities" are defined as those for which construction started prior to January 28, 1994. Where existing facilities are exempted from requirements placed on new facilities, the exemption applies only to the specific permit(s) addressed in the subsection which allows the exemption;

(d) "New" NPDES and WPCF permits are defined to include permits for potential or existing discharges which did not previously have a permit, and existing discharges which have a permit, but request an increased load limitation;

(e) "Agronomic Loading Rate" means the application of biosolids or reclaimed effluent to the land at a rate which is designed to:

(A) Provide the quantity of plant nutrients, usually nitrogen, needed by a food crop, feed crop, fiber crop, cover crop or other vegetation grown on the land; and

(B) Minimize the quantity of nitrogen or other nutrients from land applied materials that pass below the root zone of the crop or vegetation grown on the land to groundwater.

(f) "Biosolids" means solids derived from primary, secondary, or advanced treatment of domestic wastewater which have been treated through one or more controlled processes that significantly reduce pathogens and reduce volatile solids or chemical stabilize solids to the extent that they do not attract vectors. This term refers to domestic wastewater treatment facility solids that have undergone adequate treatment to permit their land application;

(g) "Reclaimed Wastewater" means treated effluent from a domestic wastewater treatment system which, as a result of treatment, is suitable for a direct beneficial purpose or a controlled use that could not otherwise occur.

(4) To respond to emergencies or to otherwise avoid imminent serious danger to public health or welfare, the Director or designee may allow lower water quality on a short-term basis.

(5) The Director or a designee may renew or transfer NPDES and WPCF permits for existing facilities. Existing facilities with NPDES permits may not be granted increases in their permitted mass load limitations. The following restrictions and exceptions apply:

(a) The Department may conduct an inspection prior to permit renewal. Existing sources with general permits that are found not to qualify for a general permit, and who wish to continue discharging, must apply for an individual permit;

(b) Fish hatcheries (General Permit 300) and log ponds (General Permit 400) are required to apply for an individual permit at the time of permit renewal;

(c) Additional industrial, confined animal feeding operations, or domestic waste loads that are irrigated on land at agronomic rates or that otherwise meet the conditions of section (7) of this rule is not be considered to be an increase in the permitted wasteload.

(6) The Director or a designee may issue the following General Permits or Certifications subject to the conditions of the Permit or Certification:

(a) Storm water construction activities (General Permits 1200C and 1200CA);

(b) Underground storage tank cleanups using best available treatment technology (General Permit 1500);

(c) Non-contact cooling water (General Permit 100);

(d) Filter backwash (General Permit 200);

(e) Boiler blowdown water (General Permit 500);

(f) Suction dredging (General Permit 700) only in portions of the basins that are not designated as Scenic Waterways under ORS 390.805 to 390.925;

(g) Federal Clean Water Act Section 401 water quality certifications.

(7) Long-term general and individual storm water permits may be allowed as required by State and/or Federal law. The following requirements apply:

(a) New storm water discharge permit holders must maintain a monitoring and water quality evaluation program that is effective in evaluation of the in-stream water quality impacts of the discharge; and

(b) When sufficient data is available to do so, the Department will assess the water quality impacts of storm water discharges. Within a subbasin, if the proportion of total degradation that is contributed by the storm water is determined to be significant compared to that of other permitted sources, or if the Department determines that reducing degradation due to storm water is cost- effective when compared to other available pollution control options, the Department may institute regulatory mechanisms or modify permit conditions to require control technologies and/or practices that result in protection that is greater than that required Statewide.

(8) Industrial waste discharge sources, confined animal feeding operations, and domestic sewage treatment facilities must meet the following conditions:

(a) No NPDES permits for new industrial or new confined animal feeding operation waste discharges, or new domestic sewage treatment facilities may be issued, except as allowed under sections (3), (4), (5), and (6) of this rule;

(b) The Department may issue WPCF permits for new industrial or confined animal feeding operation waste discharges provided:

(A) There is no waste discharge to surface water; and

(B) All groundwater quality protection requirements of OAR 340-040-0030 are met. Neither the Department nor the Commission may grant a concentration limit variance as provided in OAR 340-040-0030, unless the Commission finds that all appropriate groundwater quality protection requirements and compliance monitoring are met and there will be no measurable change in the water quality of the surface water that would be potentially affected by the proposed facility. For any variance request, a public hearing must be held prior to Commission action on the request.

(c) The Department may issue WPCF permits for new domestic sewage treatment facilities provided there is no waste discharge to surface water and provided:

(A) All groundwater quality protection requirements of OAR 340-040-0030 are met. Neither the Department nor the Commission may grant a concentration limit variance as provided in OAR 340-040-0030, unless the Commission finds that all appropriate groundwater quality protection requirements and compliance monitoring are met and there will be no measurable change in the water quality of the surface water that would be potentially affected by the proposed facility. For any variance request, a public hearing must be held and the permit application will be evaluated according to paragraphs (B) and (C) of this subsection;

(B) The Commission finds that the proposed new domestic sewage treatment facility provides a preferable means of sewage collection, treatment and disposal as compared to individual on-site sewage disposal systems. To be preferable, the Commission must find that one of the following criteria applies:

(i) The new sewage treatment facility will eliminate a significant number of failing individual on-site sewage disposal systems that cannot be otherwise reliably and cost-effectively repaired; or

(ii) The new sewage treatment facility will treat domestic sewage that would otherwise be treated by individual on-site sewage disposal systems, from which the cumulative impact to groundwater is projected to be greater than that from the new facility; or

(iii) If an individual on-site sewage disposal system, or several such systems, would not normally be utilized, a new sewage treatment facility may be allowed if the Commission finds that the social and economic benefits of the discharge outweigh the possible environmental impacts.

(C) Applicants for domestic wastewater WPCF permits must meet the following requirements:

(i) Application must be for an individual permit; and

(ii) The proposed discharge must not include wastes that incapacitate the treatment system; and

(iii) The facility must be operated or supervised by a certified wastewater treatment plant operator as required in OAR 340-049-0015, except as exempted by ORS 448.430; and

(iv) An annual written certification of proper treatment and disposal system operation must be obtained from a qualified Registered Sanitarian, Professional Engineer, or certified wastewater treatment system operator.

(9) The Environmental Quality Commission may investigate, together with any other affected State agencies, the means of maintaining at least existing minimum flow during the summer low flow period.

(10) In order to improve water quality within the Yamhill River subbasin to meet the existing water quality standard for pH, the following special rules for total maximum daily loads, waste load allocations, load allocations and program plans are established:

(a) After completion of wastewater control facilities and program plans approved by the Commission under this rule and no later than June 30, 1994, no activities may be allowed and no wastewater may be discharged to the Yamhill River or its tributaries without the authorization of the Commission that cause the monthly median concentration of total

phosphorus to exceed 70 ug/1 as measured during the low flow period between approximately May 1 and October 31*** of each year;

(b) Within 90 days of adoption of these rules, the Cities of McMinnville and Lafayette must submit a program plan and time schedule to the Department describing how and when they will modify their sewerage facility to comply with this rule;

(c) Final program plans will be reviewed and approved by the Commission. The Commission may define alternative compliance dates as program plans are approved. All proposed final program plans must be subject to public hearing prior to consideration for approval by the Commission;

(d) The Department will within 60 days of adoption of these rules distribute initial waste load allocations and load allocations to the point and nonpoint sources in the basin. These allocations are considered interim and may be redistributed based upon the conclusions of the approved program plans.

***Precise dates for complying with this rule may be conditioned on physical conditions (i.e., flow, temperature) of the receiving water and may be specified in individual permits or memorandums of understanding issued by the Department. The Department may consider system design flows, river travel times, and other relevant information when establishing the specific conditions to be inserted in the permits or memorandums of understanding.

Stat. Auth.: ORS 468.020
Stats. Implemented: ORS 468B.030
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 17-1988, f. & cert. ef. 7-13-88; DEQ 25-1988, f. & cert. ef. 9-16-88; DEQ 18-1989, f. & cert. ef. 7-31-89 (and corrected 8-3-89); DEQ 3-1994, f. & cert. ef. 2-2-94; DEQ 5-1995, f. & cert. ef. 2-28-95; DEQ 5-2001, f. & cert. ef. 4-24-01

Attachment A
Appendix 1

Please note that the Designated Beneficial Use and Fish Use tables referred to in the water quality standards rules (OAR 340-41) may be found at the web site shown below, or by contacting the Water Quality Division of DEQ in Portland. Please contact Jennifer Weaver at 503-229-6855.

http://www.deq.state.or.us/wq/standards/WQStdsTemp.htm

Following adoption by the EQC and approval by the EPA, the use designation tables and figures may be found at the DEQ web site shown below, or by contacting the Water Quality Division of DEQ in Portland. We expect that the uses will be posted on the site below in March, 2004. Please contact Jennifer Weaver at 503-229-6855.

http://www.deq.state.or.us/wq/standards/WQStdsBeneficialUses.htm

TABLE 101B

BENEFICIAL USE DESIGNATIONS - FISH USES
MAINSTEM COLUMBIA RIVER

Geographic Extent of Use	**Salmon and Steelhead Migration Corridors (20°C)**	**Salmon and Steelhead Spawning through Fry Emergence**	**Shad and Sturgeon Spawning and Rearing**
Mainstem Columbia River			
Beacon Rock to Upstream of Ives Island (RM 141.5 to RM 143.5)		October 15 - March 31	
Columbia River, mouth to WA border (RM309)	X		
Columbia River (RM 147 to RM 203)			X

TABLE 121B

BENEFICIAL USE DESIGNATIONS - FISH USES
MAINSTEM SNAKE RIVER

Geographic Extent of Use	**Salmon and Steelhead Migration Corridors (20°C)**	**Redband or Lahontan Cutthroat Trout (20°C)**	**Salmon and Steelhead Spawning through Fry Emergence**
Mainstem Snake River			
Oregon/Washington Border to Hells Canyon Dam (RM 169 to RM 247.5)	X		October 23-April 15
Hells Canyon Dam to Idaho border (RM 247.5 to RM 409)		X	

TABLE 140B

BENEFICIAL USE DESIGNATIONS - FISH USES
GOOSE AND SUMMER LAKES BASIN, OREGON

Geographic Extent of Use	**Redband or Lahontan Cutthroat Trout (20°C)**	**Cool Water Species (No Salmonid Use)**
Summer Lake Subbasin		
Ft. Rock subbasin*: Silver Creek, Buck Creek and Bridge Creek	X	
Ft. Rock subbasin*: all other streams		X
Alkali Lake subbasin*		X
All other Summer Lake subbasin streams	X	
All other Goose and Summer Lakes basin streams within Oregon	X	
All other Highly Alkaline & Saline Lakes in this basin.		X

* These are 5th field HUC subbasins.

TABLE 190B

BENEFICIAL USE DESIGNATIONS - FISH USES
MALHEUR LAKE BASIN, OREGON

Geographic Extent of Use	**Redband or Lahontan Cutthroat Trout (20°C)**	**Borax Lake Chub**	**Cool Water Species (no salmonid use)**
Alvord Lake Subbasin			
Waters associated with Borax Lake and Lower Borax Lake, including lake outflows, Harney County, Oregon.		X	
Willow Creek from headwaters to the Willow Creek Well.	X		
Little Whitehorse Creek from headwaters to confluence with Whitehorse Creek	X		
Whitehorse Creek from headwaters to confluence with East Channel; including upper tributaries Little Whitehorse Creek, Cottonwood Creek and Doolittle Creek	X		
Antelope Creek from headwaters to confluence with unnamed tributary, approximately 4 RM upstream of confluence with Little Antelope Creek	X		
Denio Creek from headwaters to mouth	X		
Van Horn Creek from headwaters to mouth	X		
Group of streams NE of Alvord Desert: Pike Creek, Little Alvord Creek, Big Alvord Creek, Cottonwood, Willow Creek, Mesquito Creek, Bueno Vista Creek, and Little McCoy Creek	X		
Mann Creek from headwaters to mouth, House Creek from headwaters to mouth	X		
Little Trout Creek and Big Trout Creek from headwaters to confluences with Trout Creek	X		
Segment of Trout Creek from confluence with Big Trout Creek to confluence with Stoney Creek	X		
Pueblo Slough, from Tum-Tum Lake to Van Horn Creek			X (Alvord Chub)
Segment of Trout Creek from confluence with Stoney Creek to approx. 12 RM upstream of Alvord Lake; Segment of South Fork Trout Creek from confluence with Trout Creek upstream approx. 2 RM; Alvord Lake			X (Alvord Chub)

All other Alvord Lake subbasin waters			X (no fish use)
All other Malheur Lake Basin Waters (includes the Silver, Silvies, Harney-Malheur, Donner and Blitzen, Guano, Upper Quinn and Thousand-Virgin subbasins)	X		

TABLE 250B

BENEFICIAL USE DESIGNATIONS - FISH USES
OWYHEE BASIN, OREGON

Geographic Extent of Use	**Redband or Lahontan Cutthroat Trout (20°C)**	**Cool Water Species (No Salmonid Use)**
Lower Owyhee River Subbasin		
Mainstem Owyhee River from the mouth to the confluence with Snively Gulch (RM 18).		X
All other Lower Owyhee subbasin waters.	X	
All other Owyhee Basin waters within Oregon	X	

Table 101A

Designated Beneficial Uses
Mainstem Columbia River
(340-41-0101)

Beneficial Uses	Columbia River Mouth to RM 86	Columbia River RM 86 to 309
Public Domestic Water Supply[1]	X	X
Private Domestic Water Supply[1]	X	X
Industrial Water Supply	X	X
Irrigation	X	X
Livestock Watering	X	X
Fish & Aquatic Life[2]	X	X
Wildlife & Hunting	X	X
Fishing	X	X
Boating	X	X
Water Contact Recreation	X	X
Aesthetic Quality	X	X
Hydro Power		X
Commercial Navigation & Transportation	X	X

[1] With adequate pretreatment and natural quality that meets drinking water standards.

[2] See also Table 101B for fish use designations for this river.

Table produced November, 2003

Table 121A

Designated Beneficial Uses
Mainstem Snake River
(340-41-0120)

Beneficial Uses	Snake River RM 176 to 409
Public Domestic Water Supply[1]	X
Private Domestic Water Supply[1]	X
Industrial Water Supply	X
Irrigation	X
Livestock Watering	X
Fish & Aquatic Life[2]	X
Wildlife & Hunting	X
Fishing	X
Boating	X
Water Contact Recreation	X
Aesthetic Quality	X
Hydro Power	X
Commercial Navigation & Transportation	X

[1] With adequate pretreatment and natural quality that meets drinking water standards.

[2] See also Table 102B for fish use designations for this river.

Table produced November, 2003

Table 130A

Designated Beneficial Uses
Deschutes Basin
(340-41-0130)

Beneficial Uses	Deschutes River Main Stem from Mouth to Pelton Regulating Dam	Deschutes River Main Stem from Pelton Regulating Dam to Bend Diversion Dam and for the Crooked River Main Stem	Deschutes River Main Stem above Bend Diversion Dan & for the Metolious River Main Stem	All Other Basin Stems
Public Domestic Water Supply[1]	X	X	X	X
Private Domestic Water Supply[1]	X	X	X	X
Industrial Water Supply	X	X	X	X
Irrigation	X	X	X	X
Livestock Watering	X	X	X	X
Fish & Aquatic Life[2]	X	X	X	X
Wildlife & Hunting	X	X	X	X
Fishing	X	X	X	X
Boating	X	X	X	X
Water Contact Recreation	X	X	X	X
Aesthetic Quality	X	X	X	X
Hydro Power		X		
Commercial Navigation & Transportation				

[1] With adequate pretreatment (filtration and disinfection) and natural quality to meet drinking water standards.

[2] See also Figures 130A and 130B for fish use designations for this basin.

Table produced November, 2003

Table 141A

Designated Beneficial Uses
Goose and Summer Lakes Basin
(340-41-0140)

Beneficial Uses	Goose Lake	Freshwater Lakes & Reservoirs	Highly Alkaline & Saline Lakes	Freshwater Streams
Public Domestic Water Supply[1]		X		X
Private Domestic Water Supply[1]		X		X
Industrial Water Supply		X	X	X
Irrigation		X		X
Livestock Watering	X	X		X
Fish & Aquatic Life[2]	X	X	X	X
Wildlife & Hunting	X	X	X	X
Fishing	X	X	X	X
Boating	X	X	X	X
Water Contact Recreation	X	X	X	X
Aesthetic Quality	X	X	X	X
Hydro Power				
Commercial Navigation & Transportation				

[1] With adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards.

[2] See also Table 140B for fish use designations for this basin.

Table produced November, 2003

Table 151A

Designated Beneficial Uses
Grande Ronde Basin
(340-41-0151)

Beneficial Uses	Main Stem Grande Ronde River (RM 39 to 165)	All Other Basin Waters
Public Domestic Water Supply[1]	X	X
Private Domestic Water Supply[1]	X	X
Industrial Water Supply	X	X
Irrigation	X	X
Livestock Watering	X	X
Fish & Aquatic Life[2]	X	X
Wildlife & Hunting	X	X
Fishing	X	X
Boating	X	X
Water Contact Recreation	X	X
Aesthetic Quality	X	X
Hydro Power	X	X
Commercial Navigation & Transportation		

[1] With adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards.

[2] See also Figures 151A and 151B for fish use designations for this basin.

Table produced November, 2003

Table 160A

Designated Beneficial Uses
Hood Basin
(340-41-0160)

Beneficial Uses	Hood River Basin Streams
Public Domestic Water Supply[1]	X
Private Domestic Water Supply[1]	X
Industrial Water Supply	X
Irrigation	X
Livestock Watering	X
Fish & Aquatic Life[2]	X
Wildlife & Hunting	X
Fishing	X
Boating	X
Water Contact Recreation	X
Aesthetic Quality	X
Hydro Power	X
Commercial Navigation & Transportation	

[1] With adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards.

[2] See also Figures 160A and 160B for fish use designations for this basin.

Table produced November, 2003

Table 170A

Designated Beneficial Use
John Day Basin
(340-41-0170)

Beneficial Uses	John Day River & All Tributaries
Public Domestic Water Supply[1]	X
Private Domestic Water Supply[1]	X
Industrial Water Supply	X
Irrigation	X
Livestock Watering	X
Fish & Aquatic Life[2]	X
Wildlife & Hunting	X
Fishing	X
Boating	X
Water Contact Recreation	X
Aesthetic Quality	X
Hydro Power	
Commercial Navigation & Transportation	

[1] With adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards.

[2] See also Figures 170A and 170B for fish use designations for this basin.

Table produced November, 2003

Table 180A

Designated Beneficial Uses
Klamath Basin
(340-41-0180)

Beneficial Uses	Klamath River from Klamath Lake to Keno Dam (RM 255 to 232.5)	Lost River (Rm 5 to 65) & Lost River Diversion Channel	All Other Basin Waters
Public Domestic Water Supply[1]	X	X	X
Private Domestic Water Supply[1]	X	X	X
Industrial Water Supply	X	X	X
Irrigation	X	X	X
Livestock Watering	X	X	X
Fish & Aquatic Life[2]	X	X	X
Wildlife & Hunting	X	X	X
Fishing	X	X	X
Boating	X	X	X
Water Contact Recreation	X	X	X
Aesthetic Quality	X	X	X
Hydro Power	X		
Commercial Navigation & Transportation	X		

[1] With adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards.

[2] See also Table 180B for fish use designations for this basin.

Table produced November, 2003

Table 190A

Designated Beneficial Uses
Malheur Lake Basin
(340-41-0190)

Beneficial Uses	Natural Lakes	All Rivers & Tributaries
Public Domestic Water Supply[1]		X
Private Domestic Water Supply[1]		X
Industrial Water Supply		X
Irrigation	X	X
Livestock Watering	X	X
Fish & Aquatic Life[2]	X	X
Wildlife & Hunting	X	X
Fishing	X	X
Boating	X	X
Water Contact Recreation	X	X
Aesthetic Quality	X	X
Hydro Power		
Commercial Navigation & Transportation		

[1] With adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards.

[2] See also Table 190B for fish use designations for this basin.

Table produced November, 2003

Table 201A

Designated Beneficial Uses
Malheur River Basin
(340-41-0201)

Beneficial Uses	Malheur River (Namorf to Mouth) Willow Creek (Brogan to Mouth) Bully Creek (Reservoir to Mouth)	Willow Creek (Malheur Reservoir to Brogan) Malheur River (Beulah Dam & Warm Springs Dams to Namorf)	Reservoirs Malheur Bully Creek Beulah Warm Springs	Malheur River & Tributaries Upstream from Reservoirs
Public Domestic Water Supply[1]	X	X	X	X
Private Domestic Water Supply[1]	X	X	X	X
Industrial Water Supply	X	X	X	X
Irrigation	X	X	X	X
Livestock Watering	X	X	X	X
Fish & Aquatic Life[2]	X	X	X	X
Wildlife & Hunting	X	X	X	X
Fishing	X	X	X	X
Boating	X	X	X	X
Water Contact Recreation	X	X	X	X
Aesthetic Quality	X	X	X	X
Hydro Power				
Commercial Navigation & Transportation				

[1] With adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards.

[2] See also Table 201B for fish use designations for this basin.

Table produced November, 2003

Table 220A

Designated Beneficial Uses
Mid Coast Basin
(340-41-0220)

Beneficial Uses	Estuaries & Adjacent Marine Waters	Fresh Waters
Public Domestic Water Supply[1]		X
Private Domestic Water Supply[1]		X
Industrial Water Supply	X	X
Irrigation		X
Livestock Watering		X
Fish & Aquatic Life[2]	X	X
Wildlife & Hunting	X	X
Fishing	X	X
Boating	X	X
Water Contact Recreation	X	X
Aesthetic Quality	X	X
Hydro Power		X
Commercial Navigation & Transportation	X	

[1] With Adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards.

[2] See also Figures 220A and 220B for fish use designations for this basin.

Table produced November, 2003

Table 230A

Designated Beneficial Uses
North Coast Basin
(340-41-0230)

Beneficial Uses	Estuaries and Adjacent Marine Waters	All Other Steams & Tributaries Thereto
Public Domestic Water Supply[1]		X
Private Domestic Water Supply[1]		X
Industrial Water Supply	X	X
Irrigation		X
Livestock Watering		X
Fish & Aquatic Life[2]	X	X
Wildlife & Hunting	X	X
Fishing	X	X
Boating	X	X
Water Contact Recreation	X	X
Aesthetic Quality	X	X
Hydro Power		
Commercial Navigation & Transportation	X	

[1] With Adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards.

[2] See also Figures 230A and 230B for fish use designations for this basin.

Table produced November, 2003

Table 250A

Designated Beneficial Uses
Owyhee Basin
(340-41-0250)

Beneficial Uses	Owyhee River (RM 0-18)	Owyhee River (RM 18-Dam)	Reservoirs Antelope Cow Creek Owyhee	Owyhee River & Tributaries Upstream from Owyhee Reservior	Designated Scenic Waterway[3]
Public Domestic Water Supply[1]	X	X	X	X	X
Private Domestic Water Supply[1]	X	X	X	X	X
Industrial Water Supply	X	X	X	X	
Irrigation	X	X	X	X	
Livestock Watering	X	X	X	X	X
Fish & Aquatic Life[2]	X	X	X	X	X
Wildlife & Hunting	X	X	X	X	X
Fishing	X	X	X	X	X
Boating	X	X	X	X	X
Water Contact Recreation	X	X	X	X	X
Aesthetic Quality	X	X	X	X	X
Hydro Power					
Commercial Navigation & Transportation					

[1] With adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards.

[2] See also Table 250B for fish use designations for this basin.

[3] The mainstem of the South Fork of the Owyhee River from the Oregon-Idaho River border to Three Forks (the confluence of the North, Middle and South Forks Owyhee River) and the mainstem Owyhee River form Crooked Creek (river mile 22) to the mouth of Birch Creek (river mile 76) is designated by statute as a Scenic Waterway.

Table produced November, 2003

Table 260A

Designated Beneficial Uses
Powder/Burnt Basin
(340-41-0260)

Beneficial Uses	All Basin Waters
Public Domestic Water Supply[1]	X
Private Domestic Water Supply[1]	X
Industrial Water Supply	X
Irrigation	X
Livestock Watering	X
Fish & Aquatic Life[2]	X
Wildlife & Hunting	X
Fishing	X
Boating	X
Water Contact Recreation	X
Aesthetic Quality	X
Hydro Power	
Commercial Navigation & Transportation	

[1] With adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards.

[2] See also Table 260B for fish use designations for this basin.

Table produced November, 2003

Table 271A

Designated Beneficial Uses
Rogue Basin
(340-41-0271)

Beneficial Uses	Rogue River Estuary & Adjacent Marine Waters	Rogue River Main Stem from Estuary to Lost Creek Dam	Rogue River Main Stem above Lost Dam & Tributaries	Bear Creek Main Stem	All Other Tributaries to Rogue River & Bear Creek
Public Domestic Water Supply[1]		X	X	*	X
Private Domestic Water Supply[1]		X	X		X
Industrial Water Supply	X	X	X	X	X
Irrigation		X	X	X	X
Livestock Watering		X	X	X	X
Fish & Aquatic Life[2]	X	X	X	X	X
Wildlife & Hunting	X	X	X	X	X
Fishing	X	X	X	X	X
Boating	X	X	X	X	X
Water Contact Recreation	X	X	X	X	X
Aesthetic Quality	X	X	X	X	X
Hydro Power			X		X
Commercial Navigation & Transportation	X	X			

[1] With adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards

[2] See also Figures 271A and 271B for fish use designations for this basin.

* Designation for this use is presently under study

Table produced November, 2003

Table 286A

Designated Beneficial Uses
Sandy Basin
(340-41-0286)

Beneficial Uses	Streams Forming Waterfalls Near Columbia River Highway	Sandy River	Bull Run River and all Tributaries	All Other Tributaries to Sandy River
Public Domestic Water Supply[1]		X	X	X
Private Domestic Water Supply[1]		X		X
Industrial Water Supply		X		X
Irrigation		X		X
Livestock Watering		X		X
Fish & Aquatic Life[2]	X	X	X	X
Wildlife & Hunting	X	X		X
Fishing	X	X		X
Boating		X		X
Water Contact Recreation	X	X		X
Aesthetic Quality	X	X	X	X
Hydro Power		X	X	X
Commercial Navigation & Transportation				

[1] With adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards.

[2] See also Figures 286A and 286B for fish use designations for this basin.

Table produced November, 2003

Table 300A

Designated Beneficial Uses
South Coast Basin
(340-41-0300)

Beneficial Uses	Estuaries & Adjacent Maine Waters	All Steams & Tributaries Thereto
Public Domestic Water Supply[1]		X
Private Domestic Water Supply[1]		X
Industrial Water Supply	X	X
Irrigation		X
Livestock Watering		X
Fish & Aquatic Life[2]	X	X
Wildlife & Hunting	X	X
Fishing	X	X
Boating	X	X
Water Contact Recreation	X	X
Aesthetic Quality	X	X
Hydro Power		X
Commercial Navigation & Transportation	X	

[1] With adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards.

[2] See also Figures 300A and 300B for fish use designations for this basin.

Table produced November, 2003

Table 310A

Designated Beneficial Uses
Umatilla Basin
(340-41-0310)

Beneficial Uses	Umatilla Subbasin	Willow Creek Subbasin
Public Domestic Water Supply[1]	X	X
Private Domestic Water Supply[1]	X	X
Industrial Water Supply	X	X
Irrigation	X	X
Livestock Watering	X	X
Fish & Aquatic Life[2]	X	X
Wildlife & Hunting	X	X
Fishing	X	X
Boating	X	X (at mouth)
Water Contact Recreation	X	X
Aesthetic Quality	X	X
Hydro Power	X	X
Commercial Navigation & Transportation		

[1] With adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards.

[2] See also Figures 310A and 310B for fish use designations for this basin.

Table produced November, 2003

Table 320A

Designated Beneficial Uses
Umpqua Basin
(340-41-0320)

Beneficial Uses	Umpqua R. Estuary to Head of Tidewater & Adjacent Marine Waters	Umpqua R. Main from Head of Tidewater to Confluence of N. & S. Umpqua Rivers	North Umpqua River Main Stem	South Umpqua River Main Stem	All Other Tributaries to Umpqua, North & South Umpqua Rivers
Public Domestic Water Supply[1]		X	X	X	X
Private Domestic Water Supply[1]		X	X	X	X
Industrial Water Supply	X	X	X	X	X
Irrigation		X	X	X	X
Livestock Watering		X	X	X	X
Fish & Aquatic Life[2]	X	X	X	X	X
Wildlife & Hunting	X	X	X	X	X
Fishing	X	X	X	X	X
Boating	X	X	X	X	X
Water Contact Recreation	X	X	X	X	X
Aesthetic Quality	X	X	X	X	X
Hydro Power			X	X	X
Commercial Navigation & Transportation	X				

[1] With adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards.

[2] See also Figures 320A and 320B for fish use designations for this basin.

Table produced November, 2003

Table 330A

Designated Beneficial Uses
Walla Walla Basin
(340-41-0330)

Beneficial Uses	Walla Walla River Main Stem from Confluence of North & South Forks to State Line	All Other Basin Streams
Public Domestic Water Supply[1]	X	X
Private Domestic Water Supply[1]	X	X
Industrial Water Supply	X	
Irrigation	X	X
Livestock Watering	X	X
Fish & Aquatic Life[2]	X	X
Wildlife & Hunting	X	X
Fishing	X	X
Boating	X	X
Water Contact Recreation	X	X
Aesthetic Quality	X	X
Hydro Power		X
Commercial Navigation & Transportation		

[1] With adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards.

[2] See also Figures 310A and 310B for fish use designations for this basin.

Table produced November, 2003

Table 340A

Designated Beneficial Uses
Willamette Basin
(340-041-0340)

Beneficial Uses	Willamette River Tributaries						Main Stem Willamette River			
	Clackamas River	Molalla River	Santiam River	McKenzie River	Tualatin River	All Other Streams & Tributaries	Mouth to Willamette Falls, Including Multnomah Channel	Willamette Falls to Newberg	Newberg to Salem	Salem to Coast Fork
Public Domestic Water Supply[1]	X	X	X	X	X	X	X	X	X	X
Private Domestic Water Supply[1]	X	X	X	X	X	X	X	X	X	X
Industrial Water Supply	X	X	X	X	X	X	X	X	X	X
Irrigation	X	X	X	X	X	X	X	X	X	X
Livestock Watering	X	X	X	X	X	X	X	X	X	X
Fish & Aquatic Life[2]	X	X	X	X	X	X	X	X	X	X
Wildlife & Hunting	X	X	X	X	X	X	X	X	X	X
Fishing	X	X	X	X	X	X	X	X	X	X
Boating	X	X	X	X	X	X	X	X	X	X
Water Contact Recreation	X	X	X	X	X	X	X	X[3]	X	X
Aesthetic Quality	X	X	X	X	X	X	X	X	X	X
Hydro Power	X	X	X	X	X	X	X	X		
Commercial Navigation & Transportation							X	X	X	

[1] With adequate pretreatment and natural quality that meets drinking water standards.

[2] See also Figures 340A and 340B for fish use designations for this basin.

[3] Not to conflict with commercial activities in Portland Harbor.

Table produced November, 2003

*Figure 130A: Fish Use Designations**
Deschutes Basin, Oregon

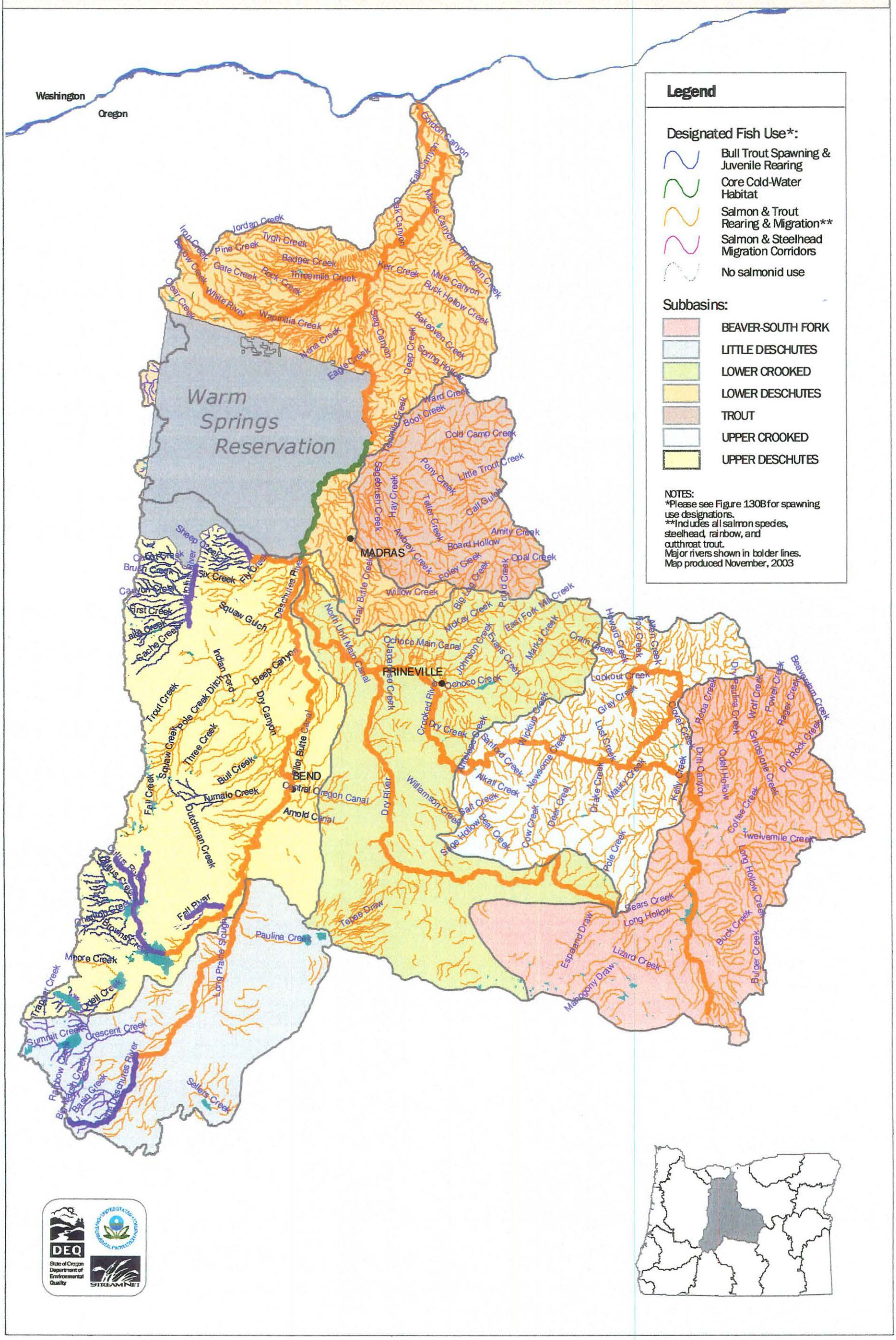


Figure 130B: Salmon and Steelhead Spawning Use Designations Deschutes Basin, Oregon*

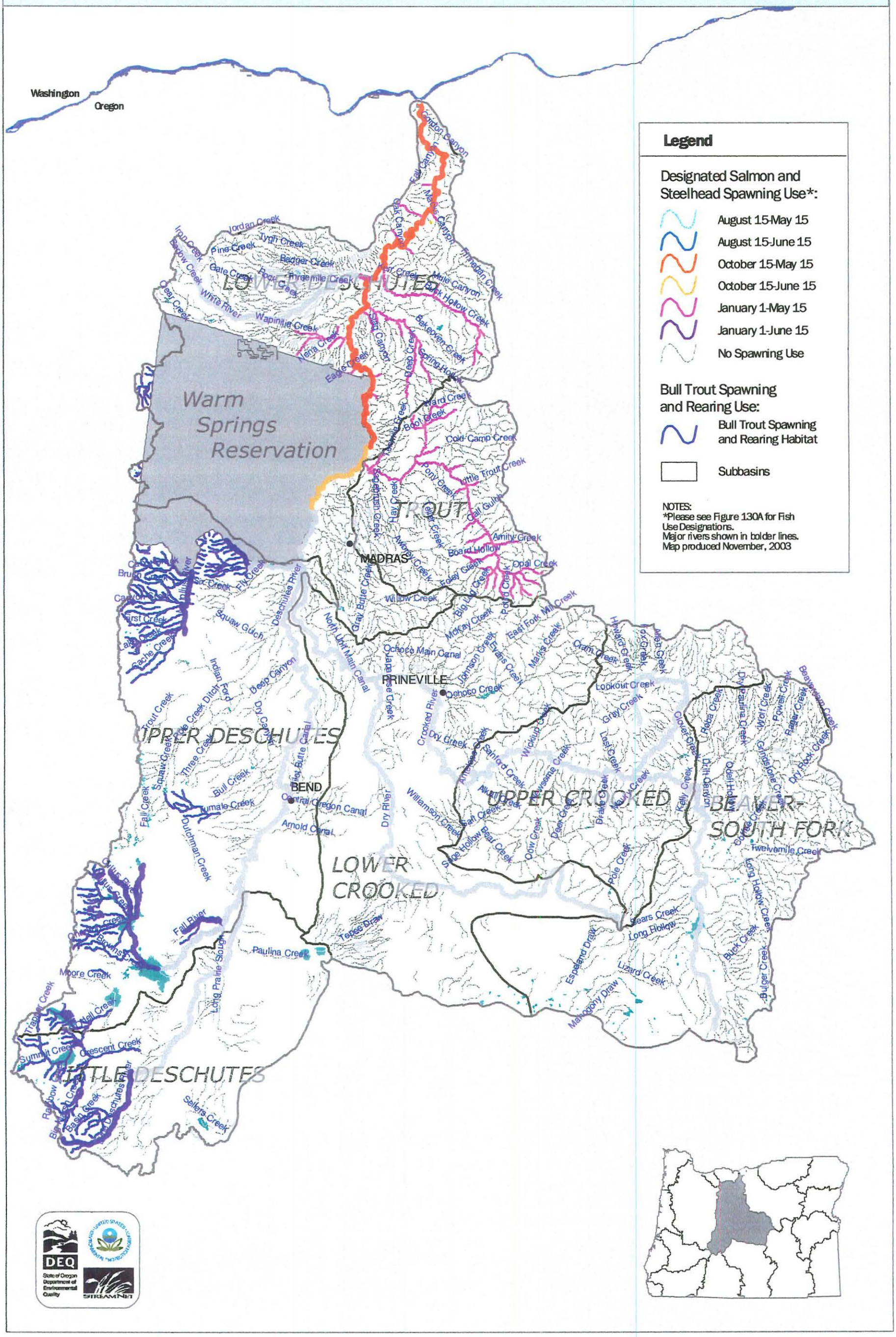


*Figure 151A: Fish Use Designations**
Grande Ronde Basin, Oregon

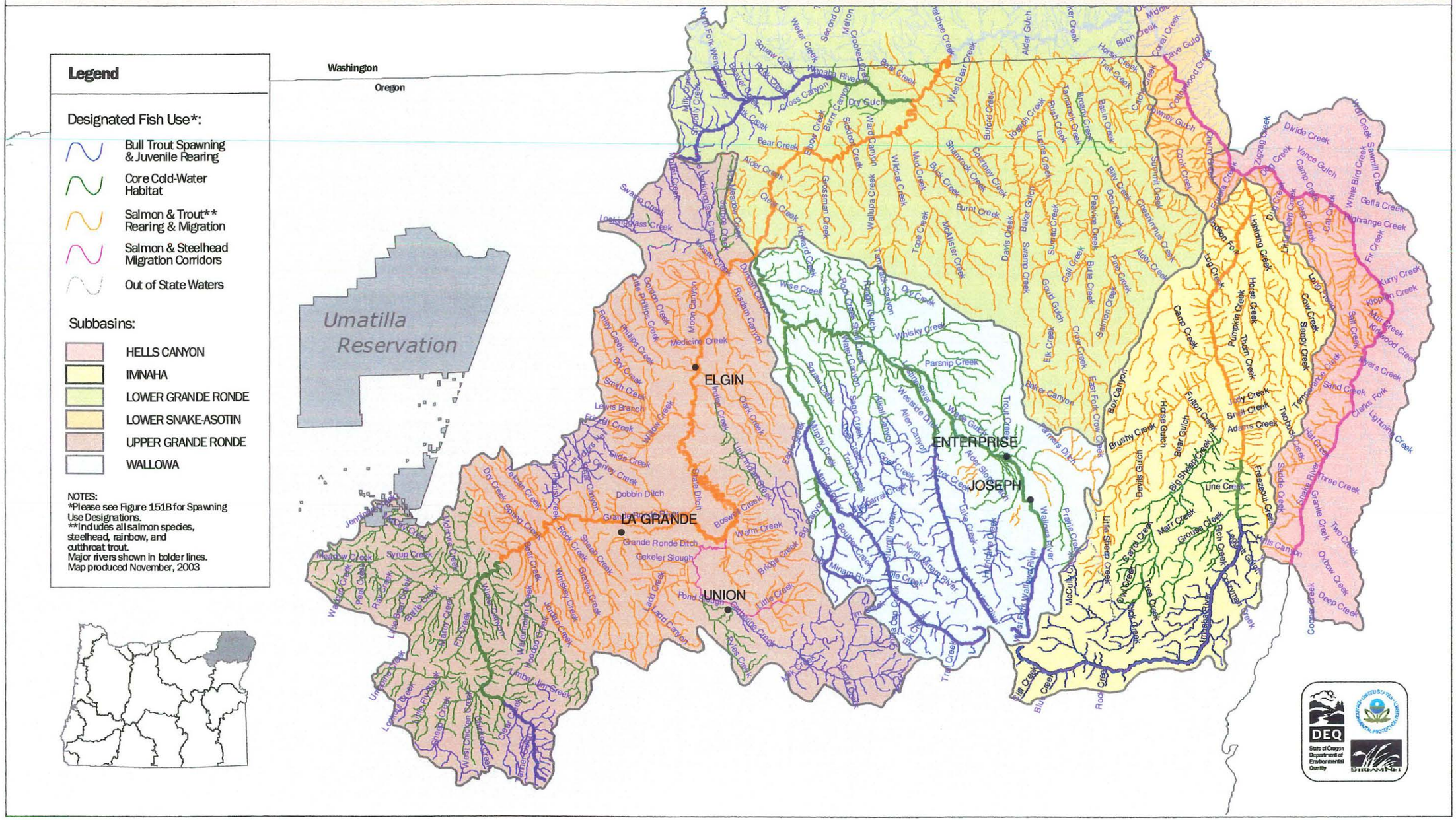


*Figure 151B: Salmon and Steelhead Spawning Use Designations**
Grande Ronde Basin, Oregon

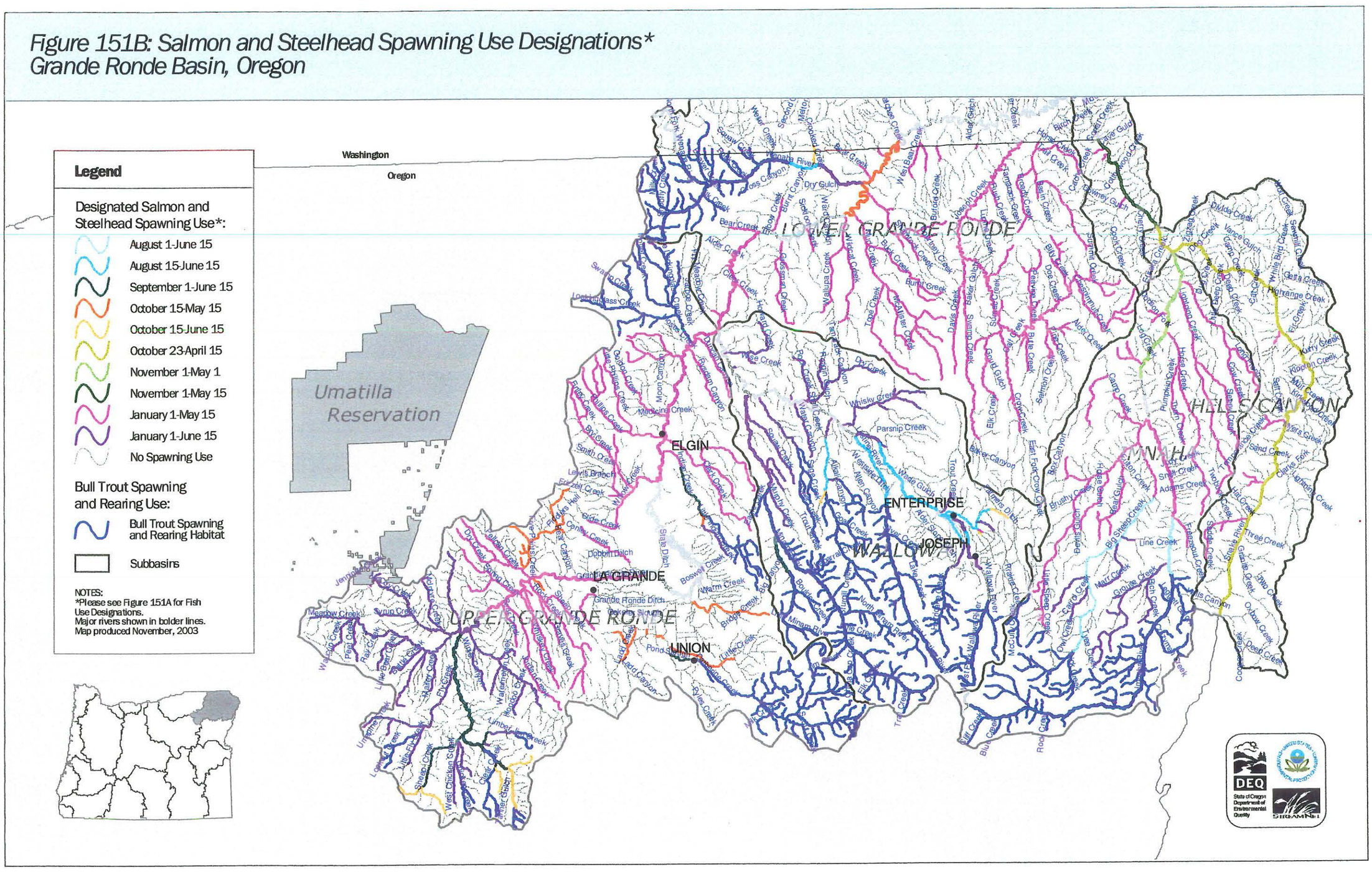


*Figure 160A: Fish Use Designations**
Hood Basin, Oregon

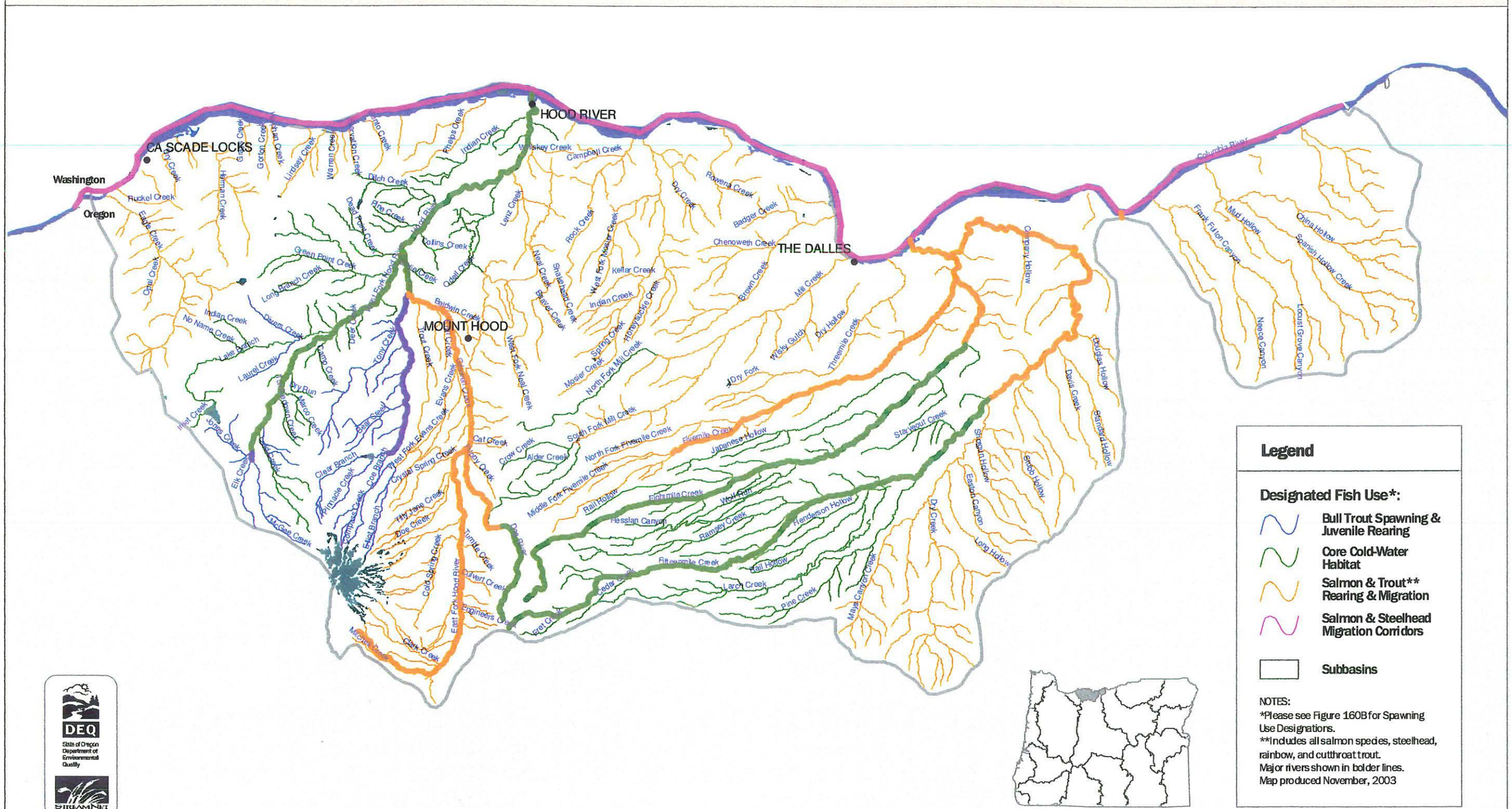


*Figure 160B: Salmon and Steelhead Spawning Use Designations**
Hood Basin, Oregon

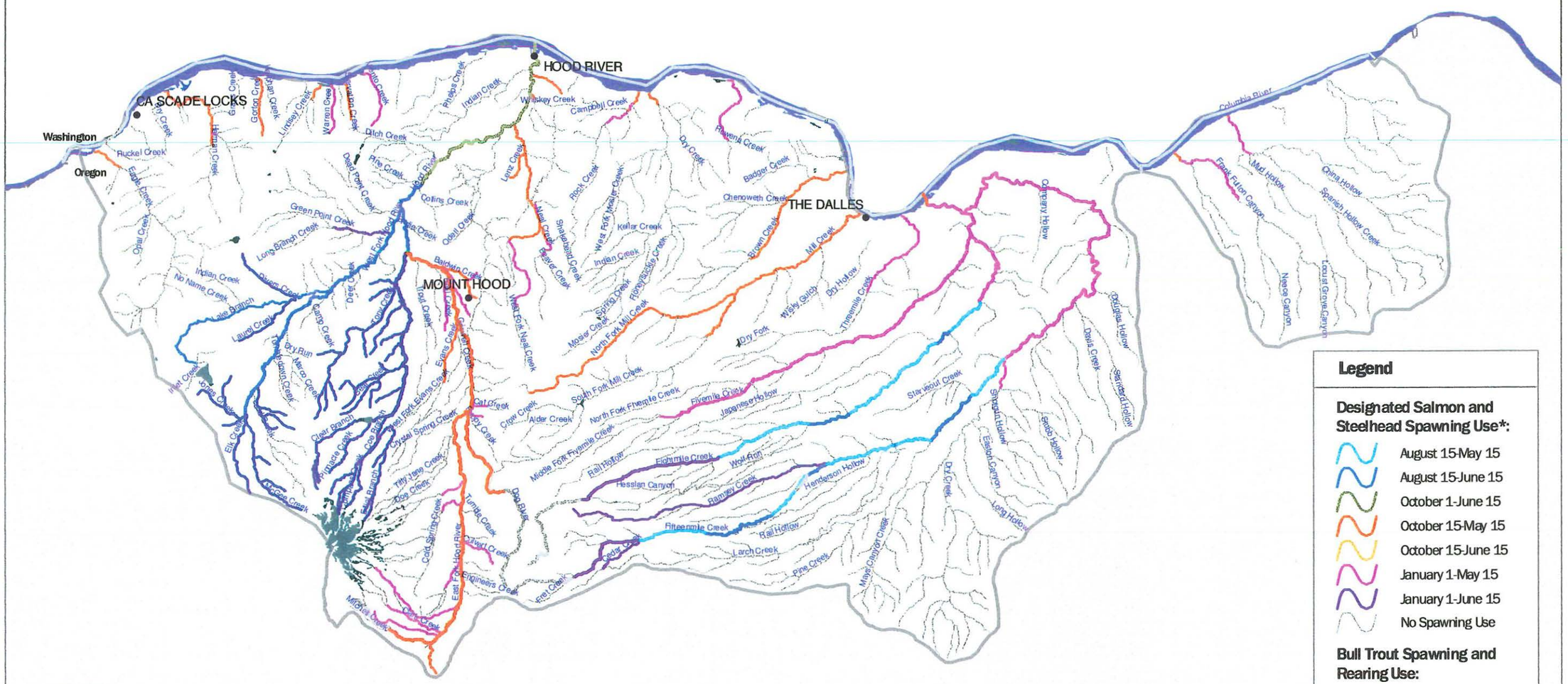


*Figure 170A: Fish Use Designations**
John Day Basin, Oregon

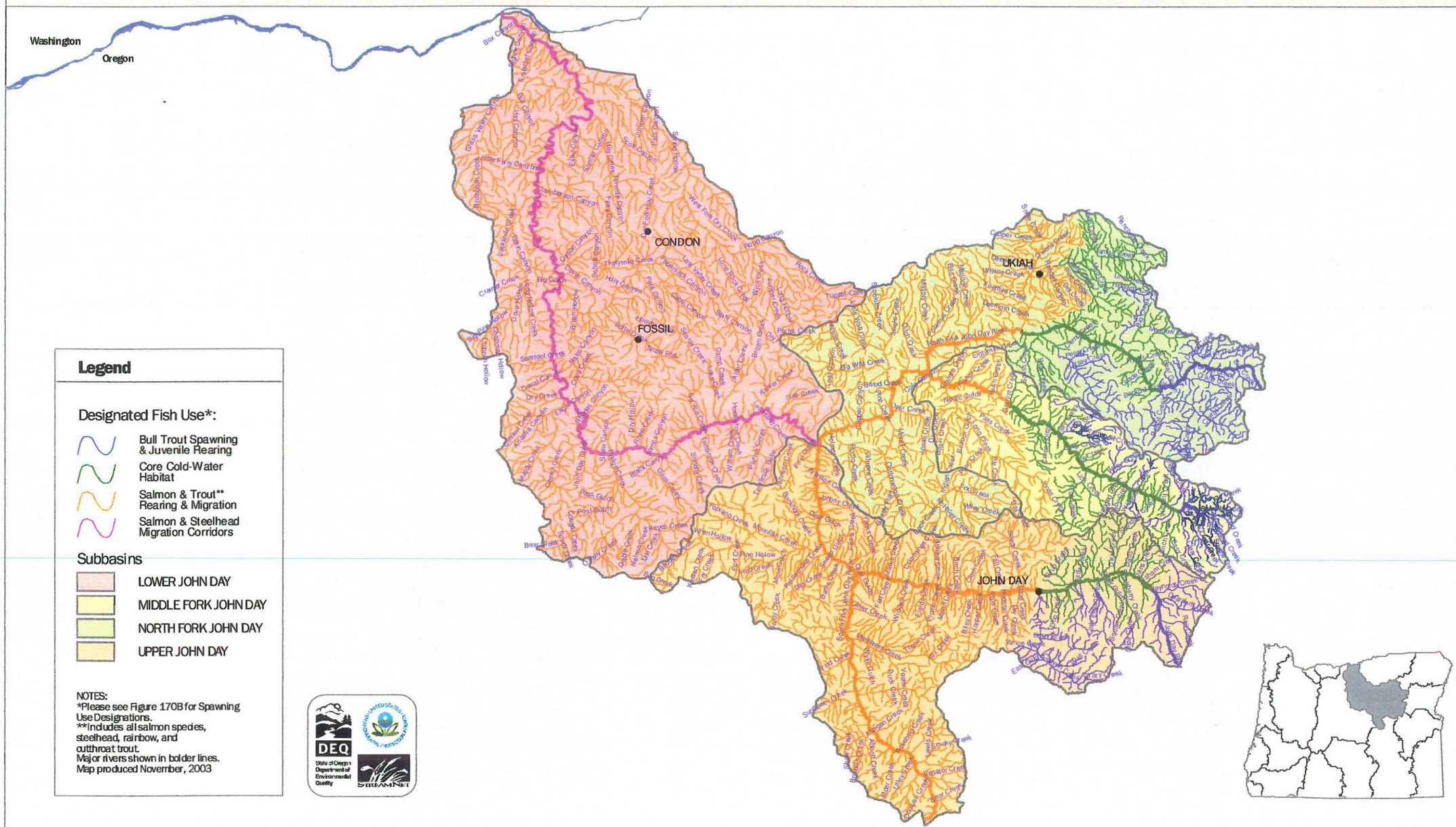


*Figure 170B: Salmon and Steelhead Spawning Use Designations**
John Day Basin, Oregon

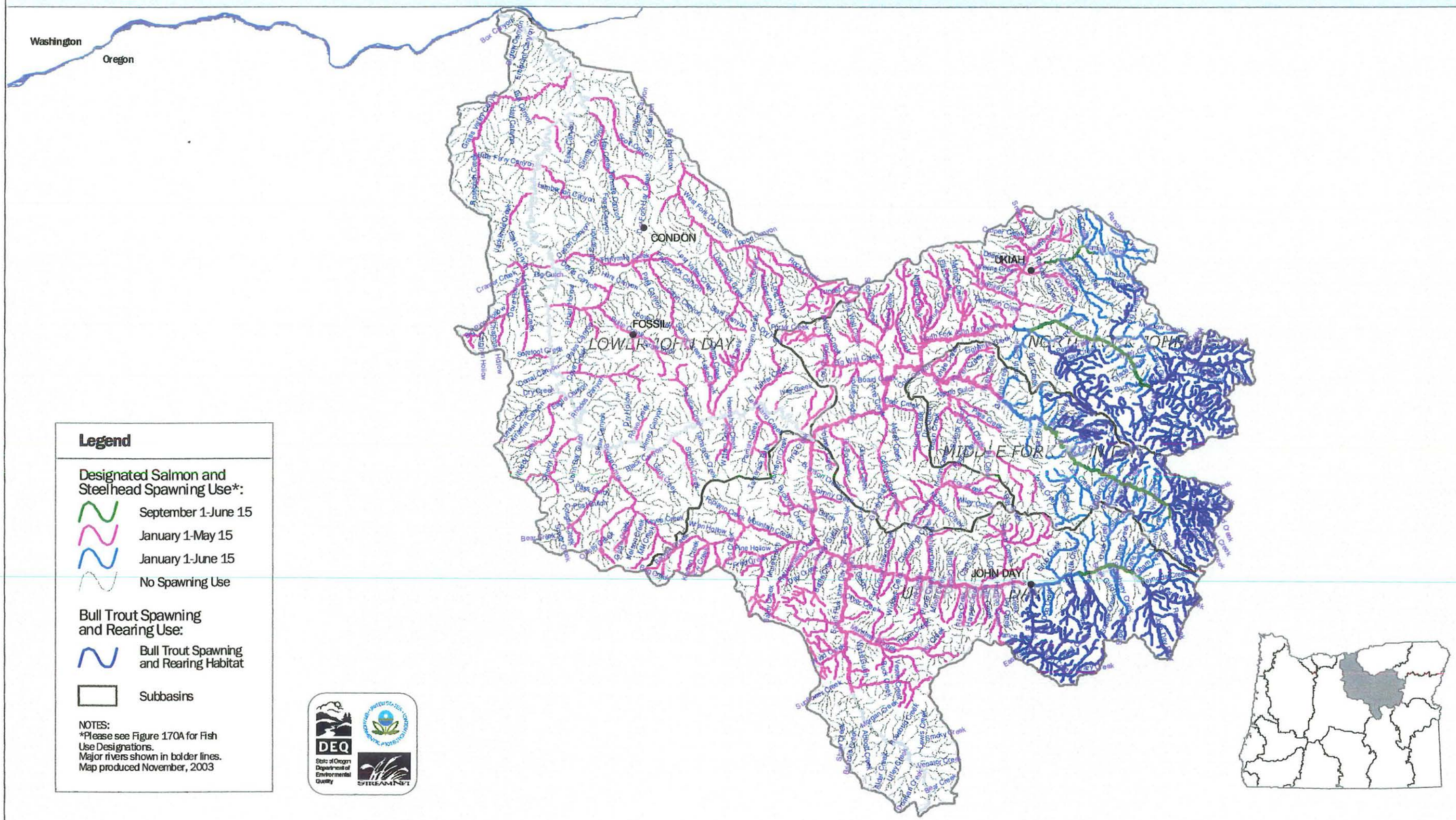


Figure 180A: Fish Use Designations
Klamath Basin, Oregon

Legend

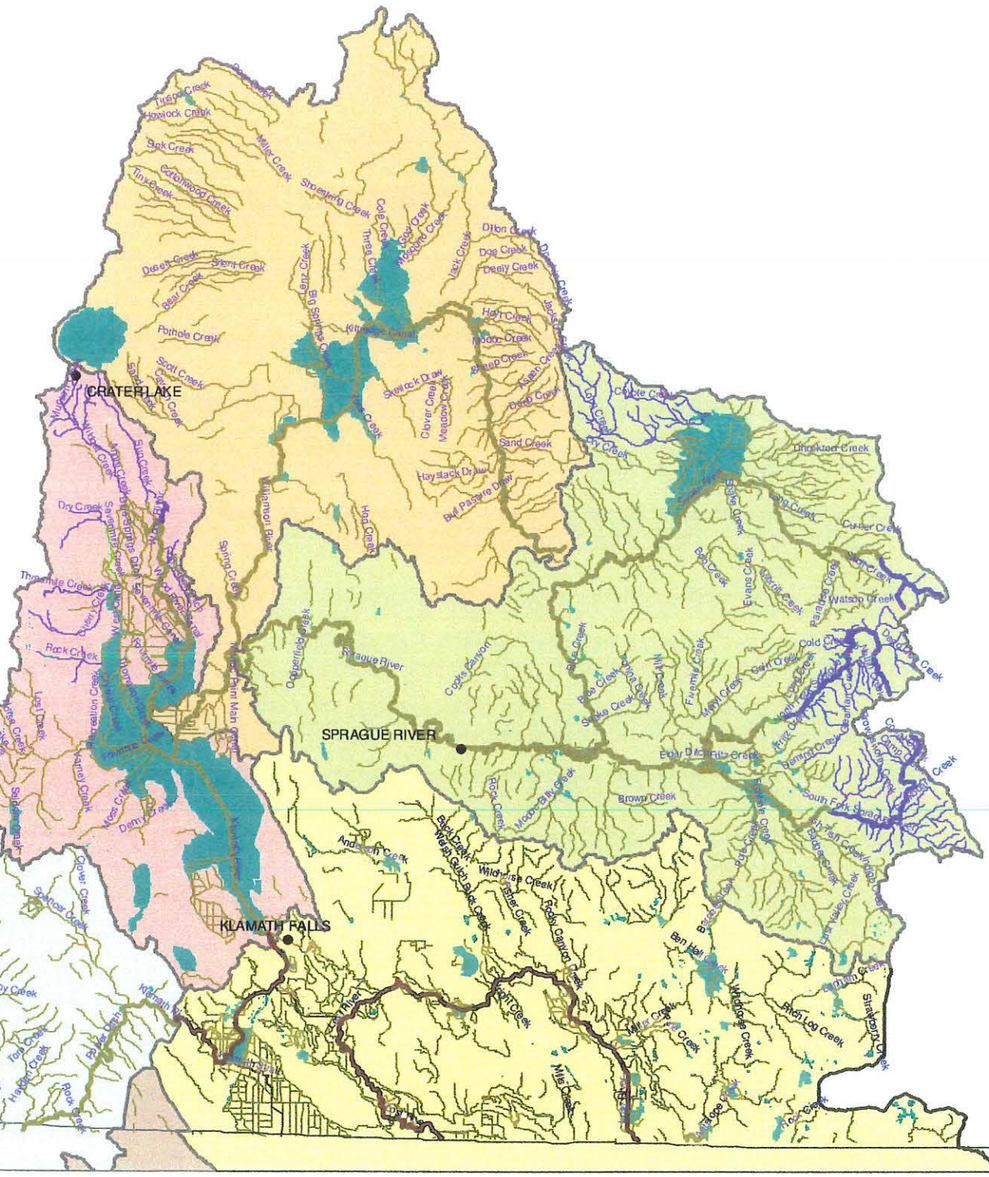
Designated Fish Use:

- Bull Trout Spawning & Juvenile Rearing
- Core Cold-Water Habitat
- Redband or Lahontan Cutthroat Trout
- Cool Water Species (no salmonid use)

Subbasins

- BUTTE
- LOST
- SPRAGUE
- UPPER KLAMATH
- UPPER KLAMATH LAKE
- WILLIAMSON

NOTES:
Major rivers shown in bolder lines.
Map produced November, 2003



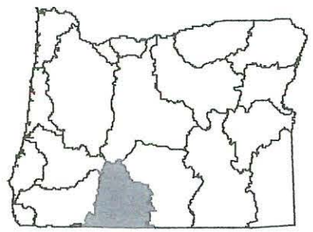


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Figure 201A: Fish Use Designations
Malheur River Basin, Oregon

Legend

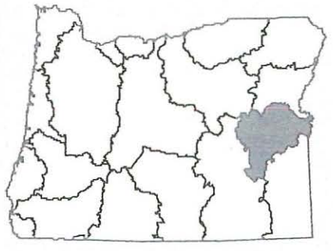
Designated Fish Use:

- Bull Trout Spawning & Juvenile Rearing
- Core Cold-Water Habitat
- Redband or Lahontan Cutthroat Trout
- Cool Water Species (no salmonid use)
- Out of State Waters

Subbasins:

- BULLY
- LOWER MALHEUR
- UPPER MALHEUR
- SNAKE
- WILLOW

NOTES:
Major rivers shown in bolder lines.
Map produced November, 2003



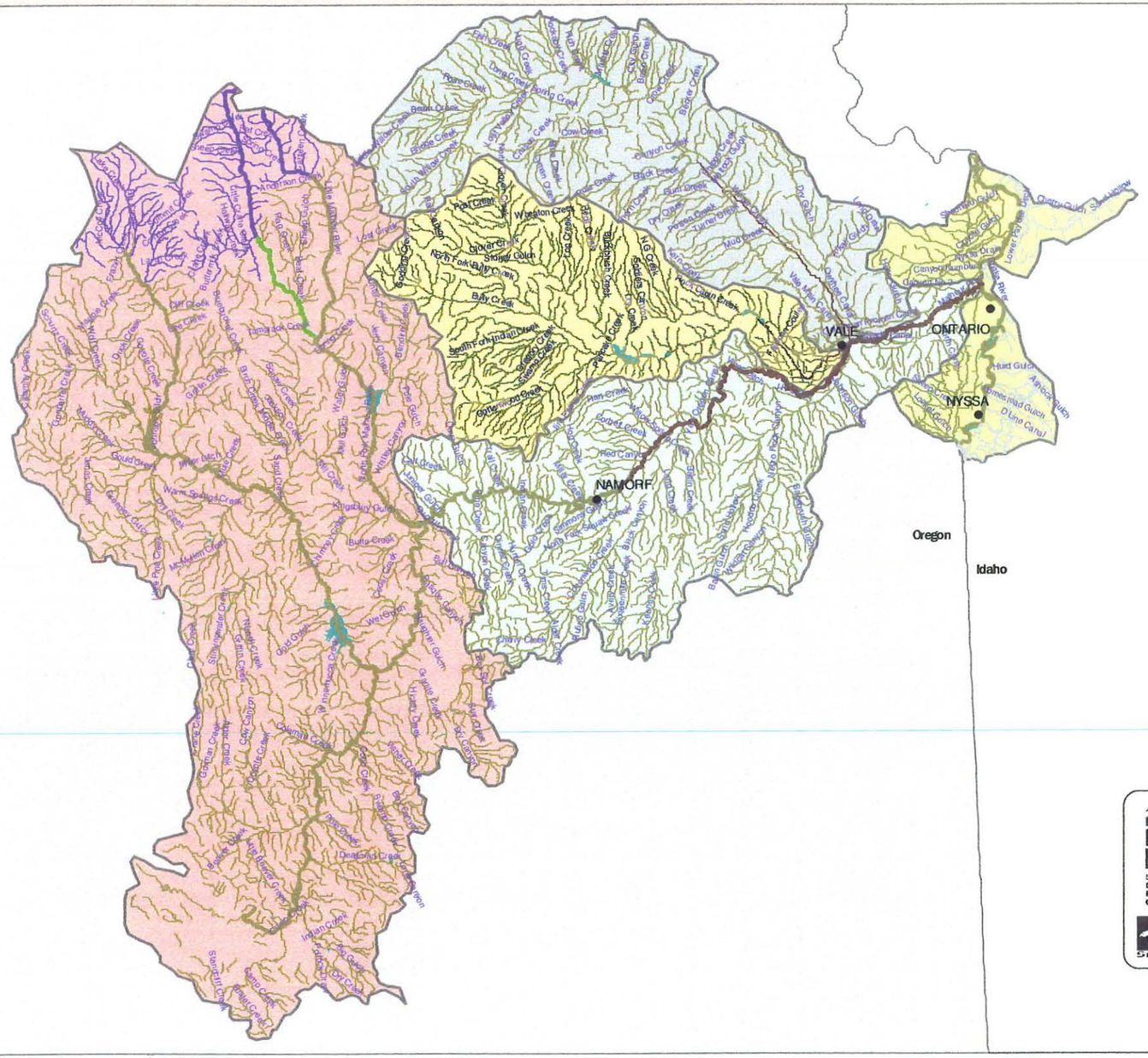


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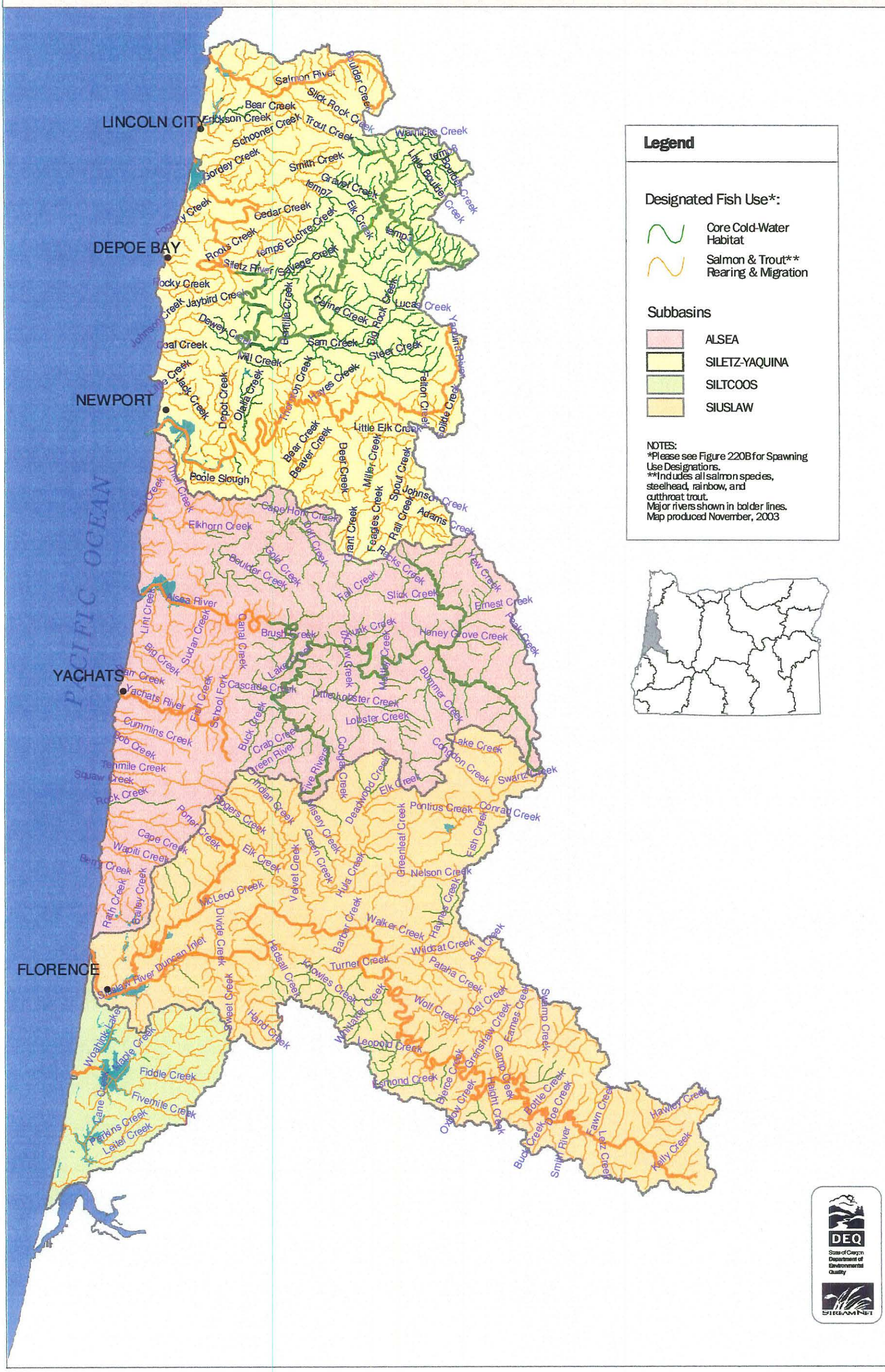
*Figure 220A: Fish Use Designations**
Mid Coast Basin, Oregon



Legend

Designated Fish Use*:

- Core Cold-Water Habitat
- Salmon & Trout** Rearing & Migration

Subbasins

- ALSEA
- SILETZ-YAQUINA
- SILTCOOS
- SIUSLAW

NOTES:
*Please see Figure 220B for Spawning Use Designations.
**Includes all salmon species, steelhead, rainbow, and cutthroat trout.
Major rivers shown in bolder lines.
Map produced November, 2003

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*Figure 220B: Salmon and Steelhead Spawning Use Designations**
Mid Coast Basin, Oregon

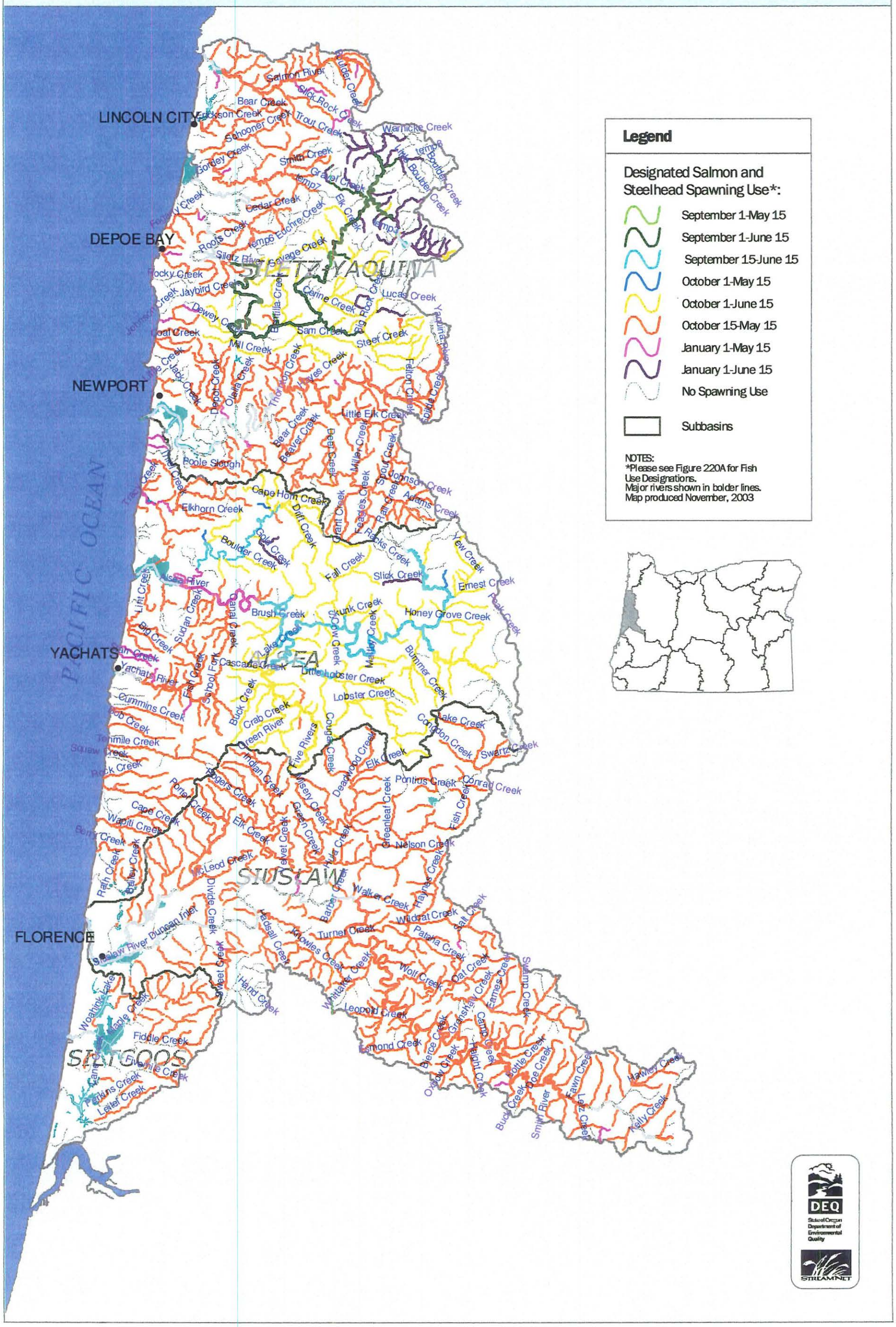


*Figure 230A: Fish Use Designations**
North Coast Basin, Oregon

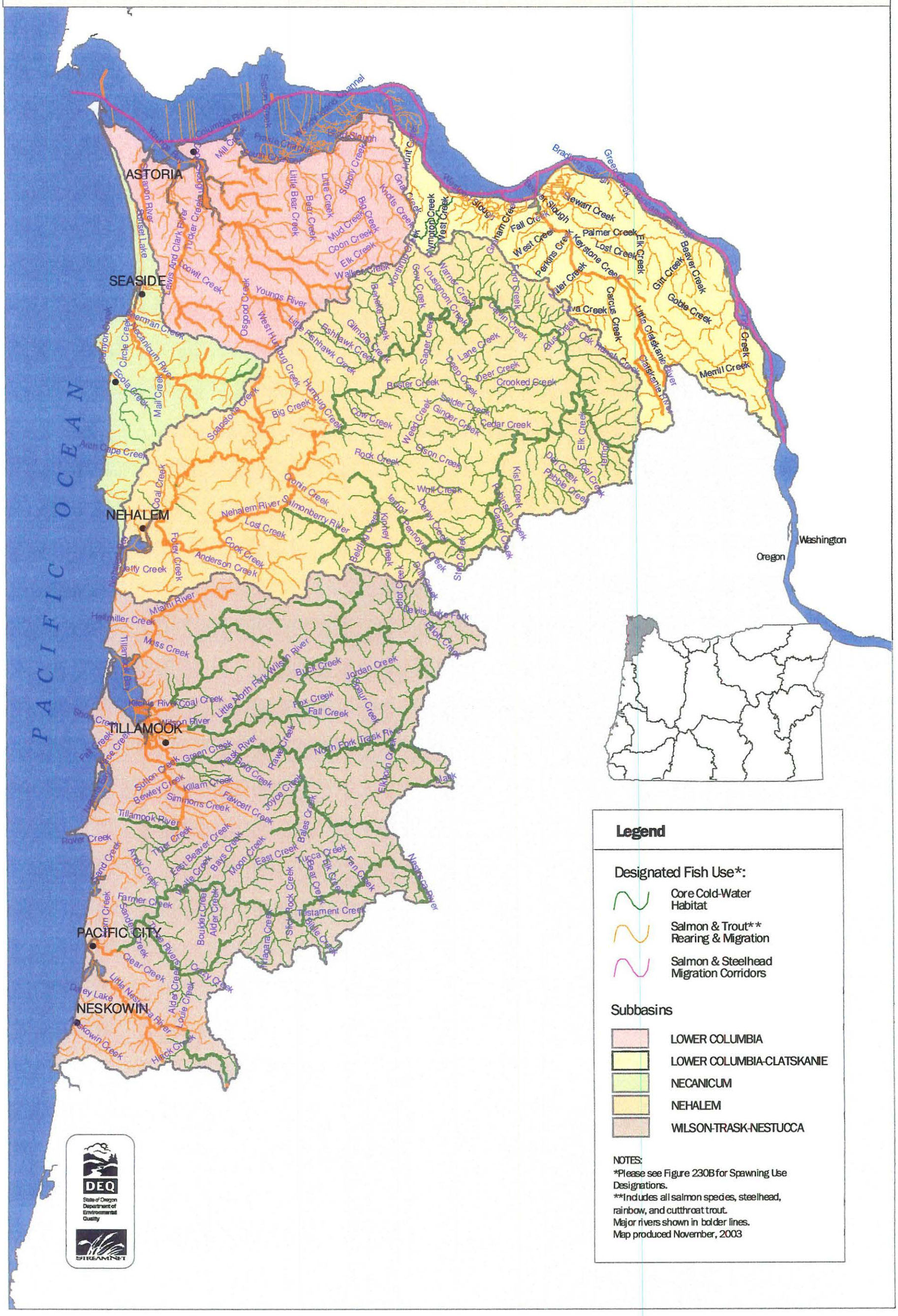


*Figure 230B: Salmon and Steelhead Spawning Use Designations**
North Coast Basin, Oregon

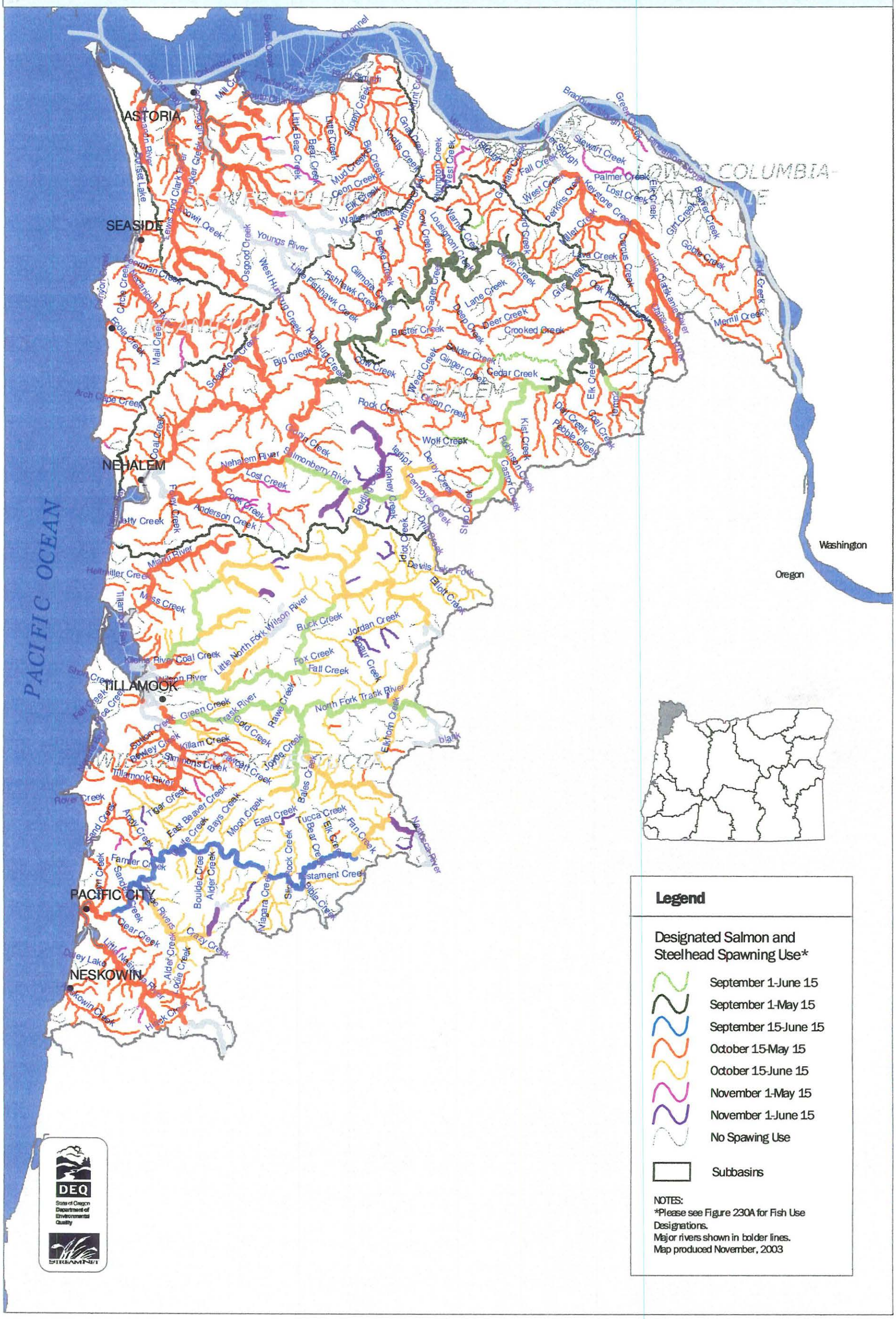


Figure 260A: Fish Use Designations
Powder Basin, Oregon

Legend

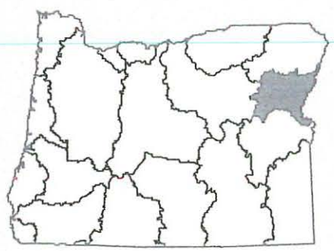
Designated Fish Use:

- Bull Trout Spawning & Juvenile Rearing
- Redband or Lahontan Cutthroat Trout
- Out of State Waters

Subbasins:

- BROWNLEE RESERVOIR
- BURNT
- POWDER

NOTES:
Major rivers shown in bolder lines.
Map produced November, 2003



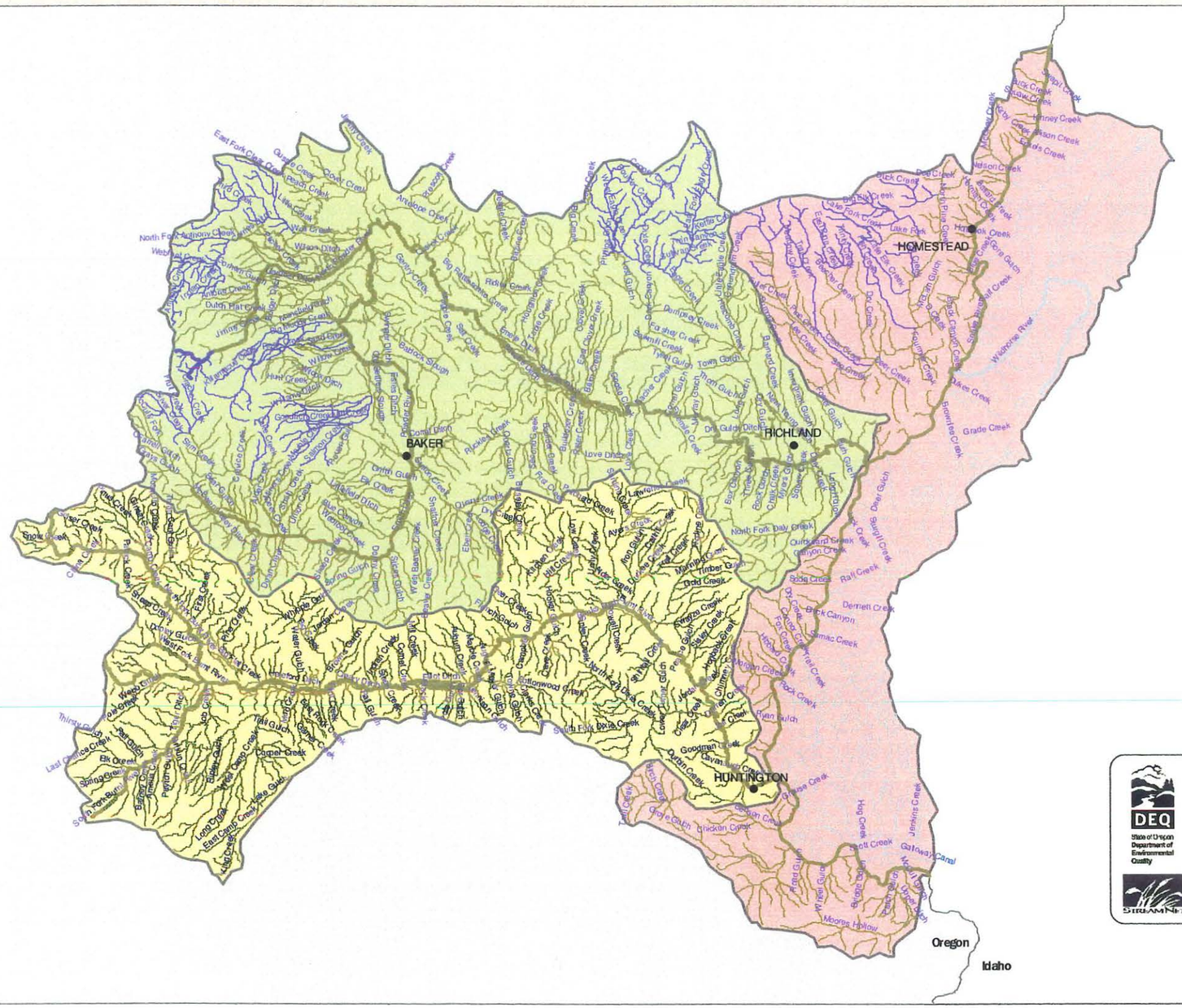


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*Figure 271A: Fish Use Designations**
Rogue Basin, Oregon

*Figure 271B: Salmon and Steelhead Spawning Use Designations**
Rogue Basin, Oregon

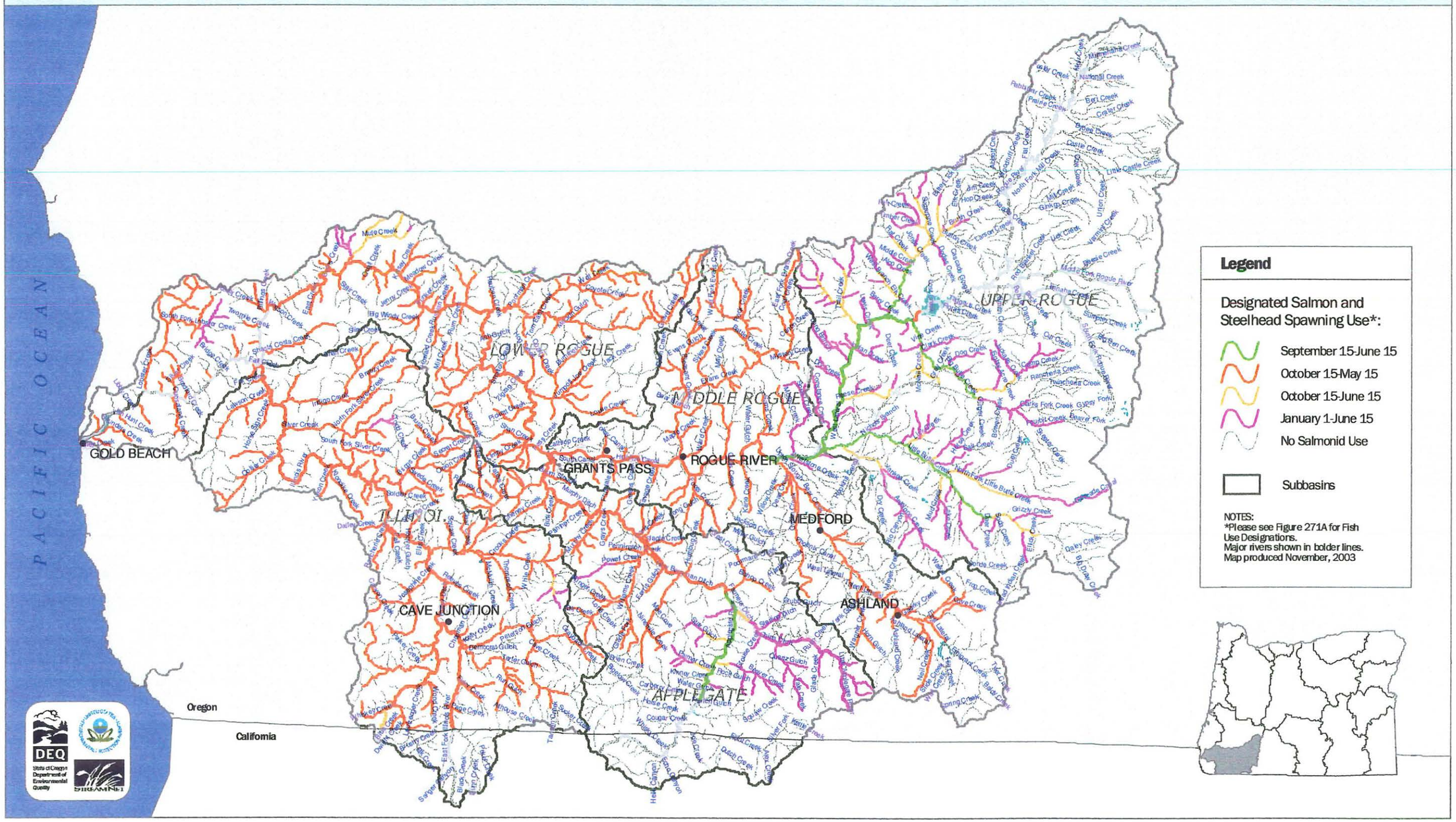
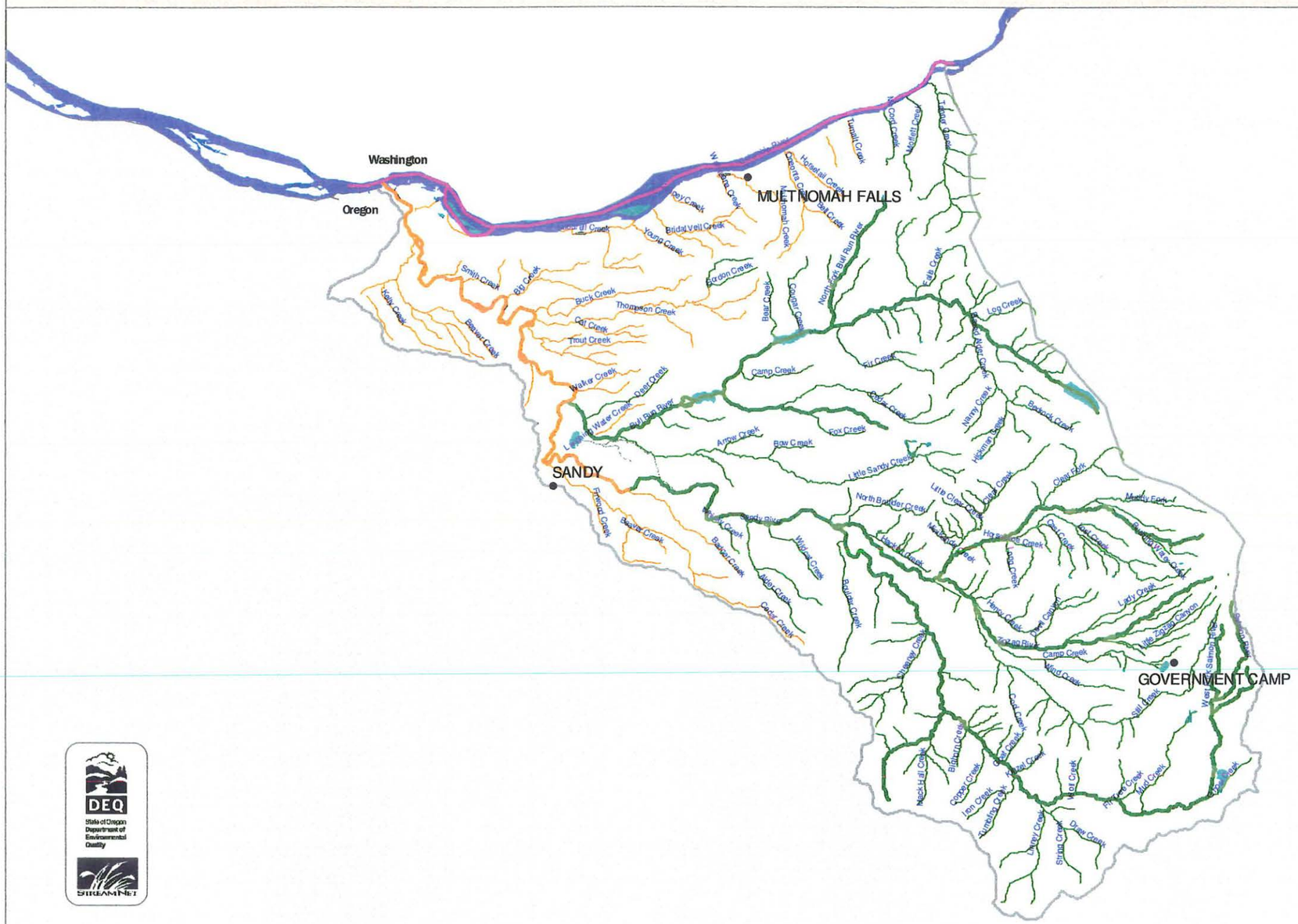


Figure 286A: Fish Use Designations Sandy Basin, Oregon*



Legend

Designated Fish Use*:

- Core Cold-Water Habitat
- Salmon & Trout** Rearing & Migration
- Salmon & Steelhead Migration Corridors
- No salmonid use

Subbasins

NOTES:
*Please see Figure 286B for Spawning Use Designations.
**Includes all salmon species, steelhead, rainbow, and cutthroat trout.
Major rivers shown in bolder lines.
Map produced November, 2003

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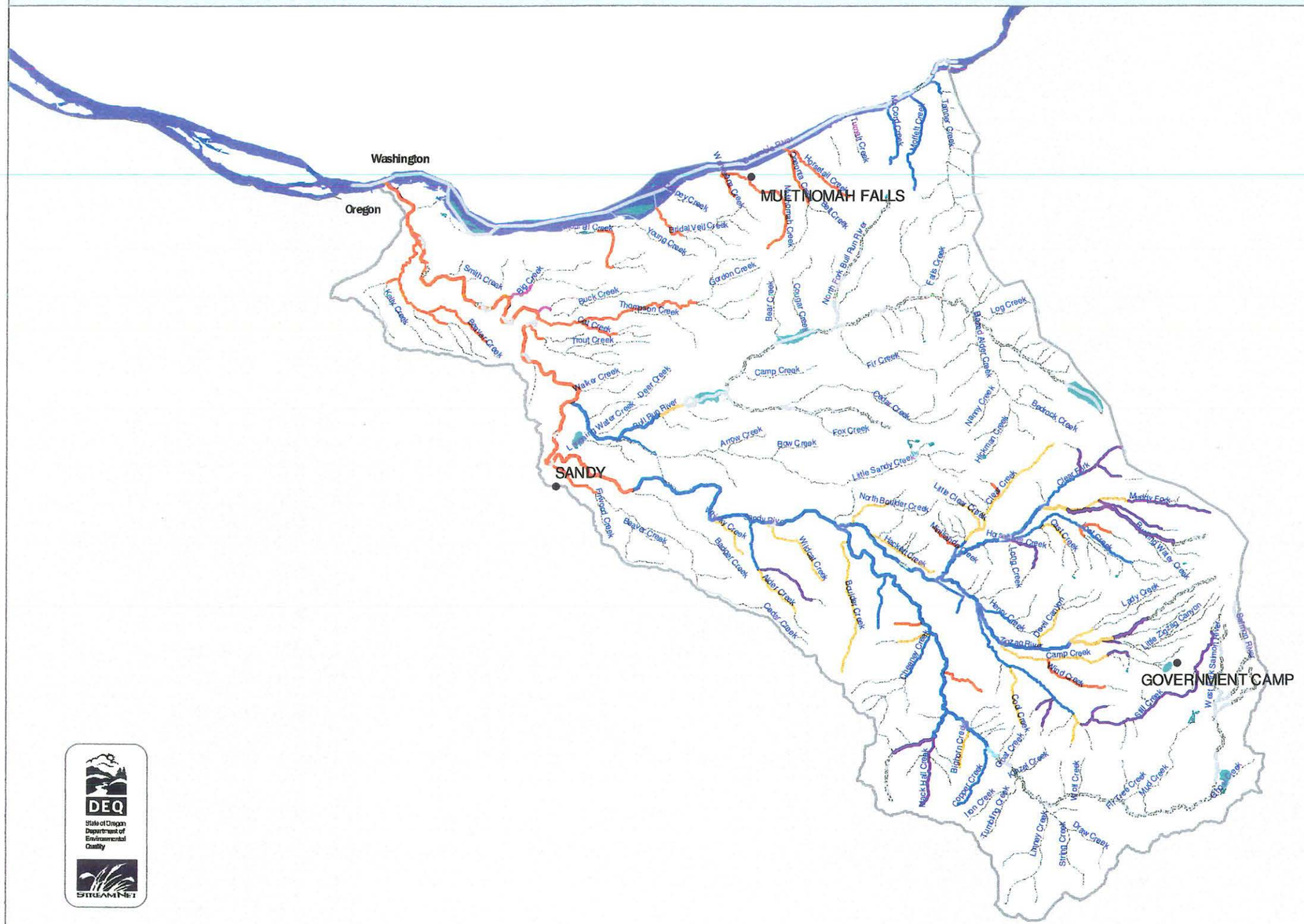
*Figure 286B: Salmon and Steelhead Spawning Use Designations**
Sandy Basin, Oregon



Legend

Designated Salmon and Steelhead Spawning Use*:

- August 15-May 15
- August 15-June 15
- October 15-May 15
- October 15-June 15
- January 1-May 15
- January 1-June 15
- No Spawning Use

Subbasins

NOTES:
*Please see Figure 286A for Fish Use Designations.
Major rivers shown in bolder lines.
Map produced November, 2003

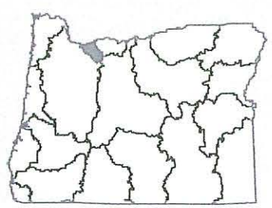


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*Figure 300A: Fish Use Designations**
South Coast Basin, Oregon

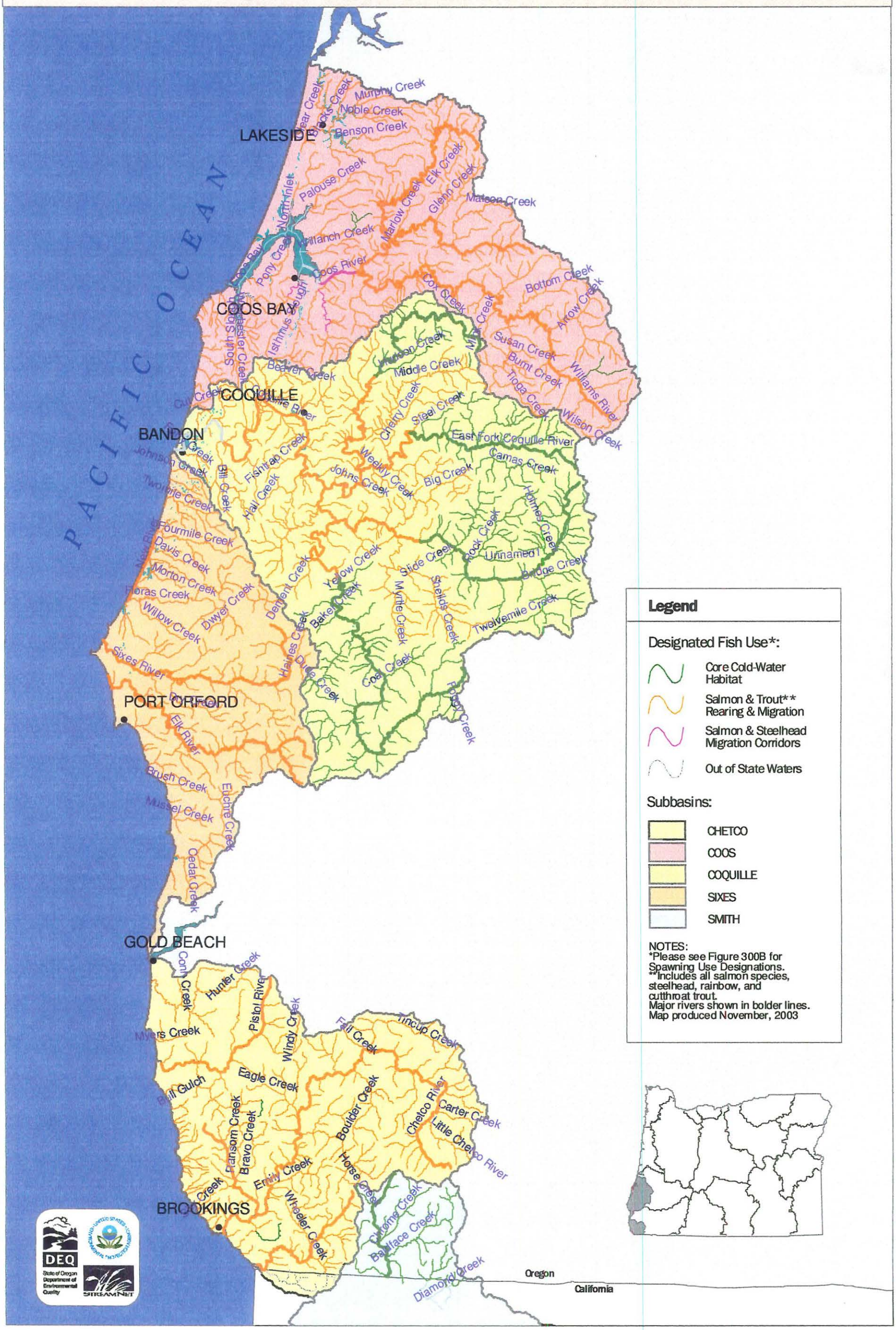


*Figure 300B: Salmon and Steelhead Spawning Use Designations**
South Coast Basin, Oregon

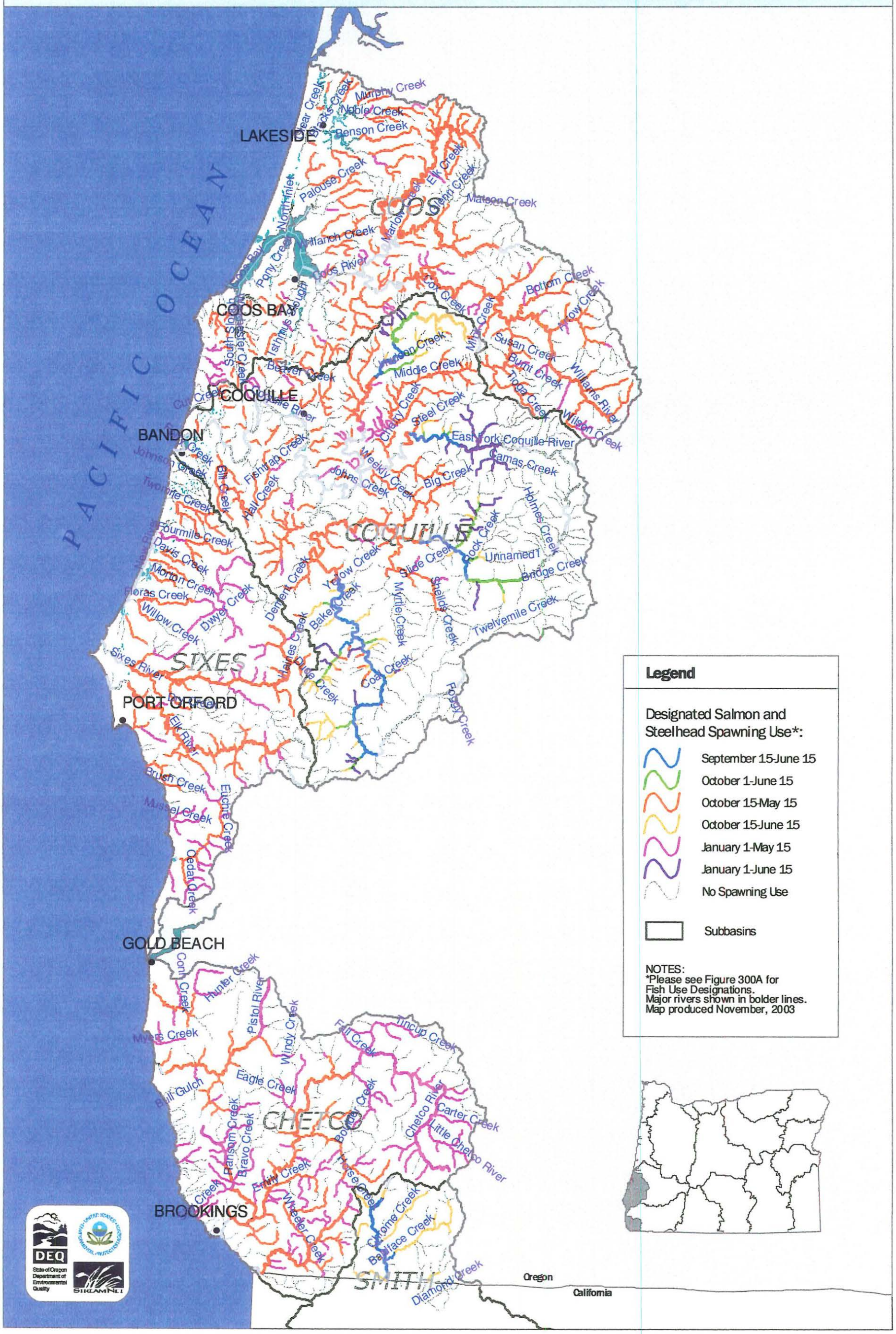


*Figure 310A: Fish Use Designations**
Umatilla Basin, Oregon

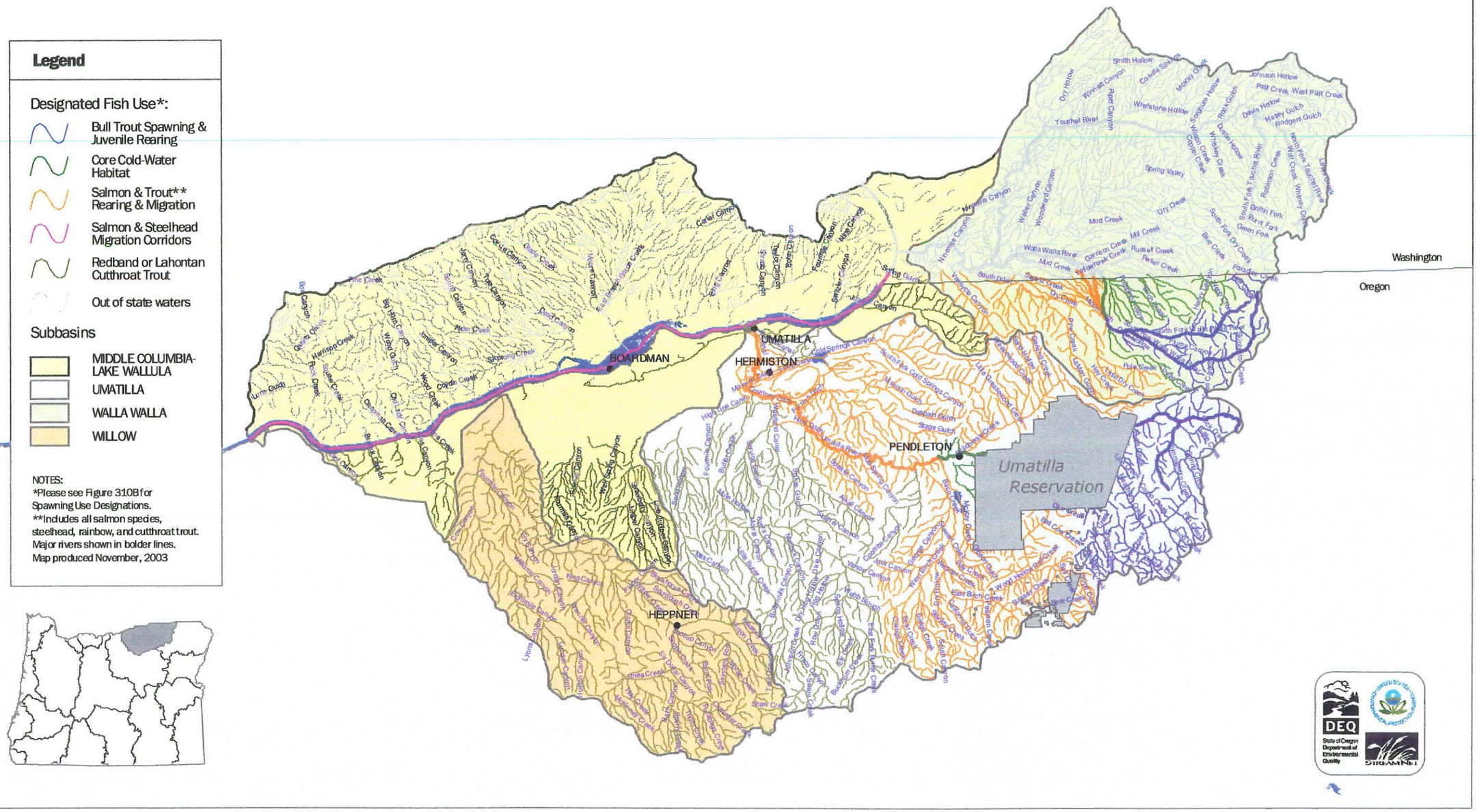


*Figure 310B: Salmon and Steelhead Spawning Use Designations**
Umatilla Basin, Oregon

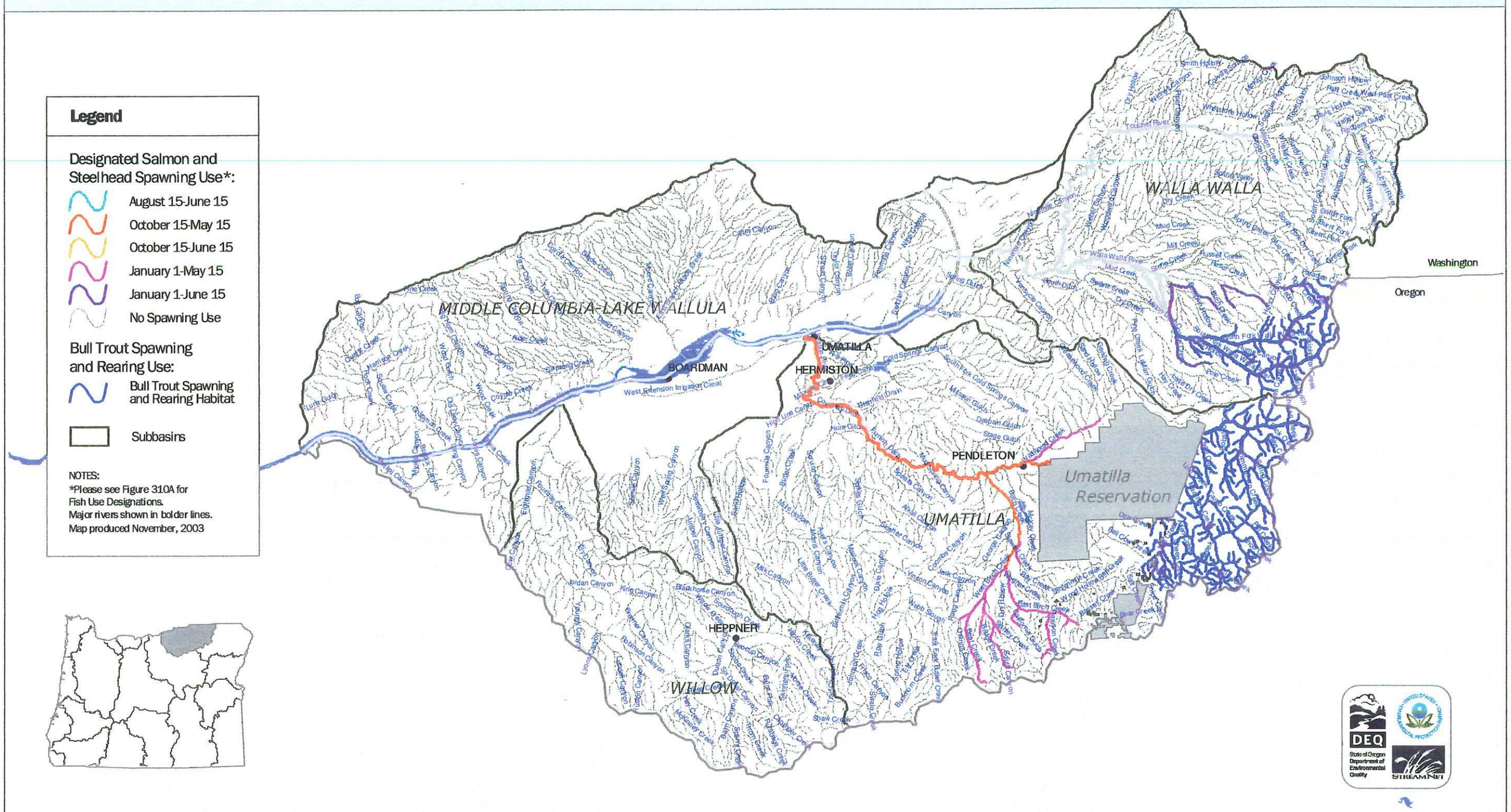
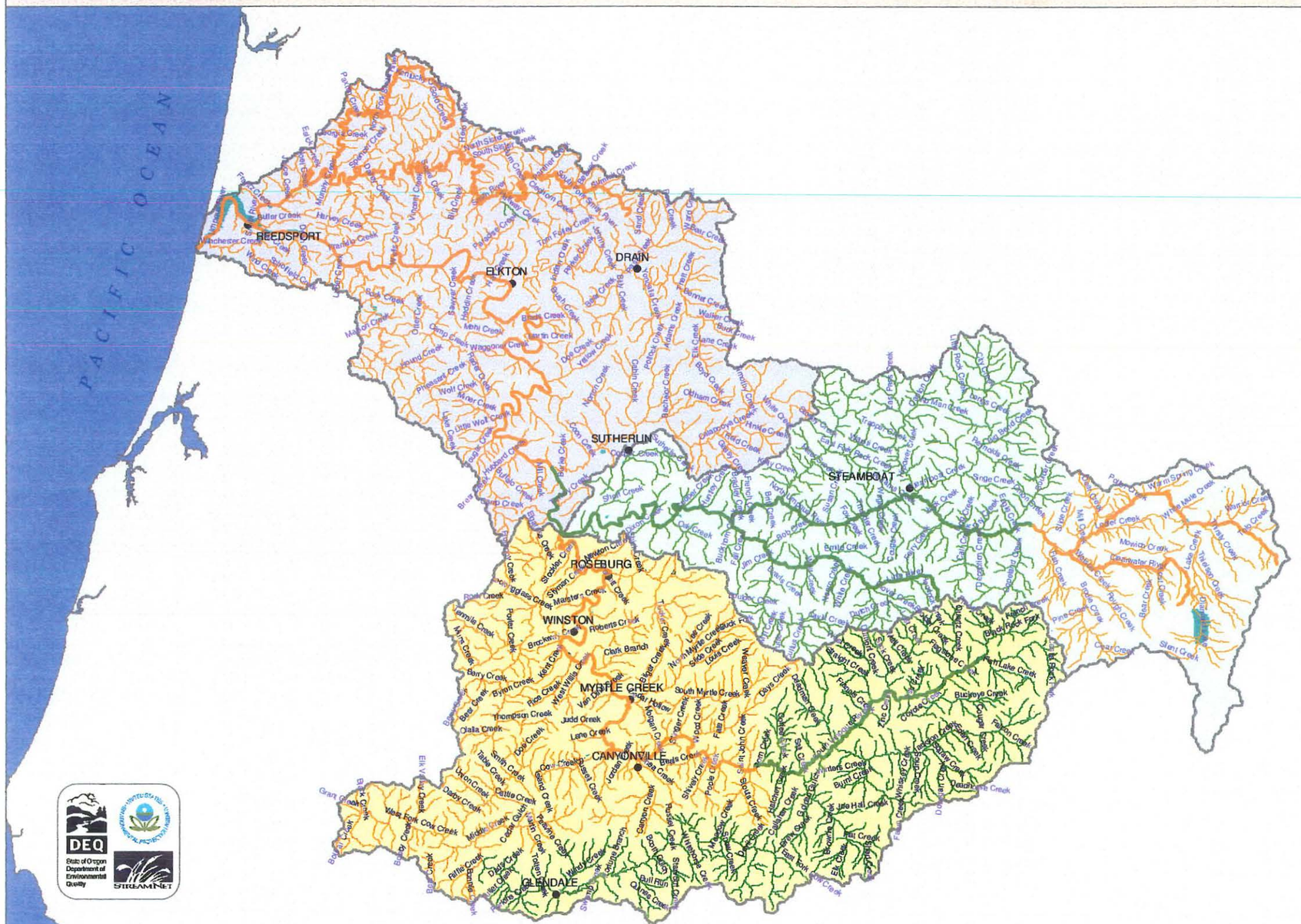


*Figure 320A: Fish Use Designations**
Umpqua Basin, Oregon



Legend

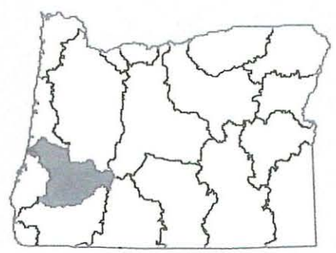
Designated Fish Use*:

- Core Cold-Water Habitat
- Salmon & Trout** Rearing & Migration

Subbasins:

- NORTH UMPQUA
- SOUTH UMPQUA
- UMPQUA

NOTES:
*Please see Figure 320B for Spawning Use Designations.
**Includes all salmon species, steelhead, rainbow, and cutthroat trout.
Major rivers shown in bolder lines.
Map produced November, 2003



DEQ State of Oregon Department of Environmental Quality

STREAMNET

*Figure 320B: Salmon and Steelhead Spawning Use Designations**
Umpqua Basin, Oregon

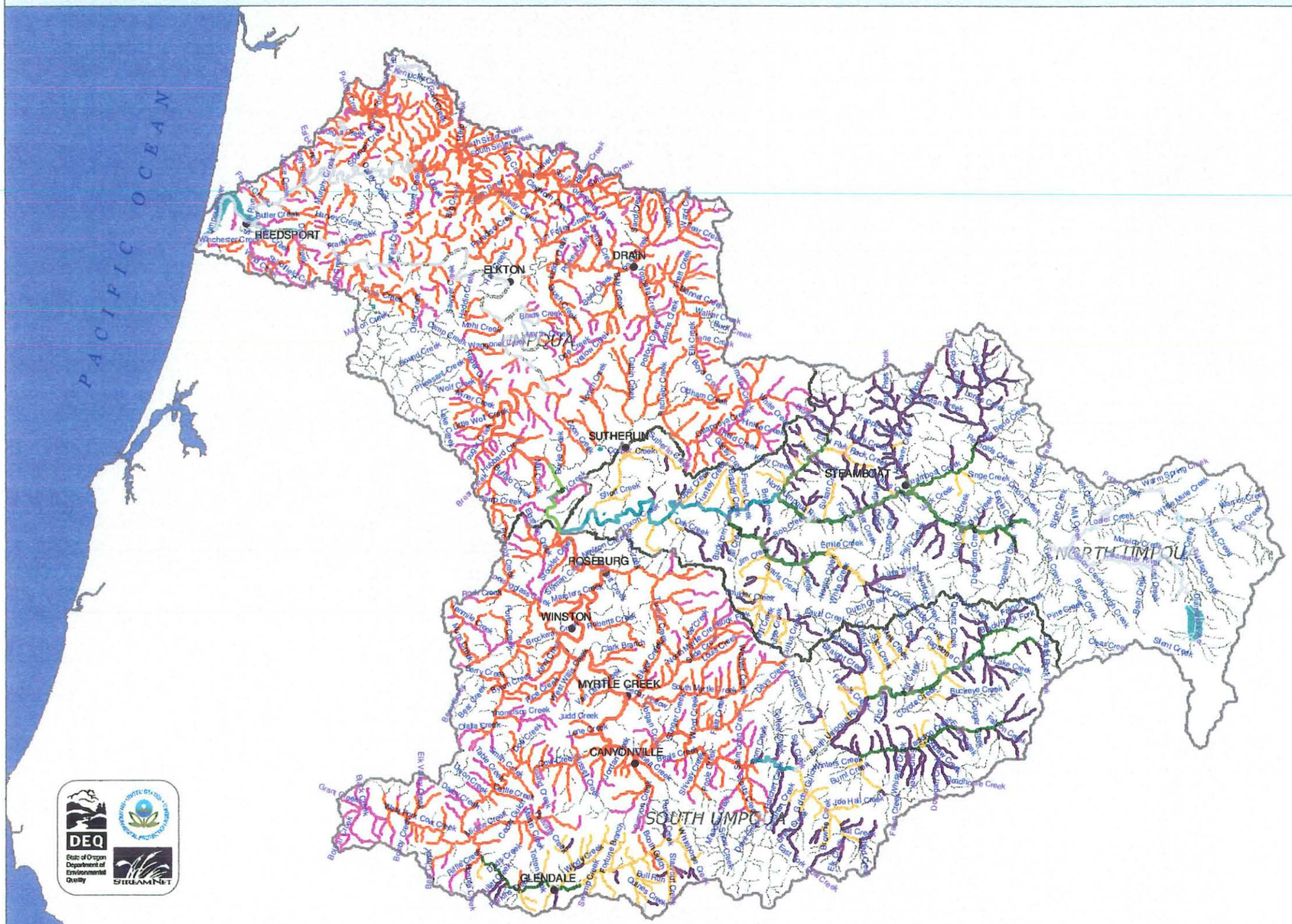
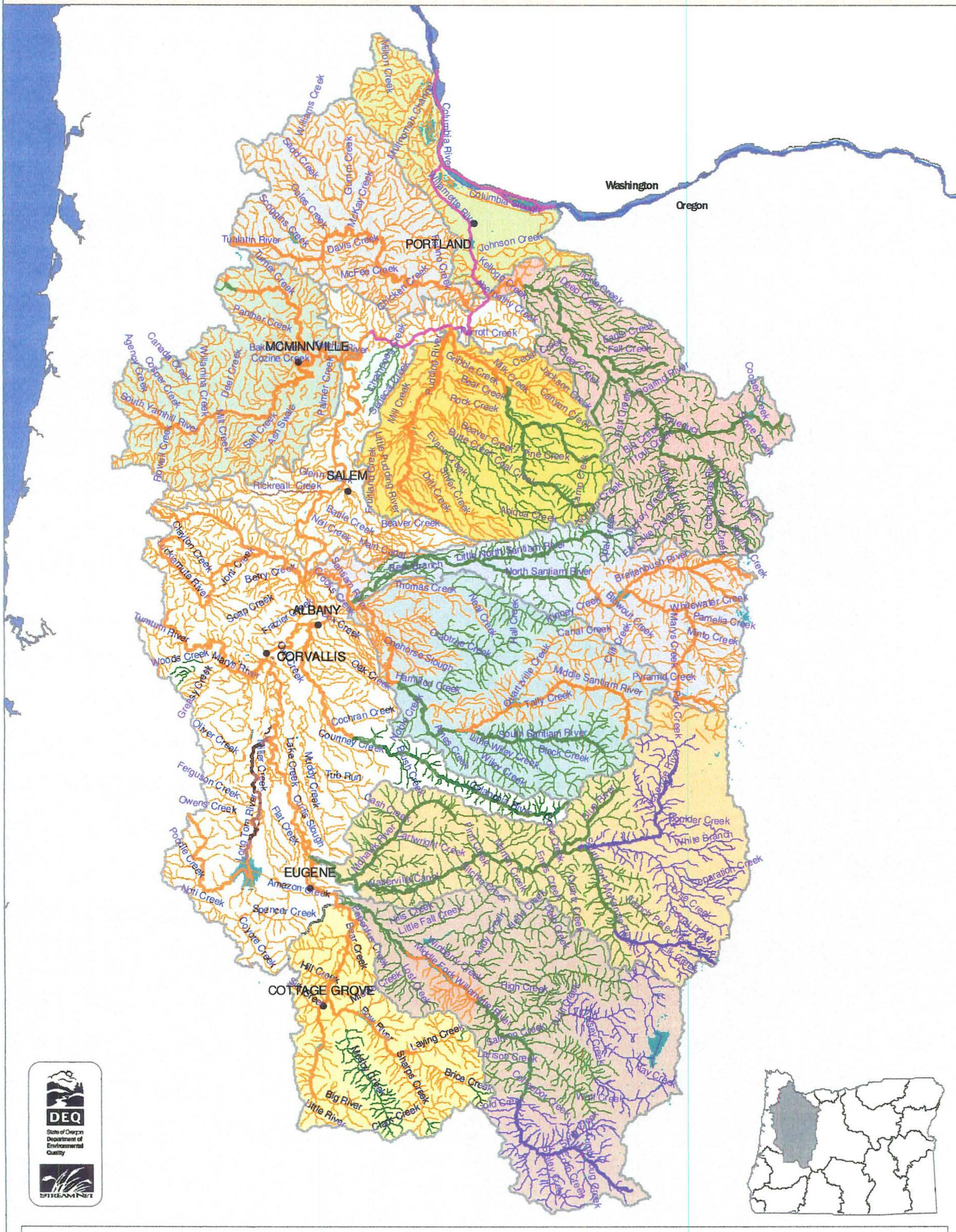


*Figure 340A: Fish Use Designations**
Willamette Basin, Oregon



Legend

Designated Fish Use*:

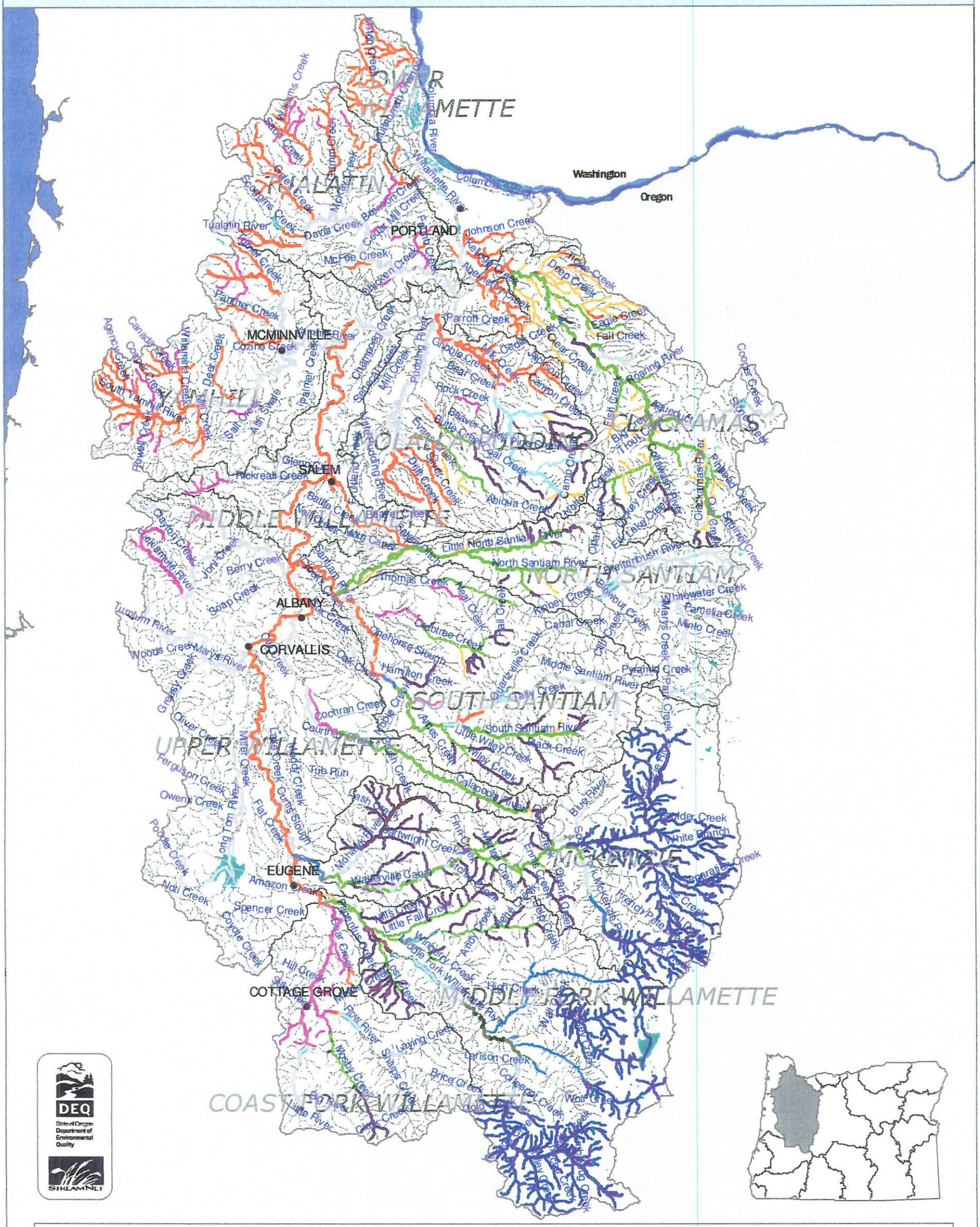
- Bull Trout Spawning & Juvenile Rearing
- Core Cold-Water Habitat
- Salmon & Trout** Rearing & Migration
- Salmon & Steelhead Migration Corridors
- Cool Water Species (no salmonid use)

Subbasins

- CLACKAMAS
- COAST FORK WILLAMETTE
- LOWER WILLAMETTE
- MCKENZIE
- MIDDLE FORK WILLAMETTE
- MIDDLE WILLAMETTE
- MOLALLA-PUDDING
- NORTH SANTIAM
- SOUTH SANTIAM
- TUALATIN
- UPPER WILLAMETTE
- YAMHILL

NOTES:
*Please see Figure 340B for Spawning Use Designations.
**Includes all salmon species, steelhead, rainbow, and cutthroat trout.
Major rivers shown in bolder lines.
Map produced November, 2003

*Figure 340B: Salmon and Steelhead Spawning Use Designations**
Willamette Basin, Oregon



DEQ
State of Oregon Department of Environmental Quality
SIUSLAW NF

Legend

Designated Salmon and Steelhead Spawning Use*:

- August 15-June 15
- September 1-May 15
- September 1-June 15
- September 15-May 15
- September 15-June 15
- October 15-May 15
- October 15-June 15
- January 1-May 15
- January 1-June 15
- No Spawning Use
- Subbasins

Bull Trout Spawning and Rearing Use:

- Bull Trout Spawning and Rearing Habitat

NOTES:
*Please see Figure 340A for Fish Use Designations.
Major rivers shown in bolder lines.
Map produced November, 2003

DEPARTMENT OF ENVIRONMENTAL QUALITY

WATER POLLUTION

DIVISION 41

STATE-WIDE WATER QUALITY MANAGEMENT PLAN;

BENEFICIAL USES, POLICIES, STANDARDS, AND TREATMENT CRITERIA FOR OREGON

340-041-0001

~~**Preface**~~

~~(1) The rules which follow, together with the applicable laws of the State of Oregon and the applicable regulations of the Environmental Quality Commission, set forth Oregon's plans for management of the quality of public waters within the State of Oregon.~~

~~(2) Under this plan, the Department of Environmental Quality will continue to manage water quality by evaluating each discharge and activity, whether existing or a new proposal, on a case-by-case basis, based on best information currently available and within the limiting framework of minimum standards, treatment criteria, and policies which are set forth in the plan.~~

~~(3) The EQC recognizes that the deadlines for adoption of this plan prevented thorough involvement by local government in the development and review of the plan. Accordingly, the Department will review the contents of this plan with affected local governments and will use their comments and suggestions in preparing amendments for consideration by the EQC not later than December, 1977. At a minimum, the processes of coordination with local governments will consist of the following elements:~~

~~(a) Work with county coordinators to set up meetings to explain the plan to groups of local governments and solicit their comments;~~

~~(b) Provide copies of the plan and supporting documents to any affected local governments who have not already received them;~~

~~(c) Seek input from councils of governments;~~

DEPARTMENT OF ENVIRONMENTAL QUALITY

WATER POLLUTION

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STATE-WIDE WATER QUALITY MANAGEMENT PLAN;

BENEFICIAL USES, POLICIES, STANDARDS, AND TREATMENT CRITERIA FOR OREGON

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~~(b) Provide copies of the plan and supporting documents to any affected local governments who have not already received them;~~

~~(c) Seek input from councils of governments;~~

(d) Upon request, visit local level governments to discuss the plan;

(e) Work with statewide associations of local governments and others to inform local governments of the plan.

Stat. Auth.: ORS 468
Stats. Implemented: ORS 468.015, ORS 468.035 & ORS 468B.015
Hist.: DEQ 128, f. & ef. 1-21-77

340-041-0006

Definitions

Definitions applicable to all basins unless context requires otherwise:

(1) "BOD" means 5-day 20°C. Biochemical Oxygen Demand.

(2) "DEQ" or "Department" means the Oregon State Department of Environmental Quality.

(3) "DO" means dissolved oxygen.

(4) "EQC" or "Commission" means the Oregon State Environmental Quality Commission.

(5) "Estuarine Waters" means all mixed fresh and oceanic waters in estuaries or bays from the point of oceanic water intrusion inland to a line connecting the outermost points of the headlands or protective jetties.

(6) "Industrial Waste" means any liquid, gaseous, radioactive, or solid waste substance or a combination thereof resulting from any process of industry, manufacturing, trade, or business, or from the development or recovery of any natural resources.

(7) "Marine Waters" means all oceanic, offshore waters outside of estuaries or bays and within the territorial limits of the State of Oregon.

(8) "mg/l" means milligrams per liter.

(9) "Pollution" means such contamination or other alteration of the physical, chemical, or biological properties of any waters of the state, including change in temperature, taste, color, turbidity, silt, or odor of the waters, or such radioactive or other substance into any waters of the state which either by itself or in connection with any other substance present, will or can reasonably be expected to create a public nuisance or render such waters harmful, detrimental, or injurious to public health, safety, or welfare, or to domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses or to livestock, wildlife, fish or other aquatic life, or the habitat thereof.

~~(10) "Public Water" means the same as "waters of the state".~~

~~(11) "Sewage" means the water-carried human or animal waste from residences, buildings, industrial establishments, or other places together with such groundwater infiltration and surface water as may be present. The admixture with sewage as herein defined of industrial wastes or wastes, as defined in sections (6) and (13) of this rule, shall also be considered "sewage" within the meaning of this division.~~

~~(12) "SS" means suspended solids.~~

~~(13) "Wastes" means sewage, industrial wastes, and all other liquid, gaseous, solid, radioactive, or other substances which will or may cause pollution or tend to cause pollution of any water of the state.~~

~~(14) "Waters of the State" include lakes, bays, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Pacific Ocean within the territorial limits of the State of Oregon, and all other bodies of surface or underground waters, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters which do not combine or effect a junction with natural surface or underground waters), which are wholly or partially within or bordering the state or within its jurisdiction.~~

~~(15) "Low Flow Period" means the flows in a stream resulting from primarily groundwater discharge or baseflows augmented from lakes and storage projects during the driest period of the year. The dry weather period varies across the state according to climate and topography. Wherever the low flow period is indicated in the Water Quality Management Plans, this period has been approximated by the inclusive months. Where applicable in a waste discharge permit, the low flow period may be further defined.~~

~~(16) "Secondary Treatment" as the following context may require for:~~

~~(a) "Sewage Wastes" means the minimum level of treatment mandated by EPA regulations pursuant to Public Law 92-500;~~

~~(b) "Industrial and other waste sources" imply control equivalent to best practicable treatment (BPT).~~

~~(17) "Nonpoint Sources" refers to diffuse or unconfined sources of pollution where wastes can either enter into -- or be conveyed by the movement of water to -- public waters.~~

~~(18) "Loading Capacity (LC)" -- The greatest amount of loading that a water can receive without violating water quality standards.~~

~~(19) "Load Allocation (LA)" -- The portion of a receiving water's loading capacity that is attributed either to one of its existing or future nonpoint sources of pollution or to natural~~

~~background sources. Load allocations are best estimates of the loading which may range from reasonably accurate estimates to gross allotments, depending on the availability of data and appropriate techniques for predicting loading. Whenever possible, natural and nonpoint source loads should be distinguished.~~

~~(20) "Wasteload Allocation (WLA)" -- The portion of a receiving water's loading capacity that is allocated to one of its existing or future point sources of pollution. WLAs constitute a type of water quality-based effluent limitation.~~

~~(21) "Total Maximum Daily Load (TMDL)" -- The sum of the individual WLAs for point sources and LAs for nonpoint sources and background. If a receiving water has only one point source discharger, the TMDL is the sum of that point source WLA plus the LAs for any nonpoint sources of pollution and natural background sources, tributaries, or adjacent segments. TMDLs can be expressed in terms of either mass per time, toxicity, or other appropriate measure. If Best Management Practices (BMPs) or other nonpoint source pollution controls make more stringent load allocations practicable, then wasteload allocations can be made less stringent. Thus, the TMDL process provides for nonpoint source control tradeoffs.~~

~~(22) "Land Development" refers to any human induced change to improved or unimproved real estate, including but not limited to construction, installation or expansion of a building or other structure, land division, drilling, and site alteration such as that due to land surface mining, dredging, grading, construction of earthen berms, paving, improvements for use as parking or storage, excavation or clearing.~~

~~(23) "Jurisdiction" refers to any city or county agency in the Tualatin River and Oswego Lake subbasins that regulates land development activities within its boundaries by approving plats, site plans or issuing permits for land development.~~

~~(24) "Erosion Control Plan" shall be a plan containing a list of best management practices to be applied during construction to control and limit soil erosion.~~

~~(25) "Public Works Project" means any land development conducted or financed by a local, state, or federal governmental body.~~

~~(26) "Stormwater Quality Control Facility" refers to any structure or drainage way that is designed, constructed, and maintained to collect and filter, retain, or detain surface water runoff during and after a storm event for the purpose of water quality improvement. It may also include, but not be limited to, existing features such as wetlands, water quality swales, and ponds which are maintained as stormwater quality control facilities.~~

~~(27) "Water Quality Swale" is a natural depression or wide shallow ditch used to temporarily store, route, or filter runoff for the purpose of improving water quality.~~

~~(28) "In Lieu Fee" means a fee collected by a jurisdiction in lieu of requiring construction of on-site stormwater quality control facilities.~~

~~(29) "Effluent Limited" can mean one of the following categories:~~

~~(a) A receiving stream which is meeting and/or is expected to meet water quality standards with the implementation of standard treatment technology which is secondary treatment for sewage wastes and best practicable treatment (BPT) for industrial and other waste sources;~~

~~(b) A receiving stream for which there is insufficient information to determine if water quality standards are being met with standard treatment technology.~~

~~(30) "Water Quality Limited" can mean one of the following categories:~~

~~(a) A receiving stream which does not meet instream water quality standards during the entire year or defined season even after the implementation of standard technology;~~

~~(b) A receiving stream which achieves and is expected to continue to achieve instream water quality standard but utilizes higher than standard technology to protect beneficial uses;~~

~~(c) A receiving stream for which there is insufficient information to determine if water quality standards are being met with higher than standard treatment technology or where through professional judgment the receiving stream would not be expected to meet water quality standards during the entire year or defined season without higher than standard technology.~~

~~(31) "Reserve Capacity" means that portion of a receiving stream's loading capacity which has not been allocated to point sources or nonpoint sources and natural background as waste load allocations or load allocations, respectively. The reserve capacity includes that loading capacity which has been set aside for a safety margin and is otherwise unallocated.~~

~~(32) "Aquatic Species" means any plants or animals which live at least part of their life cycle in waters of the State.~~

~~(33) "Biological Criteria" means numerical values or narrative expressions that describe the biological integrity of aquatic communities inhabiting waters of a given designated aquatic life use.~~

~~(34) "Designated Beneficial Use" means the purpose or benefit to be derived from a water body, as designated by the Water Resources Department or the Commission.~~

~~(35) "Indigenous" means supported in a reach of water or known to have been supported according to historical records compiled by State and Federal agencies or published scientific literature.~~

~~(36) "Resident Biological Community" means aquatic life expected to exist in a particular habitat when water quality standards for a specific ecoregion, basin, or water body are met. This shall be established by accepted biomonitoring techniques.~~

~~(37) "Without Detrimental Changes in the Resident Biological Community" means no loss of ecological integrity when compared to natural conditions at an appropriate reference site or region.~~

~~(38) "Ecological Integrity" means the summation of chemical, physical and biological integrity capable of supporting and maintaining a balanced, integrated, adaptive community of organisms having a species composition, diversity, and functional organization comparable to that of the natural habitat of the region.~~

~~(39) "Appropriate Reference Site or Region" means a site on the same water body, or within the same basin or ecoregion that has similar habitat conditions, and represents the water quality and biological community attainable within the areas of concern.~~

~~(40) "Critical Habitat" means those areas which support rare, threatened or endangered species, or serve as sensitive spawning and rearing areas for aquatic life.~~

~~(41) "High Quality Waters" means those waters which meet or exceed those levels that are necessary to support the propagation of fish, shellfish, and wildlife and recreation in and on the water, and other designated beneficial uses.~~

~~(42) "Outstanding Resource Waters" means those waters designated by the Environmental Quality Commission where existing high quality waters constitute an outstanding state or national resource based on their extraordinary water quality or ecological values, or where special water quality protection is needed to maintain critical habitat areas.~~

~~(43) "Short-Term Disturbance" means a temporary disturbance where water quality standards may be violated briefly, but not of sufficient duration to cause acute or chronic effects on beneficial uses.~~

~~(44) "Intergravel Dissolved Oxygen" (IGDO) – The concentration of oxygen measured in the stream gravel pore water. For the purposes of compliance with criteria, the dissolved oxygen concentration should be measured within a redd or artificial redd, down-gradient of the egg pocket. Measurements should be taken within a limited time period; for example, prior to emergence of fry during the month of March.~~

~~(45) "Spatial Median" – The value which falls in the middle of a data set of multiple IGDO measurements taken within a spawning area. Half the samples should be greater than, and half the samples should be less than the spatial median.~~

~~(46) "Daily Mean" (dissolved oxygen) – The numeric average of an adequate number of data to describe the variation in dissolved oxygen concentration throughout a day,~~

~~including daily maximums and minimums. For the purpose of calculating the mean, concentrations in excess of 100 percent of saturation are valued at the saturation concentration.~~

~~(47) "Monthly (30-day) Mean Minimum" (dissolved oxygen) -- The minimum of the 30 consecutive day floating averages of the calculated daily mean dissolved oxygen concentration.~~

~~(48) "Weekly (seven-day) Mean Minimum" (dissolved oxygen) -- The minimum of the seven consecutive day floating average of the calculated daily ***mean*** dissolved oxygen concentration.~~

~~(49) "Weekly (seven-day) Minimum Mean" (dissolved oxygen) -- The minimum of the seven consecutive day floating average of the daily ***minimum*** concentration. For purposes of application of the criteria, this value will be used as the reference for diurnal minimums.~~

~~(50) "Minimum" (dissolved oxygen) -- The minimum recorded concentration including seasonal and diurnal minimums.~~

~~(51) "Cold-Water Aquatic Life" -- The aquatic communities that are physiologically restricted to cold water, composed of one or more species sensitive to reduced oxygen levels. Including but not limited to *Salmonidae* and cold-water invertebrates.~~

~~(52) "Cool-Water Aquatic Life" -- The aquatic communities that are physiologically restricted to cool waters, composed of one or more species having dissolved oxygen requirements believed similar to the cold-water communities. Including but not limited to *Cottidae*, *Osmeridae*, *Acipenseridae*, and sensitive *Centrarchidae* such as the small-mouth bass.~~

~~(53) "Warm-Water Aquatic Life" -- The aquatic communities that are adapted to warm-water conditions and do not contain either cold- or cool-water species.~~

~~(54) "Numeric Temperature Criteria" are measured as the seven-day moving average of the daily maximum temperatures. If there is insufficient data to establish a seven-day average of maximum temperatures, the numeric criteria shall be applied as an instantaneous maximum. The measurements shall be made using a sampling protocol appropriate to indicate impact to the beneficial uses;~~

~~(55) "Measurable Temperature Increase" means an increase in stream temperature of more than 0.25°F;~~

~~(56) "Anthropogenic", when used to describe "sources" or "warming", means that which results from human activity;~~

(57) "Ecologically Significant Cold-Water Refuge" exists when all or a portion of a waterbody supports stenotypic cold-water species (flora or fauna) not otherwise widely supported within the subbasin, and either:

(a) Maintains cold-water temperatures throughout the year relative to other segments in the subbasin, providing summertime cold-water holding or rearing habitat that is limited in supply, or;

(b) Supplies cold water to a receiving stream or downstream reach that supports cold-water biota.

Stat. Auth: ORS 183.500, ORS 468.020, ORS 468B.048, ORS 468.705, ORS 468.710 & ORS 468.735
Stats. Implemented: ORS 468B.048
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 24-1981, f. & ef. 9-8-81; DEQ 16-1988, f. & cert. ef. 7-13-88; DEQ 16-1989, f. & cert. ef. 7-31-89 (and corrected 8-3-89); DEQ 30-1989, f. & cert. ef. 12-14-89; DEQ 22-1990, f. & cert. ef. 7-6-90; DEQ 14-1991, f. & cert. ef. 8-13-91; DEQ 17-1991, f. & cert. ef. 9-30-91; DEQ 5-1996, f. & cert. ef. 3-7-96

340-041-0026

Policies and Guidelines Generally Applicable to All Basins

(1) In order to maintain the quality of waters in the State of Oregon, the following is the general policy of the EQC:

(a) Antidegradation Policy for Surface Waters. The purpose of the Antidegradation Policy is to guide decisions that affect water quality such that unnecessary degradation from point and nonpoint sources of pollution is prevented, and to protect, maintain, and enhance existing surface water quality to protect all existing beneficial uses. The standards and policies set forth in OAR 340-041-0120 through 340-041-0962 are intended to implement the Antidegradation Policy;

(A) High Quality Waters Policy: Where existing water quality meets or exceeds those levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, and other designated beneficial uses, that level of water quality shall be maintained and protected. The Environmental Quality Commission, after full satisfaction of the intergovernmental coordination and public participation provisions of the continuing planning process, and with full consideration of sections (2), (3) and (5) of this rule, however, may allow a lowering of water quality in these high quality waters if they find:

(i) No other reasonable alternatives exist except to lower water quality; and

(ii) The action is necessary and justifiable for economic or social development benefits and outweighs the environmental costs of lowered water quality; and

~~(iii) All water quality standards will be met and beneficial uses protected.~~

~~(B) The Director or a designee may allow lower water quality on a short term basis in order to respond to emergencies or to otherwise protect public health and welfare;~~

~~(C) Water Quality Limited Waters Policy: For water quality limited waterbodies, the water quality shall be managed as described in section (3) of this rule;~~

~~(D) Outstanding Resource Waters Policy: Where existing high quality waters constitute an outstanding state or national resource such as those waters designated as extraordinary resource waters, or as critical habitat areas, the existing water quality and water quality values shall be maintained and protected, and classified as "Outstanding Resource Waters of Oregon". The Commission may specially designate high quality waterbodies to be classified as Outstanding Resource Waters in order to protect the water quality parameters that affect ecological integrity of critical habitat or special water quality values that are vital to the unique character of those waterbodies. The Department will develop a screening process and establish a list of nominated waterbodies for Outstanding Resource Waters designation in the Bienniel Water Quality Status Assessment Report (305(b) Report). The priority waterbodies for nomination include:~~

~~(i) National Parks;~~

~~(ii) National Wild and Scenic Rivers;~~

~~(iii) National Wildlife Refuges;~~

~~(iv) State Parks; and~~

~~(v) State Scenic Waterways.~~

~~(E) The Department will bring to the Commission a list of waterbodies which are proposed for designation as Outstanding Resource Waters at the time of each Trienniel Water Quality Standards Review;~~

~~(F) In designating Outstanding Resource Waters, the Commission shall establish the water quality values to be protected and provide a process for determining what activities are allowed that would not affect the outstanding resource values. After the designation, the Commission shall not allow activities that may lower water quality below the level established except on a short term basis to respond to emergencies or to otherwise protect human health and welfare.~~

~~(b) Point source discharges shall follow policies and guidelines in sections (2), (5) and (6) of this rule, and nonpoint source activities shall follow guidelines in sections (7), (8), (9), (10), and (11) of this rule.~~

~~(2) In order to maintain the quality of waters in the State of Oregon, it is the general policy of the EQC to require that growth and development be accommodated by increased efficiency and effectiveness of waste treatment and control such that measurable future discharged waste loads from existing sources do not exceed presently allowed discharged loads except as provided in section (3) of this rule.~~

~~(3) The Commission or Department may grant exceptions to sections (2) and (6) of this rule and approvals to section (5) of this rule for major dischargers and other dischargers, respectively. Major dischargers include those industrial and domestic sources that are classified as major sources for permit fee purposes in OAR 340-045-0075(2).~~

~~(a) In allowing new or increased discharged loads, the Commission or Department shall make the following findings:~~

~~(A) The new or increased discharged load would not cause water quality standards to be violated;~~

~~(B) The new or increased discharged load would not unacceptably threaten or impair any recognized beneficial uses. In making this determination, the Commission or Department may rely upon the presumption that if the numeric criteria established to protect specific uses are met the beneficial uses they were designed to protect are protected. In making this determination the Commission or Department may also evaluate other state and federal agency data that would provide information on potential impacts to beneficial uses for which the numeric criteria have not been set;~~

~~(C) The new or increased discharged load shall not be granted if the receiving stream is classified as being water quality limited under OAR 340-041-0006(30)(a), unless:~~

~~(i) The pollutant parameters associated with the proposed discharge are unrelated either directly or indirectly to the parameter(s) causing the receiving stream to violate water quality standards and being designated water quality limited; or~~

~~(ii) Total maximum daily loads (TMDLs), waste load allocations (WLAs) load allocations (LAs), and the reserve capacity have been established for the water quality limited receiving stream; and compliance plans under which enforcement action can be taken have been established; and there will be sufficient reserve capacity to assimilate the increased load under the established TMDL at the time of discharge; or~~

~~(iii) Effective July 1, 1996, in waterbodies designated water quality limited for dissolved oxygen, when establishing WLAs under a TMDL for waterbodies meeting the conditions defined in this rule, the Department may at its discretion provide an allowance for WLAs calculated to result in no measurable reduction of dissolved oxygen. For this purpose, "no measurable reduction" is defined as no more than 0.10 mg/L for a single source and no more than 0.20 mg/L for all anthropogenic activities that influence the water quality limited segment. The allowance applies for surface water DO criteria and for Intergravel DO if a determination is made that the conditions are natural. The allowance for WLAs~~

would apply only to surface water 30-day and seven-day means, and the IGDO action level; or

(iv) Under extraordinary circumstances to solve an existing, immediate, and critical environmental problem that the Commission or Department may consider a waste load increase for an existing source on a receiving stream designated water quality limited under OAR 340-041-0006(30)(a) during the period between the establishment of TMDLs, WLAs and LAs and their achievement based on the following conditions:

(I) That TMDLs, WLAs and LAs have been set; and

(II) That a compliance plan under which enforcement actions can be taken has been established and is being implemented on schedule; and

(III) That an evaluation of the requested increased load shows that this increment of load will not have an unacceptable temporary or permanent adverse effect on beneficial uses; and

(IV) That any waste load increase granted under subparagraph (iv) of this paragraph is temporary and does not extend beyond the TMDL compliance deadline established for the waterbody. If this action will result in a permanent load increase, the action has to comply with sub-paragraphs (i) or (ii) of this paragraph.

(D) Effective July 1, 1996, in any waterbody identified by the Department as exceeding the relevant numeric temperature criteria specified for each individual water quality management basin identified in OAR 340-041-0205, OAR 340-041-0245, OAR 340-041-0285, OAR 340-041-0325, OAR 340-041-0365, OAR 340-041-0445, OAR 340-041-0485, OAR 340-041-0525, OAR 340-041-0565, OAR 340-041-0605, OAR 340-041-0645, OAR 340-041-0685, OAR 340-041-0725, OAR 340-041-0765, OAR 340-041-0805, OAR 340-041-0845, OAR 340-041-0885, OAR 340-041-0925, OAR 340-041-0965, and designated as water quality limited under Section 303(d) of the Clean Water Act, the following requirements shall apply to appropriate watersheds or stream segments in accordance with priorities established by the Department. The Department may determine that a plan is not necessary for a particular stream segment or segments within a water quality limited basin based on the contribution of the segment(s) to the temperature problem:

(i) Anthropogenic sources are required to develop and implement a surface water temperature management plan which describes the best management practices, measures, and/or control technologies which will be used to reverse the warming trend of the basin, watershed, or stream segment identified as water quality limited for temperature;

(ii) Sources shall continue to maintain and improve, if necessary, the surface water temperature management plan in order to maintain the cooling trend until the numeric criterion is achieved or until the Department, in consultation with the Designated Management Agencies (DMAs), has determined that all feasible steps have been taken to

~~meet the criterion and that the designated beneficial uses are not being adversely impacted. In this latter situation, the temperature achieved after all feasible steps have been taken will be the temperature criterion for the surface waters covered by the applicable management plan. The determination that all feasible steps have been taken will be based on, but not limited to, a site-specific balance of the following criteria: protection of beneficial uses; appropriateness to local conditions; use of best treatment technologies or management practices or measures; and cost of compliance;~~

~~(iii) Once the numeric criterion is achieved or the Department has determined that all feasible steps have been taken, sources shall continue to implement the practices or measures described in the surface water temperature management plan in order to continually achieve the temperature criterion;~~

~~(iv) For point sources, the surface water temperature management plan will be part of their National Pollutant Discharge Elimination System Permit (NPDES);~~

~~(v) For nonpoint sources, the surface water temperature management plan will be developed by designated management agencies (DMAs) which will identify the appropriate BMPs or measures;~~

~~(vi) A source (including but not limited to permitted point sources, individual landowners and land managers) in compliance with the Department or DMA (as appropriate) approved surface water temperature management plan shall not be deemed to be causing or contributing to a violation of the numeric criterion if the surface water temperature exceeds the criterion;~~

~~(vii) In waters the Department determines to be critical for bull trout recovery, the goal of a bull trout surface water temperature management plan is to specifically protect those habitat ranges necessary to maintain the viability of existing stocks by restoring stream and riparian conditions or allowing them to revert to conditions attaining the coolest surface water temperatures possible under natural background conditions;~~

~~(E) Waters of the state exceeding the temperature criteria will be identified in the Clean Water Act (CWA), Section 303(d) list developed by the Department according to the schedule required by the Clean Water Act. This list will be prioritized in consul-tation with the DMAs to identify the order in which those waters will be addressed by the Department and the DMAs;~~

~~(F) In basins determined by the Department to be exceeding the numeric temperature criteria, and which are required to develop surface water temperature management plans, new or increased discharge loads from point sources which require an NPDES permit under Section 402 of the Clean Water Act or hydro-power projects which require certification under Section 401 of the Clean Water Act are allowed a 1.0°F total cumulative increase in surface water temperatures as the surface water temperature management plan is being developed and implemented for the water quality limited basin if:~~

~~(i) In the best professional judgment of the Department, the new or increased discharge load, even with the resulting 1.0°F cumulative increase, will not conflict with or impair the ability of a surface water temperature management plan to achieve the numeric temperature criteria; and~~

~~(ii) A new or expanding source must demonstrate that it fits within the 1.0°F increase and that its activities will not result in a measurable impact on beneficial uses. This latter showing must be made by demonstrating to the Department that the temperature change due to its activities will be less than or equal to 0.25°F under a conservative approach or by demonstrating the same to the EQC with appropriate modeling.~~

~~(G) Any source may petition the Department for an exception to paragraph (F) of this subsection, provided:~~

~~(i) The discharge will result in less than 1.0°F increase at the edge of the mixing zone, and subparagraph (ii) or (iii) of this paragraph applies;~~

~~(ii) The source provides the necessary scientific information to describe how the designated beneficial uses would not be adversely impacted; or~~

~~(iii) The source demonstrates that:~~

~~(I) It is implementing all reasonable management practices;~~

~~(II) Its activity will not significantly affect the beneficial uses; and~~

~~(III) The environmental cost of treating the parameter to the level necessary to assure full protection would outweigh the risk to the resource.~~

~~(H) Any source or DMA may petition the Commission for an exception to paragraph (F) of this subsection, provided:~~

~~(i) The source or DMA provides the necessary scientific information to describe how the designated beneficial uses would not be adversely impacted; or~~

~~(ii) The source or DMA demonstrates that:~~

~~(I) It is implementing all reasonable management practices;~~

~~(II) Its activity will not significantly affect the beneficial uses; and~~

~~(III) The environmental cost of treating the parameter to the level necessary to assure full protection would outweigh the risk to the resource.~~

~~(I) In waterbodies designated by the Department as water quality limited for bacteria, and in accordance with priorities established by the Department, development and~~

~~implementation of a bacteria management plan shall be required of those sources that the Department determines to be contributing to the problem. The Department may determine that a plan is not necessary for a particular stream segment or segments within a water-quality-limited basin based on the contribution of the segment(s) to the problem. The bacteria management plans will identify the technologies, BMPs and/or measures and approaches to be implemented by point and nonpoint sources to limit bacterial contamination. For point sources, their National Pollutant Discharge Elimination System permit is their bacteria management plan. For nonpoint sources, the bacteria management plan will be developed by designated management agencies (DMAs) which will identify the appropriate BMPs or measures and approaches.~~

~~(J) The activity, expansion, or growth necessitating a new or increased discharge load is consistent with the acknowledged local land use plans as evidenced by a statement of land use compatibility from the appropriate local planning agency.~~

~~(b) Oregon's water quality management policies and programs recognize that Oregon's water bodies have a finite capacity to assimilate waste. Unused assimilative capacity is an exceedingly valuable resource that enhances in-stream values specifically, and environmental quality generally. Allocation of any unused assimilative capacity should be based on explicit criteria. In addition to the conditions in subsection (a) of this section, the Commission or Department shall consider the following:~~

~~(A) Environmental Effects Criteria:~~

~~(i) Adverse Out-of-Stream Effects. There may be instances where the non-discharge or limited discharge alternatives may cause greater adverse environmental effects than the increased discharge alternative. An example may be the potential degradation of groundwater from land application of wastes;~~

~~(ii) Instream Effects. Total stream loading may be reduced through elimination or reduction of other source discharges or through a reduction in seasonal discharge. A source that replaces other sources, accepts additional waste from less efficient treatment units or systems, or reduces discharge loadings during periods of low stream flow may be permitted an increased discharge load year round or during seasons of high flow, as appropriate;~~

~~(iii) Beneficial Effects. Land application, upland wetlands application, or other non-discharge alternatives for appropriately treated wastewater may replenish groundwater levels and increase streamflow and assimilative capacity during otherwise low streamflow periods.~~

~~(B) Economic Effects Criteria. When assimilative capacity exists in a stream, and when it is judged that increased loadings will not have significantly greater adverse environmental effects than other alternatives to increased discharge, the economic effect of increased loading will be considered. Economic effects will be of two general types:~~

~~(i) Value of Assimilative Capacity. The assimilative capacity of Oregon's streams are finite, but the potential uses of this capacity are virtually unlimited. Thus it is important that priority be given to those beneficial uses that promise the greatest return (beneficial use) relative to the unused assimilative capacity that might be utilized. In stream uses that will benefit from reserve assimilative capacity, as well as potential future beneficial use, will be weighed against the economic benefit associated with increased loading;~~

~~(ii) Cost of Treatment Technology. The cost of improved treatment technology, non-discharge and limited discharge alternatives shall be evaluated.~~

~~(4)(a) A receiving stream shall be designated as water quality limited through the biennial water quality status assessment report prepared to meet the requirements of Section 305(b) of the Water Quality Act. Appendix A of the Status Assessment report shall identify: what waterbodies are water quality limited, the time of year the water quality standards violations occur, the segment of stream or area of waterbody limited, the parameter(s) of concern, whether it is water quality limited under OAR 340-041-0006(30)(a), (b) or (c). Appendix B and C of the Status Assessment report shall identify the specific evaluation process for designating waterbodies limited;~~

~~(b) The WQL list contained in Appendix A of the Status Assessment report shall be placed on public notice and reviewed through the public hearing process. At the conclusion of the hearing process and the evaluation of the testimony received, Appendix A will become the official water quality limited list. The Department may add a waterbody to the water quality limited list between status assessment reports after placing that action out on public notice and conducting a public hearing;~~

~~(c) For interstate waterbodies, the state shall be responsible for completing the requirements of section (3) of this rule for that portion of the interstate waterbody within the boundary of the state;~~

~~(d) For waterbodies designated WQL under OAR 340-041-0006(30)(c), the Department shall establish a priority list and schedule for future water quality monitoring activities to determine: if the waterbody should be designated WQL under OAR 340-041-0006(30)(a) or (b), if estimated TMDLs need to be prepared, and if an implementation plan needs to be developed and implemented;~~

~~(e) For waterbodies designated WQL under OAR 340-041-0006(30)(b), requests for load increases shall be considered following subsection (3)(b) of this rule.~~

~~(5) For any new waste sources, alternatives which utilize reuse or disposal with no discharge to public waters shall be given highest priority for use wherever practicable. New source discharges may be approved subject to the criteria in section (3) of this rule.~~

~~(6) No discharges of wastes to lakes or reservoirs shall be allowed except as provided in section (3) of this rule.~~

(7) Log handling in public waters shall conform to current EQC policies and guidelines.

(8) Sand and gravel removal operations shall be conducted pursuant to a permit from the Division of State Lands and separated from the active flowing stream by a watertight berm wherever physically practicable. Recirculation and reuse of process water shall be required wherever practicable. Discharges, when allowed, or seepage or leakage losses to public waters shall not cause a violation of water quality standards or adversely affect legitimate beneficial uses.

(9) Logging and forest management activities shall be conducted in accordance with the Oregon Forest Practices Act so as to minimize adverse effects on water quality.

(10) Road building and maintenance activities shall be conducted in a manner so as to keep waste materials out of public waters and minimize erosion of cut banks, fills, and road surfaces.

(11) In order to improve controls over nonpoint sources of pollution, federal, state, and local resource management agencies will be encouraged and assisted to coordinate planning and implementation of programs to regulate or control runoff, erosion, turbidity, stream temperature, stream flow, and the withdrawal and use of irrigation water on a basin-wide approach so as to protect the quality and beneficial uses of water and related resources. Such programs may include, but not be limited to, the following:

(a) Development of projects for storage and release of suitable quality waters to augment low stream flow;

(b) Urban runoff control to reduce erosion;

(c) Possible modification of irrigation practices to reduce or minimize adverse impacts from irrigation return flows;

(d) Stream bank erosion reduction projects.

Stat. Auth: ORS 183.500, ORS 468.020, ORS 468B.048, ORS 468.705, ORS 468.710 & ORS 468.735
Stats. Implemented: ORS 468B.048
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 1-1980, f. & ef. 1-9-80; DEQ 13-1989, f. & cert. ef. 6-14-89; DEQ 22-1990, f. & cert. ef. 7-6-90; DEQ 17-1991, f. & cert. ef. 9-30-91; DEQ 5-1996, f. & cert. ef. 3-7-96

340-041-0027

Biological Criteria

Waters of the state shall be of sufficient quality to support aquatic species without detrimental changes in the resident biological communities.

Stat. Auth.: ORS 468.735
Stats. Implemented: ORS 468B.048
Hist.: DEQ 14-1991, f. & cert. ef. 8-13-91

340-041-0034

Policy on Sewerage Works Planning and Construction

(1) Oregon's publicly owned sewerage utilities have since 1956 developed an increasing reliance on federal sewerage works construction grant funds to meet a major portion of the cost of their sewerage works construction needs. This reliance did not appear unreasonable based on federal legislation passed up through 1978. Indeed, the Environmental Quality Commission (EQC) has routinely approved compliance schedules with deadlines contingent on federal funding. This reliance no longer appears reasonable based on recent and proposed legislative actions and appropriations and the general state of the nation's economy.

(2) The federal funds expected for future years will address a small percentage of Oregon's sewerage works construction needs. Thus, continued reliance by DEQ and public agencies on federal funding for sewerage works construction will not assure that sewage from a growing Oregon population will be adequately treated and disposed of so that health hazards and nuisance conditions are prevented and beneficial uses of public waters are not threatened or impaired by quality degradation.

(3) Therefore, the following statements of policy are established to guide future sewerage works planning and construction:

(a) The EQC remains strongly committed to its historic program of preventing water quality problems by requiring control facilities to be provided prior to the connection of new or increased waste loads;

(b) The EQC urges each sewerage utility in Oregon to develop, as soon as practicable, a financing plan which will assure that future sewerage works construction, operation, maintenance and replacement needs can be met in a timely manner. Such financing plans will be a prerequisite to Department issuance of permits for new or significantly modified sewerage facilities, for approval of plans for new or significantly modified sewerage facilities, or for access to funding assistance from the state pollution control bond fund. The Department may accept assurance of development of such financing plan if necessary to prevent delay in projects already planned and in the process of implementation. The Department will work with the League of Oregon Cities and others as necessary to aid in the development of financing plans;

(c) No sewerage utility should assume that it will receive grant assistance to aid in addressing its planning and construction needs;

~~(d) Existing sewerage facility plans which are awaiting design and construction should be updated where necessary to include:~~

~~(A) Evaluation of additional alternatives where appropriate, and re-evaluation of costs of existing alternatives;~~

~~(B) Identification and delineation of phased construction alternatives; and~~

~~(C) A financing plan which will assure ability to construct facilities over an appropriate time span with locally derived funds.~~

~~(e) New sewerage works facility planning initiated after October 1, 1981 should not be approved without adequate consideration of alternatives and phased construction options, and without a financing plan which assures adequate funding for construction, operation, maintenance and replacement of sewerage facilities:~~

~~(A) The EQC recognizes that many cities in need of immediate sewerage works construction have completed planning and are awaiting design or construction funding. These cities have developed their program relying on 75 percent federal grants. They will have difficulty developing and implementing alternatives to fund immediate construction needs. Many are, or will be, under moratoriums on new connections because existing facilities are at, or near, capacity. The EQC will consider the following interim measures as a means of assisting these cities to get on a self-supporting basis provided that an approvable long-range program is presented:~~

~~(i) Temporary increases in waste discharge loading may be approved provided a minimum of secondary treatment, or equivalent control is maintained and beneficial uses of the receiving waterway are not impaired;~~

~~(ii) Installation and operation of temporary treatment works may be approved providing:~~

~~(I) The area served is inside an approved urban growth boundary and the proposal is consistent with State Land Use Planning laws;~~

~~(II) A master sewerage plan is adopted which shows how and when the temporary facilities will be phased out;~~

~~(III) The public agency responsible for implementing the master plan is the owner and operator of the temporary facilities;~~

~~(IV) Sewerage service to the area served by the temporary facility is necessary as part of the financing program for master plan implementation and no other option for service is practicably available;~~

~~(V) An acceptable receiving stream or method of effluent disposal is available for the temporary facility.~~

(B) Compliance schedules and other permit requirements may be modified to incorporate an approved interim program. Compliance with a permit so modified will be required at all times.

(f) Sewerage Construction programs should be designed to eliminate raw sewage bypassing during the summer recreation season (except for a storm event greater than the one in ten year 24 hour storm) as soon as practicable. A program and timetable should be developed through negotiation with each affected source. Bypasses which occur during the remainder of the year should be eliminated in accordance with an approved longer term maintenance based correction program. More stringent schedules may be imposed as necessary to protect drinking water supplies and shellfish growing areas;

(g) Any sewerage utility that is presently in compliance and foresees a need to plan for future expansion to accommodate growth but elects to wait for federal funds for planning and construction will make such election with full knowledge that if existing facilities reach capacity before new facilities are completed, a moratorium on new connections will be imposed. Such moratorium will not qualify them for any special consideration since its presence is deemed a matter of their choice;

(h) The Department will continue to assist cities to develop interim and long range programs, and construction schedules and to secure financing for essential construction.

Stat. Auth.: ORS 183
Stats. Implemented: ORS 468.035 & ORS 468B.035
Hist.: DEQ 29-1981, f. & ef. 10-19-81

340-041-0120

Implementation Program Applicable to All Basins

(1) No waste treatment and disposal facilities shall be constructed or operated and no wastes shall be discharged to public waters without obtaining a permit from the Department as required by ORS 468.740.

(2) Plans for all sewage and industrial waste treatment, control, and disposal facilities shall be submitted to the Department for review and approval prior to construction as required by ORS 468.742.

(3) Minimum design criteria for waste treatment and control facilities prescribed under this plan and such other waste treatment and controls as may be necessary to insure compliance with the water quality standards contained in this plan shall be provided in accordance with specific permit conditions for those sources or activities for which permits are required and the following implementation program:

(a) For new or expanded waste loads or activities, fully approved treatment or control facilities, or both shall be provided prior to discharge of any wastes from the new or expanded facilities or conduct of the new or expanded activity;

(b) For existing waste loads or activities, additional treatment or control facilities necessary to correct specific unacceptable water quality conditions shall be provided in accordance with a specific program and timetable incorporated into the waste discharge permit for the individual discharger or activity. In developing treatment requirements and implementation schedules for existing installations or activities, consideration shall be given to the impact upon the overall environmental quality including air, water, land use, and aesthetics;

(c) Wherever minimum design criteria for waste treatment and control facilities set forth in this plan are more stringent than applicable federal standards and treatment levels currently being provided, upgrading to the more stringent requirements will be deferred until it is necessary to expand or otherwise modify or replace the existing treatment facilities. Such deferral will be acknowledged in the permit for the source;

(d) Where planning or design or construction of new or modified waste treatment and controls to meet prior applicable state or federal requirements is underway at the time this plan is adopted, such plans, design, or construction may be completed under the requirements in effect when the project was initiated. Timing for upgrading to meet more stringent future requirements will be as provided in section (3) of this rule.

(4) Confined animal feeding operations shall be regulated pursuant to OAR 340-041-0005 through 340-051-0080 in order to minimize potential adverse effect on water quality.

(5) Programs for control of pollution from nonpoint sources when developed by the Department, or by other agencies pursuant to Section 208 of Public Law 92-500 and approved by the Department, shall as applicable, be incorporated into this plan by amendment via the same process used to adopt the plan unless other procedures are established by law.

(6) Where minimum requirements of federal law or enforceable regulations are more stringent than specific provisions of this plan, the federal requirements shall prevail.

(7) Within framework of state-wide priority and available resources, the Department will monitor water quality within the basin for the purposes of evaluating conformance with the plan and developing information for future additions or updating.

(8) The EQC recognizes that the potential exists for conflicts between water quality management plans and the land use plans and resource management plans which local governments and other agencies must develop pursuant to law. In the event any such conflicts develop, it is the intent of the Department to meet with the local government or responsible agency to formulate proposed revisions to one or both so as to resolve the

~~conflict. Revisions will be presented for adoption via the same process used to adopt the plan unless other specific procedures are established by law.~~

~~(9) The Department shall calculate and include effluent limits specified in pounds per day, which shall be the mass load limits for biochemical oxygen demand or carbonaceous biochemical oxygen demand and total suspended solids in National Pollutant Discharge Elimination System permits issued to all sewage treatment facilities. These limits shall be calculated as follows:~~

~~(a) Except as noted in paragraph (H) of this subsection, for existing facilities and for facilities receiving engineering plans and specifications approval from the Department for new treatment facilities or treatment facilities expanding the average dry weather treatment capacity, prior to June 30, 1992:~~

~~(A) During periods of low stream flows (approximately May 1 through October 31), the monthly average mass load expressed as pounds per day shall not exceed the applicable monthly concentration effluent limit times the design average dry weather flow expressed in million gallons per day times 8.34 pounds per gallons. The weekly average mass load expressed as pounds per day shall not exceed the monthly average mass load times 1.5. The daily mass load expressed in pounds per day shall not exceed the monthly average mass load times 2.0;~~

~~(B) During the period of high stream flows (approximately November 1 through April 30), the monthly average mass load expressed as pounds per day shall not exceed the monthly concentration effluent limit times the design average wet weather flow expressed in million gallons per day times 8.34 pounds per gallon. The weekly average mass load expressed as pounds per day shall not exceed the monthly average mass load times 1.5. The daily mass load expressed in pounds per day shall not exceed the monthly average mass load times 2.0;~~

~~(C) On any day that the daily flow to a sewage treatment facility exceeds the lesser hydraulic capacity of the secondary treatment portion of the facility or twice the design average dry weather flow, the daily mass load limit shall not apply. The permittee shall operate the treatment facility at highest and best practicable treatment and control;~~

~~(D) The design average wet weather flow used in calculating mass loads shall be approved by the Department in accordance with prudent engineering practice and shall be based on a facility plan approved by the Department, engineering plans and specifications approved by the Department, or an engineering evaluation. The permittee shall submit documentation describing and supporting the design average wet weather flow with the permit application, application for permit renewal, or modification request, or upon request by the Department. The design average wet weather flow is defined as the average flow between November 1 and April 30 when the sewage treatment facility is projected to be at design capacity for that portion of the year;~~

~~(E) Mass loads assigned as described in paragraphs (B) and (C) of this subsection will not be subject to OAR 340-041-0026(3);~~

~~(F) Mass loads as described in this rule will be included in permits upon renewal, or upon permit modification request;~~

~~(G) Within 180 days after permit renewal or modification, permittees receiving higher mass loads under this rule and having a separate sanitary sewer system shall submit to the Department for review and approval a proposed program and time schedule for identifying and reducing inflow. The program shall consist of the following:~~

~~(i) Identification of all overflow points and verification that sewer system overflows are not occurring up to a 24 hour, five year storm event or equivalent;~~

~~(ii) Monitoring of all pump station overflow points; and~~

~~(iii) A program for identifying and removing all inflow sources into the permittees sewer system over which the permittee has legal control; and~~

~~(iv) For those permittees not having the necessary legal authority for all portions of the sewer system discharging into the permittee's sewer system or treatment facility, a program and schedule for gaining legal authority to require inflow reduction and a program and schedule for removing inflow sources.~~

~~(H) Within one year after the Department's approval of the program, the permittee shall begin implementation of the program.~~

~~(I) Paragraphs (A) through (G) of this subsection shall not apply to the cities of Athena, Elgin, Adair Village, Halsey, Harrisburg, Independence, Carlton and Sweet Home. Mass load limits have been individually assigned to these facilities.~~

~~(b) For new sewage treatment facilities or treatment facilities expanding the average dry weather treatment capacity, and receiving engineering plans and specifications approval from the Department after June 30, 1992, the mass load limits shall be calculated by the Department based on the proposed treatment facility capabilities and the highest and best practicable treatment to minimize the discharge of pollutants;~~

~~(c) Mass load limits as defined in this rule may be replaced by more stringent limits if required by waste load allocations established in accordance with a TMDL for treatment facilities discharging to water quality limited streams, or if required to prevent or eliminate violations of water quality standards;~~

~~(d) In the event that the design average wet weather flow or the hydraulic secondary treatment capacity is not known or has not been approved by the Department at the time of permit issuance, the permit shall include as interim mass load limits the mass load limits in the previous permit issued to the permittee for the treatment facility. The permit~~

~~shall also include a requirement that the permittee shall submit to the Department the design average wet weather flow and hydraulic secondary treatment capacity within 12 months after permit issuance. Upon review and approval of the design flow information, the Department will modify the permit and include mass load limits as described in subsection (a) of this section;~~

~~(c) Each permittee with existing sewage treatment facilities otherwise subject to subsection (a) of this section may choose mass load limits calculated as follows:~~

~~(A) The monthly average mass load expressed as pounds per day shall not exceed the applicable monthly concentration effluent limit times the design average dry weather flow expressed in million gallons per day times 8.34 pounds per gallon;~~

~~(B) The weekly average mass load expressed as pounds per day shall not exceed the monthly average mass load times 1.5;~~

~~(C) The daily mass load expressed in pounds per day shall not exceed the monthly average mass load times 2.0. In the event that existing mass load limits are retained by the permittee, the terms and requirements of subsection (a) of this section shall not apply.~~

~~(f) The Commission may grant exceptions to subsection (a) of this section. In allowing increased discharged loads, the Commission shall make the findings specified in OAR 340-041-0026(3) for waste loads, and in addition shall make the following findings:~~

~~(A) That mass loads as calculated in subsection (a) of this section cannot be achieved with the existing treatment facilities operated at maximum efficiency at projected design flows; and~~

~~(B) That there are no practicable alternatives to achieving the mass loads as calculated in subsection (a) of this section.~~

~~(10) Agricultural water quality management plans to reduce agricultural nonpoint source pollution shall be developed and implemented by the Oregon Department of Agriculture (ODA) through a cooperative agreement with the Department of Environmental Quality (DEQ) to implement applicable provisions of ORS 568.900–933 and ORS 561.191. If DEQ has reason to believe that agricultural discharges or activities are contributing to water quality problems resulting in water quality standards violations, DEQ shall hold a consultation with the ODA. If water quality impacts are likely from agricultural sources, and DEQ determines that a water quality management plan is necessary, the Director of DEQ shall write a letter to the Director of the ODA requesting that such a management plan be prepared and implemented to reduce pollutant loads and achieve the water quality criteria.~~

~~(11) EQC policy on surface water temperature (as regulated in the basin standards found in OAR 340-041-0205, OAR 340-041-0245, OAR 340-041-0285, OAR 340-041-0325, OAR 340-041-0365, OAR 340-041-0445, OAR 340-041-0485, OAR 340-041-0525,~~

~~OAR 340-041-0565, OAR 340-041-0605, OAR 340-041-0645, OAR 340-041-0685, OAR 340-041-0725, OAR 340-041-0765, OAR 340-041-0805, OAR 340-041-0845, OAR 340-041-0885, OAR 340-041-0925, OAR 340-041-0965:~~

~~(a) It is the policy of the Environmental Quality Commission (EQC) to protect aquatic ecosystems from adverse surface water warming caused by anthropogenic activities. The intent of the EQC is to minimize the risk to cold-water aquatic ecosystems from anthropogenic warming of surface waters, to encourage the restoration of critical aquatic habitat, to reverse surface water warming trends, to cool the waters of the State, and to control extremes in temperature fluctuations due to anthropogenic activities:~~

~~(A) The first element of this policy is to encourage the proactive development and implementation of best management practices or other measures and available temperature control technologies for nonpoint and point source activities to prevent thermal pollution of surface waters;~~

~~(B) The second element of this policy is to require the development and implementation of surface water temperature management plans for those basins exceeding the numeric temperature criteria identified in the basin standards. The surface water temperature management plans will identify the best management practices (BMPs) or measures and approaches to be taken by nonpoint sources, and technologies to be implemented by point sources to limit or eliminate adverse anthropogenic warming of surface waters.~~

~~(b) Surface water temperatures in general are warming throughout the State. These water temperatures are influenced by natural physical factors including, but not limited to solar radiation, stream side shade, ambient air temperatures, heated water discharges, cold water discharges, channel morphology, and stream flow. Surface water temperatures may also be affected by anthropogenic activities that discharge heated water, widen streams, or reduce stream shading, flows, and depth. These anthropogenic activities, as well as others, increase water temperatures. Anthropogenic activities may also result in the discharge of cold water that decreases water temperatures and affects biological cycles of aquatic species;~~

~~(c) The temperature criteria in the basin standards establish numeric and narrative criteria to protect designated beneficial uses and to initiate actions to control anthropogenic sources that adversely increase or decrease stream temperatures. Natural surface water temperatures at times exceed the numeric criteria due to naturally high ambient air temperatures, naturally heated discharges, naturally low stream flows or other natural conditions. These exceedances are not water quality standards violations when the natural conditions themselves cause water temperatures to exceed the numeric criteria. In these situations, the natural surface water temperatures become the numeric criteria. In surface waters where both natural and anthropogenic factors cause exceedances of the numeric criteria, each anthropogenic source will be responsible for controlling, through implementation of a management plan, only that portion of the temperature increase caused by that anthropogenic source;~~

~~(d) The purpose of the numeric criteria in the basin standards is to protect designated beneficial uses; this includes specific life cycle stages during the time periods they are present in a surface water of the state. Surface water temperature measurements taken to determine compliance with the identified criteria will be taken using a sampling protocol appropriate to indicate impact to the beneficial use. The EQC, in establishing these criteria, recognizes that new information is constantly being developed on water temperatures and how water temperatures affect different beneficial uses. Therefore, continued reevaluation of temperature information is needed to refine and revise numeric criteria in the basin standards over time. The EQC also recognizes that the development and implementation of control technologies and best management practices or measures to reduce anthropogenic warming is evolving and the achievement of the numeric criteria will be an iterative process;~~

~~(e) Surface water temperature management plans will be required according to OAR 340-041-0026(3)(a)(D) when the relevant numeric temperature criteria are exceeded and the waterbody is designated as water-quality limited under Section 303(d) of the Clean Water Act. The plans will identify those steps, measures, technologies, and/or practices to be implemented by those sources determined by the Department to be contributing to the problem. The plan may be for an entire basin, a single watershed, a segment of a stream, single or multiple nonpoint source categories, single or multiple point sources or any combination of these, as deemed appropriate by the Department, to address the identified temperature problem:~~

~~(A) In the case of state and private forest lands, the practices identified in rules adopted pursuant to the State Forest Practices Act (FPA) will constitute the surface water temperature management plan for the activities covered by the act. Consequently, in those basins, watersheds or stream segments exceeding the relevant temperature criterion, and for those activities covered by the Forest Practices Act, the forestry component of the temperature management plan will be the practices required under the FPA. If the mandated practices need to be improved in specific basins, watersheds or stream segments to fully protect identified beneficial uses, the Departments of Forestry and Environmental Quality will follow the process described in ORS 527.765 to establish, implement, and improve practices in order to reduce thermal loads to achieve and maintain the surface water temperature criteria. Federal forest management agencies are required by the federal Clean Water Act to meet or exceed the substantive requirements of the state forestry nonpoint source program. The Department currently has Memoranda of Understanding with the U.S. Forest Service and Bureau of Land Management to implement this aspect of the Clean Water Act. These memoranda will be used to identify the temperature management plan requirements for federal forest lands;~~

~~(B) The temperature management plan for agricultural nonpoint sources shall be developed and implemented in the manner described in section (10) of this rule;~~

~~(C) The Department will be responsible for determining the appropriate surface water temperature management plan for individual and general NPDES permitted sources. The requirement for a surface water temperature management plan and the content of the plan~~

will be appropriate to the contribution the permitted source makes to the temperature problem, the technologies and practices available to reduce thermal loads, and the potential for trading or mitigating thermal loads;

(D) In urban areas, the Department will work with appropriate state, county, municipal, and special district agencies to develop surface water temperature management plans that reduce thermal loads in basins, watersheds, or stream segments associated with the temperature violations so that the surface water temperature criteria are achieved.

(f) The EQC encourages the release of stored water from reservoirs to cool surface water in order to achieve the identified numeric criteria in the basin standards as long as there is no significant adverse impact to downstream designated beneficial uses from the cooler water temperatures. If the Department determines that a significant adverse impact is resulting from the cold water release, the Department shall, at its discretion, require the development of a management plan to address the adverse impact created by the cold-water release;

(g) Maintaining low stream temperatures to the maximum extent practicable in basins where surface water temperatures are below the specific criteria identified in this rule shall be accomplished by implementing technology based permits, best management practices or other measures. Any measurable increase in surface water temperature resulting from anthropogenic activities in these basins shall be in accordance with the antidegradation policy contained in OAR 340-041-0026.

(12) Effluent Limitations for Bacteria: Except as allowed in subsection (c) of this section, upon NPDES permit renewal or issuance, or upon request for a permit modification by the permittee at an earlier date, effluent discharges to freshwaters, and estuarine waters other than shellfish growing waters shall not exceed a monthly log mean of 126 E. coli organisms per 100 ml. No single sample shall exceed 406 E. coli organisms per 100 ml. However, no violation will be found, for an exceedance if the permittee takes at least five consecutive re-samples at four hour intervals beginning as soon as practicable (preferably within 28 hours) after the original sample was taken and the log mean of the five re-samples is less than or equal to 126 E. coli. The following conditions apply:

(a) If the Department finds that re-sampling within the timeframe outlined in this section would pose an undue hardship on a treatment facility, a more convenient schedule may be negotiated in the permit, provided that the permittee demonstrates that the sampling delay will result in no increase in the risk to water contact recreation in waters affected by the discharge;

(b) The in-stream criterion for chlorine listed in **Table 20** shall be met at all times outside the assigned mixing zone;

(c) For sewage treatment plants that are authorized to use reclaimed water pursuant to OAR Chapter 340, Division 55, and which also use a storage pond as a means to dechlorinate their effluent prior to discharge to public waters, effluent limitations for

~~bacteria shall, upon request by the permittee, be based upon appropriate total coliform, limits as required by OAR Chapter 340, Division 55: For Level II limitations, no two consecutive samples shall exceed 240 total coliform per 100 ml and for Level III and Level IV limitations, no single sample shall exceeds 23 total coliform per 100 ml. However, no violation will be found for an exceedance under this paragraph if the permittee takes at least five consecutive re-samples at four hour intervals beginning as soon as practicable (preferably within 28 hours) after the original sample(s) were taken; and in the case of Level II effluent, the log mean of the five re-samples is less than or equal to 23 total coliform per 100 ml or, in the case of Level III and IV effluent, if the log mean of the five re-samples is less than or equal to 2.2 total coliform per 100 ml.~~

~~(13) Sewer Overflows in Winter: Domestic waste collection and treatment facilities are prohibited from discharging raw sewage to waters of the State during the period of November 1 through May 21, except during a storm event greater than the one in five-year, 24 hour duration storm. However, the following exceptions apply:~~

~~(a) The Commission may on a case-by-case basis approve a bacteria control management plan to be prepared by the permittee, for a basin or specified geographic area which describes hydrologic conditions under which the numeric bacteria criteria would be waived. These plans will identify the specific hydrologic conditions, identify the public notification and education processes that will be followed to inform the public about an event and the plan, describe the water quality assessment conducted to determine bacteria sources and loads associated with the specified hydrologic conditions, and describe the bacteria control program that is being implemented in the basin or specified geographic area for the identified sources;~~

~~(b) Facilities with separate sanitary and storm sewers existing on January 10, 1996, and which currently experience sanitary sewer overflows due to inflow and infiltration problems, shall submit an acceptable plan to the Department at the first permit renewal, which describes actions that will be taken to assure compliance with the discharge prohibition by January 1, 2010. Where discharges occur to a receiving stream with sensitive beneficial uses, the Department may negotiate a more aggressive schedule for discharge elimination;~~

~~(c) On a case by case basis, the beginning of winter may be defined as October 15 if the permittee so requests and demonstrates to the Department's satisfaction that the risk to beneficial uses, including water contact recreation, will not be increased due to the date change.~~

~~(14) Sewer Overflows in Summer: Domestic waste collection and treatment facilities are prohibited from discharging raw sewage to waters of the State during the period of May 22 through October 31, except during a storm event greater than the one in ten year, 24-hour duration storm. The following exceptions apply:~~

(a) For facilities with combined sanitary and storm sewers, the Commission may on a case-by-case basis approve a bacteria control management plan such as that described in subsection (13)(a) of this rule;

(b) On a case-by-case basis, the beginning of summer may be defined as June 1 if the permittee so requests and demonstrates to the Department's satisfaction that the risk to beneficial uses, including water contact recreation, will not be increased due to the date change;

(c) For discharge sources whose permit identifies the beginning of summer as any date from May 22 through May 31: If the permittee demonstrates to the Department's satisfaction that an exceedance occurred between May 21 and June 1 because of a sewer overflow, and that no increase in risk to beneficial uses, including water contact recreation, occurred because of the exceedance, no violation shall be triggered if the storm associated with the overflow was greater than the one-in-five-year, 24-hour duration storm.

(15) Storm Sewers Systems Subject to Municipal NPDES Storm Water Permits: Best management practices shall be implemented for permitted storm sewers to control bacteria to the maximum extent practicable. In addition, a collection system evaluation shall be performed prior to permit issuance or renewal so that illicit and cross connections are identified. Such connections shall be removed upon identification. A collection system evaluation is not required where the Department determines that illicit and cross connections are unlikely to exist.

(16) Storm Sewers Systems Not Subject to Municipal NPDES Storm Water Permits: A collection system evaluation shall be performed of non-permitted storm sewers by January 1, 2005, unless the Department determines that an evaluation is not necessary because illicit and cross connections are unlikely to exist. Illicit and cross-connections shall be removed upon identification.

(17) Water Quality Limited for Bacteria: In those waterbodies, or segments of waterbodies identified by the Department as exceeding the relevant numeric criteria for bacteria in the basin standards and designated as water quality limited under Section 303(d) of the Clean Water Act, the requirements specified in OAR 340-041-0026(3)(a)(I) and in section (10) of this rule shall apply.

[ED. NOTE: The Table(s) referenced in this rule is not printed in the OAR Compilation. Copies are available from the agency.]

Stat. Auth.: ORS 468B.030 & ORS 468B.048
Stats. Implemented: ORS 468B.048
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 16-1992, f. & cert. ef. 8-7-92; DEQ 5-1996, f. & cert. ef. 3-7-96; DEQ 11-1997, f. & cert. ef. 6-11-97

340-041-0150

Nuisance Phytoplankton Growth

The following values and implementation program shall be applied to lakes, reservoirs, estuaries and streams, except for ponds and reservoirs less than ten acres in surface area, marshes and saline lakes:

(1) The following average Chlorophyll **a** values shall be used to identify water bodies where phytoplankton may impair the recognized beneficial uses:

(a) Natural lakes which thermally stratify: 0.01 mg/1;

(b) Natural lakes which do not thermally stratify, reservoirs, rivers and estuaries: 0.015 mg/1;

(c) Average Chlorophyll **a** values shall be based on the following methodology (or other methods approved by the Department): A minimum of three samples collected over any three consecutive months at a minimum of one representative location (e.g., above the deepest point of a lake or reservoir or at a point mid-flow of a river) from samples integrated from the surface to a depth equal to twice the secchi depth or the bottom (the lesser of the two depths); analytical and quality assurance methods shall be in accordance with the most recent edition of **Standard Methods for the Examination of Water and Wastewater**.

(2) Upon determination by the Department that the values in section (1) of this rule are exceeded, the Department shall:

(a) In accordance with a schedule approved by the Commission, conduct such studies as are necessary to describe present water quality; determine the impacts on beneficial uses; determine the probable causes of the exceedance and beneficial use impact; and develop a proposed control strategy for attaining compliance where technically and economically practicable. Proposed strategies could include standards for additional pollutant parameters, pollutant discharge load limitations, and other such provisions as may be appropriate. Where natural conditions are responsible for exceedance of the values in section (1) of this rule or beneficial uses are not impaired, the values in section (1) of this rule may be modified to an appropriate value for that water body;

(b) Conduct necessary public hearings preliminary to adoption of a control strategy, standards or modified values after obtaining Commission authorization;

(c) Implement the strategy upon adoption by the Commission.

(3) In cases where waters exceed the values in section (1) of this rule and the necessary studies are not completed, the Department may approve new activities (which require Department approval), new or additional (above currently approved permit limits) discharge loadings from point sources provided that it is determined that beneficial uses would not be significantly impaired by the new activity or discharge.

[Publications: The publication(s) referred to or incorporated by reference in this rule are available from the agency.]

Stat. Auth.: ORS 468
Stats. Implemented: ORS 468B.048
Hist.: DEQ 7-1986, f. & ef. 3-26-86

North Coast-Lower Columbia Basin

340-041-0202

Beneficial Water Uses to be Protected

Water quality in the North Coast-Lower Columbia River Basin (see **Figures 1** and **2**) shall be managed to protect the recognized beneficial uses as indicated in **Table 1**.

[ED. NOTE: The Figure(s) and Table referenced in this rule are not printed in the OAR Compilation. Copies are available from the agency.]

Stat. Auth.: ORS 468
Stats. Implemented: ORS 468B.048
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 9-1985, f. & ef. 8-6-85

340-041-0205

Water Quality Standards Not to be Exceeded (To be Adopted Pursuant to ORS 468.735 and Enforceable Pursuant to ORS 468.720, 468.990 and 468.992)

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

(2) No wastes shall be discharged and no activities shall be conducted which either alone or in combination with other wastes or activities will cause violation of the following standards in the waters of the North Coast – Lower Columbia River Basin:

(a) Dissolved oxygen (DO): The changes adopted by the Commission on January 11, 1996, become effective July 1, 1996. Until that time, the requirements of this rule that were in effect on January 10, 1996, apply:

(A) For waterbodies identified by the Department as providing salmonid spawning, during the periods from spawning until fry emergence from the gravels, the following criteria apply:

~~(i) The dissolved oxygen shall not be less than 11.0 mg/l. However, if the minimum intergravel dissolved oxygen, measured as a spatial median, is 8.0 mg/l or greater, then the DO criterion is 9.0 mg/l;~~

~~(ii) Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 11.0 mg/l or 9.0 mg/l criteria, dissolved oxygen levels shall not be less than 95 percent of saturation.~~

~~(B) For waterbodies identified by the Department as providing salmonid spawning during the period from spawning until fry emergence from the gravels, the spatial median intergravel dissolved oxygen concentration shall not fall below 6.0 mg/l;~~

~~(C) A spatial median of 8.0 mg/l intergravel dissolved oxygen level shall be used to identify areas where the recognized beneficial use of salmonid spawning, egg incubation and fry emergence from the egg and from the gravels may be impaired and therefore require action by the Department. Upon determination that the spatial median intergravel dissolved oxygen concentration is below 8.0 mg/l, the Department may, in accordance with priorities established by the Department for evaluating water quality impaired waterbodies, determine whether to list the waterbody as water quality limited under the Section 303(d) of the Clean Water Act, initiate pollution control strategies as warranted, and where needed cooperate with appropriate designated management agencies to evaluate and implement necessary best management practices for nonpoint source pollution control;~~

~~(D) For waterbodies identified by the Department as providing cold water aquatic life, the dissolved oxygen shall not be less than 8.0 mg/l as an absolute minimum. Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 8.0 mg/l, dissolved oxygen shall not be less than 90 percent of saturation. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 8.0 mg/l as a 30 day mean minimum, 6.5 mg/l as a seven day minimum mean, and shall not fall below 6.0 mg/l as an absolute minimum (**Table 21**);~~

~~(E) For waterbodies identified by the Department as providing cool water aquatic life, the dissolved oxygen shall not be less than 6.5 mg/l as an absolute minimum. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 6.5 mg/l as a 30 day mean minimum, 5.0 mg/l as a seven day minimum mean, and shall not fall below 4.0 mg/l as an absolute minimum (**Table 21**);~~

~~(F) For waterbodies identified by the Department as providing warm water aquatic life, the dissolved oxygen shall not be less than 5.5 mg/l as an absolute minimum. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 5.5 mg/l as a 30 day mean minimum, and shall not fall below 4.0 mg/l as an absolute minimum (**Table 21**);~~

~~(G) For estuarine water, the dissolved oxygen concentrations shall not be less than 6.5 mg/l (for coastal waterbodies);~~

~~(H) For marine waters, no measurable reduction in dissolved oxygen concentration shall be allowed.~~

~~(b) Temperature: The changes adopted by the Commission on January 11, 1996, become effective July 1, 1996. Until that time, the requirements of this rule that were in effect on January 10, 1996, apply. The method for measuring the numeric temperature criteria specified in this rule is defined in OAR 340-041-0006(54):~~

~~(A) To accomplish the goals identified in OAR 340-041-0120(11), unless specifically allowed under a Department-approved surface water temperature management plan as required under OAR 340-041-0026(3)(a)(D), no measurable surface water temperature increase resulting from anthropogenic activities is allowed:~~

~~(i) In a basin for which salmonid fish rearing is a designated beneficial use, and in which surface water temperatures exceed 64.0°F (17.8°C);~~

~~(ii) In the Columbia River or its associated sloughs and channels from the mouth to river mile 309 when surface water temperatures exceed 68.0°F (20.0°C);~~

~~(iii) In waters and periods of the year determined by the Department to support native salmonid spawning, egg incubation, and fry emergence from the egg and from the gravels in a basin which exceeds 55.0°F (12.8°C);~~

~~(iv) In waters determined by the Department to support or to be necessary to maintain the viability of native Oregon bull trout, when surface water temperatures exceed 50.0°F (10.0°C);~~

~~(v) In waters determined by the Department to be ecologically significant cold water refugia;~~

~~(vi) In stream segments containing federally listed Threatened and Endangered species if the increase would impair the biological integrity of the Threatened and Endangered population;~~

~~(vii) In Oregon waters when the dissolved oxygen (DO) levels are within 0.5 mg/l or 10 percent saturation of the water column or intergravel DO criterion for a given stream reach or subbasin;~~

~~(viii) In natural lakes.~~

~~(B) An exceedance of the numeric criteria identified in subparagraphs (A)(i) through (iv) of this subsection will not be deemed a temperature standard violation if it occurs when the air temperature during the warmest seven day period of the year exceeds the 90th~~

~~percentile of the seven-day-average daily maximum air temperature calculated in a yearly series over the historic record. However, during such periods, the anthropogenic sources must still continue to comply with their surface water temperature management plans developed under OAR 340-041-0026(3)(a)(D);~~

~~(C) Any source may petition the Commission for an exception to subparagraphs (A)(i) through (viii) of this subsection for discharge above the identified criteria if:~~

~~(i) The source provides the necessary scientific information to describe how the designated beneficial uses would not be adversely impacted; or~~

~~(ii) A source is implementing all reasonable management practices or measures; its activity will not significantly affect the beneficial uses; and the environmental cost of treating the parameter to the level necessary to assure full protection would outweigh the risk to the resource.~~

~~(D) Marine and estuarine waters: No significant increase above natural background temperatures shall be allowed, and water temperatures shall not be altered to a degree which creates or can reasonably be expected to create an adverse effect on fish or other aquatic life.~~

~~(c) Turbidity (Nephelometric Turbidity Units, NTU): No more than a ten percent cumulative increase in natural stream turbidities shall be allowed, as measured relative to a control point immediately upstream of the turbidity causing activity. However, limited duration activities necessary to address an emergency or to accommodate essential dredging, construction or other legitimate activities and which cause the standard to be exceeded may be authorized provided all practicable turbidity control techniques have been applied and one of the following has been granted:~~

~~(A) Emergency activities: Approval coordinated by DEQ with the Department of Fish and Wildlife under conditions they may prescribe to accommodate response to emergencies or to protect public health and welfare;~~

~~(B) Dredging, Construction or other Legitimate Activities: Permit or certification authorized under terms of Section 401 or 404 (Permits and Licenses, Federal Water Pollution Control Act) or OAR 141 085 0100 et seq. (Removal and Fill Permits, Division of State Lands), with limitations and conditions governing the activity set forth in the permit or certificate.~~

~~(d) pH (hydrogen ion concentration): pH values shall not fall outside the following ranges:~~

~~(A) Marine waters: 7.0 – 8.5;~~

~~(B) Estuarine and fresh waters: 6.5 – 8.5. The following exception applies: Waters impounded by dams existing on January 1, 1996, which have pHs that exceed the criteria~~

~~shall not be considered in violation of the standard if the Department determines that the exceedance would not occur without the impoundment and that all practicable measures have been taken to bring the pH in the impounded waters into compliance with the criteria.~~

~~(e) Bacteria standards:~~

~~(A) Numeric Criteria: Organisms of the coliform group commonly associated with fecal sources (MPN or equivalent membrane filtration using a representative number of samples) shall not exceed the criteria described in subparagraphs (i) and (ii) of this paragraph:~~

~~(i) Freshwaters and Estuarine Waters Other than Shellfish Growing Waters:~~

~~(I) A 30-day log mean of 126 *E. coli* organisms per 100 ml, based on a minimum of five (5) samples;~~

~~(II) No single sample shall exceed 406 *E. coli* organisms per 100 ml.~~

~~(ii) Marine Waters and Estuarine Shellfish Growing Waters: A fecal coliform median concentration of 14 organisms per 100 milliliters, with not more than ten percent of the samples exceeding 43 organisms per 100 ml.~~

~~(B) Raw Sewage Prohibition: No sewage shall be discharged into or in any other manner be allowed to enter the waters of the State unless such sewage has been treated in a manner approved by the Department or otherwise allowed by these rules;~~

~~(C) Animal Waste: Runoff contaminated with domesticated animal wastes shall be minimized and treated to the maximum extent practicable before it is allowed to enter waters of the State;~~

~~(D) Effluent Limitations and Water Quality Limited Waterbodies: Effluent limitations to implement the criteria in this rule are found in OAR 340-041-0120(12) through (16). Implementation of the criteria in this rule in water quality limited waterbodies is described in OAR 340-041-0026(3)(a)(I) and OAR 340-041-0120(17).~~

~~(f) Bacterial pollution or other conditions deleterious to waters used for domestic purposes, livestock watering, irrigation, bathing, or shellfish propagation, or otherwise injurious to public health shall not be allowed;~~

~~(g) The liberation of dissolved gases, such as carbon dioxide, hydrogen sulfide, or other gases, in sufficient quantities to cause objectionable odors or to be deleterious to fish or other aquatic life, navigation, recreation, or other reasonable uses made of such waters shall not be allowed;~~

~~(h) The development of fungi or other growths having a deleterious effect on stream bottoms, fish or other aquatic life, or which are injurious to health, recreation, or industry shall not be allowed;~~

~~(i) The creation of tastes or odors or toxic or other conditions that are deleterious to fish or other aquatic life or affect the potability of drinking water or the palatability of fish or shellfish shall not be allowed;~~

~~(j) The formation of appreciable bottom or sludge deposits or the formation of any organic or inorganic deposits deleterious to fish or other aquatic life or injurious to public health, recreation, or industry shall not be allowed;~~

~~(k) Objectionable discoloration, scum, oily sleek, or floating solids, or coating of aquatic life with oil films shall not be allowed;~~

~~(l) Aesthetic conditions offensive to the human senses of sight, taste, smell, or touch shall not be allowed;~~

~~(m) Radioisotope concentrations shall not exceed maximum permissible concentrations (MPC's) in drinking water, edible fishes or shellfishes, wildlife, irrigated crops, livestock and dairy products, or pose an external radiation hazard;~~

~~(n)(A) The concentration of total dissolved gas relative to atmospheric pressure at the point of sample collection shall not exceed 110 percent of saturation, except when stream flow exceeds the ten-year, seven-day average flood. However, for Hatchery receiving waters and waters of less than two feet in depth, the concentration of total dissolved gas relative to atmospheric pressure at the point of sample collection shall not exceed 105 percent of saturation;~~

~~(B) The Commission may modify the total dissolved gas criteria in the Columbia River for the purpose of allowing increased spill for salmonid migration. The Commission must find that:~~

~~(i) Failure to act would result in greater harm to salmonid stock survival through in-river migration than would occur by increased spill;~~

~~(ii) The modified total dissolved gas criteria associated with the increased spill provides a reasonable balance of the risk of impairment due to elevated total dissolved gas to both resident biological communities and other migrating fish and to migrating adult and juvenile salmonids when compared to other options for in-river migration of salmon;~~

~~(iii) Adequate data will exist to determine compliance with the standards; and~~

~~(iv) Biological monitoring is occurring to document that the migratory salmonid and resident biological communities are being protected.~~

~~(C) The Commission will give public notice and notify all known interested parties and will make provision for opportunity to be heard and comment on the evidence presented by others, except that the Director may modify the total dissolved gas criteria for emergencies for a period not exceeding 48 hours;~~

~~(D) The Commission may, at its discretion, consider alternative modes of migration.~~

~~(o) Total Dissolved Solids: Guide concentrations listed below shall not be exceeded unless otherwise specifically authorized by DEQ upon such conditions as it may deem necessary to carry out the general intent of this plan and to protect the beneficial uses set forth in OAR 340-041-0202:~~

~~(A) Columbia River -- 500.0 mg/l;~~

~~(B) All Other Fresh Water Streams and Tributaries -- 100.0 mg/l.~~

~~(p) Toxic Substances:~~

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

~~(B) Levels of toxic substances shall not exceed the criteria listed in~~ **~~Table 20~~** ~~which were based on criteria established by EPA and published in~~ **~~Quality Criteria for Water (1986),~~** ~~unless otherwise noted;~~

~~(C) The criteria in paragraph (B) of this subsection shall apply unless data from scientifically valid studies demonstrate that the most sensitive designated beneficial uses will not be adversely affected by exceeding a criterion or that a more restrictive criterion is warranted to protect beneficial uses, as accepted by the Department on a site specific basis. Where no published EPA criteria exist for a toxic substance, public health advisories and other published scientific literature may be considered and used, if appropriate, to set guidance values;~~

~~(D) Bio-assessment studies such as laboratory bioassays or instream measurements of indigenous biological communities, shall be conducted, as the Department deems necessary, to monitor the toxicity of complex effluents, other suspected discharges or chemical substances without numeric criteria, to aquatic life. These studies, properly conducted in accordance with standard testing procedures, may be considered as scientifically valid data for the purposes of paragraph (C) of this subsection. If toxicity occurs, the Department shall evaluate and implement measures necessary to reduce toxicity on a case-by-case basis.~~

~~(3) Where the naturally occurring quality parameters of waters of the North Coast – Lower Columbia River Basin are outside the numerical limits of the above assigned water quality standards, the naturally occurring water quality shall be the standard. However, in such cases special restrictions, described in OAR 340-041-0026(3)(a)(C)(iii), apply to discharges that affect dissolved oxygen.~~

~~(4) Mixing zones:~~

~~(a) The Department may allow a designated portion of a receiving water to serve as a zone of dilution for wastewaters and receiving waters to mix thoroughly and this zone will be defined as a mixing zone;~~

~~(b) The Department may suspend all or part of the water quality standards, or set less restrictive standards, in the defined mixing zone, provided that the following conditions are met:~~

~~(A) The water within the mixing zone shall be free of:~~

~~(i) Materials in concentrations that will cause acute toxicity to aquatic life as measured by a Department approved bioassay method. Acute toxicity is lethality to aquatic life as measured by a significant difference in lethal concentration between the control and 100 percent effluent in an acute bioassay test. Lethality in 100 percent effluent may be allowed due to ammonia and chlorine only when it is demonstrated on a case by case basis that immediate dilution of the effluent within the mixing zone reduces toxicity below lethal concentrations. The Department may on a case by case basis establish a zone of immediate dilution if appropriate for other parameters;~~

~~(ii) Materials that will settle to form objectionable deposits;~~

~~(iii) Floating debris, oil, scum, or other materials that cause nuisance conditions;~~

~~(iv) Substances in concentrations that produce deleterious amounts of fungal or bacterial growths.~~

~~(B) The water outside the boundary of the mixing zone shall:~~

~~(i) Be free of materials in concentrations that will cause chronic (sublethal) toxicity. Chronic toxicity is measured as the concentration that causes long term sublethal effects, such as significantly impaired growth or reproduction in aquatic organisms, during a testing period based on test species life cycle. Procedures and end points will be specified by the Department in wastewater discharge permits;~~

~~(ii) Meet all other water quality standards under normal annual low flow conditions.~~

~~(c) The limits of the mixing zone shall be described in the wastewater discharge permit. In determining the location, surface area, and volume of a mixing zone area, the~~

~~Department may use appropriate mixing zone guidelines to assess the biological, physical, and chemical character of receiving waters, and effluent, and the most appropriate placement of the outfall, to protect instream water quality, public health, and other beneficial uses. Based on receiving water and effluent characteristics, the Department shall define a mixing zone in the immediate area of a wastewater discharge to:~~

~~(A) Be as small as feasible;~~

~~(B) Avoid overlap with any other mixing zones to the extent possible and be less than the total stream width as necessary to allow passage of fish and other aquatic organisms;~~

~~(C) Minimize adverse effects on the indigenous biological community especially when species are present that warrant special protection for their economic importance, tribal significance, ecological uniqueness, or for other similar reasons as determined by the Department and does not block the free passage of aquatic life;~~

~~(D) Not threaten public health;~~

~~(E) Minimize adverse effects on other designated beneficial uses outside the mixing zone.~~

~~(d) The Department may request the applicant of a permitted discharge for which a mixing zone is required, to submit all information necessary to define a mixing zone, such as:~~

~~(A) Type of operation to be conducted;~~

~~(B) Characteristics of effluent flow rates and composition;~~

~~(C) Characteristics of low flows of receiving waters;~~

~~(D) Description of potential environmental effects;~~

~~(E) Proposed design for outfall structures.~~

~~(e) The Department may, as necessary, require mixing zone monitoring studies and/or bioassays to be conducted to evaluate water quality or biological status within and outside the mixing zone boundary;~~

~~(f) The Department may change mixing zone limits or require the relocation of an outfall if it determines that the water quality within the mixing zone adversely affects any existing beneficial uses in the receiving waters.~~

~~(g) **Alternate requirements for mixing zones**: For some existing or proposed discharges to some receiving streams, it may not be practicable to treat wastewater to meet instream water quality standards at the point of discharge or within a short distance from the point~~

~~of discharge. Some of these discharges could be allowed without impairing the overall ecological integrity of the receiving streams, or may provide an overall benefit to the receiving stream. This section specifies the conditions and circumstances under which a mixing zone may be allowed by the Department that extends beyond the immediate area around a discharge point, or that extends across a stream width. An alternate mixing zone may be approved if the applicant demonstrates to the Department's satisfaction that the discharge (A) creates an overall environmental benefit, or (B) is to a constructed water course, or (C) is insignificant. The three circumstances under which alternate mixing zones may be established are described further below.~~

~~(A) **Overall environmental benefit**.~~

~~(i) Qualifying for alternate mixing zone based on overall environmental benefit: In order to qualify for an alternate mixing zone based on a finding of overall environmental benefit, the discharger must demonstrate to the Department's satisfaction the following:~~

~~(I) That all practical strategies have been or will be implemented to minimize the pollutant loads in the effluent; and~~

~~(II) For proposed increased discharges, the current actual discharge and mixing zone does not meet the requirements of a standard mixing zone; and~~

~~(III) Either that, on balance, an environmental benefit would be lost if the discharge did not occur, or that the discharger is prepared to undertake other actions that will mitigate the effect of the discharge to an extent resulting in a net environmental benefit to the receiving stream.~~

~~(IV) For the purposes of this rule, the term "practical" shall include environmental impact, availability of alternatives, cost of alternatives, and other relevant factors.~~

~~(ii) Studies required and evaluation of studies: In order to demonstrate that, on balance, an environmental benefit will result from the discharge, the following information shall be provided by the applicant:~~

~~(I) The effluent flow and pollutant loads that are detected or expected in the effluent, by month, both average and expected worst case discharges. The parameters to be evaluated include at a minimum temperature, biochemical oxygen demand, total suspended solids, total dissolved solids, pH, settleable solids, e. coli bacteria, oil and grease, any pollutants listed in Table 20 of this rule division, and any pollutant for which the receiving stream has been designated by the Department as water quality limited; and~~

~~(II) Receiving stream flow, by month; and~~

~~(III) The expected impact of the discharge, by month, on the receiving stream for the entire proposed mixing zone area for all of the pollutants listed above. Included in this~~

~~analysis shall be a comparison of the receiving stream water quality with the discharge and without the discharge; and~~

~~(IV) A description of fish, other vertebrate populations, and macroinvertebrates that reside in or are likely to pass through the proposed mixing zone, including expected location (if known), species identification, stage of development, and time of year when their presence is expected. For existing discharges, the applicant shall provide the same information for similar nearby streams that are unaffected by wastewater discharges. In addition, any threatened or endangered species in the immediate vicinity of the receiving stream shall be identified; and~~

~~(V) The expected impact of the discharge on aquatic organisms and/or fish passage, including any expected negative impacts from the effluent attracting fish where that is not desirable; and~~

~~(VI) A description of the expected environmental benefits to be derived from the discharge or other mitigation measures proposed by the applicant, including but not limited to improvements in water quality, improvements in fish passage, and improvements in aquatic habitat. If the applicant proposes to undertake mitigation measures designed to provide environmental benefits (e.g., purchasing water or water conservation rights to increase stream flows or establishing stream cover to decrease temperature), the applicant shall describe the mitigation measures in detail, including a description of the steps it will take to ensure that the benefits of the mitigation measures are attained and are not lost or diminished over time.~~

~~(VII) Some or all of the above study requirements may be waived by the Department, if the Department determines that the information is not needed. In the event that the Department does waive some or all of the above study requirements, the basis for waiving the requirements will be included in the permit evaluation report upon the next permit renewal or modification relating to the mixing zone.~~

~~(VIII) Upon request of the Department, the applicant shall conduct additional studies to further evaluate the impact of the discharge, which may include whole effluent toxicity testing, stream surveys for water quality, stream surveys for fish and other aquatic organisms, or other studies as specified by the Department.~~

~~(IX) In evaluating whether an existing or proposed increase in an existing discharge would result in a net environmental benefit, the applicant shall use the native biological community in a nearby, similar stream that is unaffected by wastewater discharges. The Department shall consider all information generated as required in this rule and other relevant information. The evaluation shall consider benefits to the native aquatic biological community only.~~

~~(iii) Permit conditions: Upon determination by the Department that the discharge and mitigation measures (if any) will likely result in an overall environmental benefit, the Department shall include appropriate permit conditions to insure that the environmental~~

~~benefits are attained and continue. Such permit conditions may include but not be limited to:~~

~~(I) Maximum allowed effluent flows and pollutant loads;~~

~~(II) Requirements to maintain land ownership, easements, contracts, or other legally binding measures necessary to assure that mitigation measures, if any, remain in place and effective;~~

~~(III) Special operating conditions;~~

~~(IV) Monitoring and reporting requirements; and~~

~~(V) Studies to evaluate the effectiveness of mitigation measures.~~

~~(B) **Constructed water course**: A mixing zone may be extended through a constructed water course and into a natural water course. For the purposes of this rule, a constructed water course is one that was constructed for irrigation, site drainage, or wastewater conveyance, and has the following characteristics:~~

~~(i) Irrigation flows, stormwater runoff, or wastewater flows have replaced natural streamflow regimes; and~~

~~(ii) The channel form is greatly simplified in lengthwise and cross sectional profiles; and~~

~~(iii) Physical and biological characteristics that differ significantly from nearby natural streams; and~~

~~(iv) A much lower diversity of aquatic species than found in nearby natural streams; and~~

~~(v) If the constructed water course is an irrigation canal, then it must have effective fish screens in place to qualify as a constructed water course.~~

~~(C) **Insignificant discharges**: Insignificant discharges are those that either by volume, pollutant characteristics, and/or temporary nature are expected to have little if any impact on beneficial uses in the receiving stream, and for which the extensive evaluations required for discharges to smaller streams are not warranted. For the purposes of this rule, only filter backwash discharges and underground storage tank cleanups are considered insignificant discharges.~~

~~(D) **Other requirements for alternate mixing zones**: The following are additional requirements for dischargers requesting an alternate mixing zone:~~

~~(i) Most discharges that qualify for an alternate mixing zone will extend through the receiving stream until a larger stream is reached, where thorough mixing of the effluent can occur and where the edge of the allowed mixing zone will be located. The portion of~~

the mixing zone in the larger stream must meet all of the requirements of the standard mixing zone, including not blocking aquatic life passage; and

(ii) An alternate mixing zone shall not be granted if a municipal drinking water intake is located within the proposed mixing zone, and the discharge has a significant adverse impact on the drinking water source; and

(iii) The discharge will not pose an unreasonable hazard to the environment or pose a significant health risk, considering the likely pathways of exposure; and

(iv) The discharge shall not be acutely toxic to organisms passing through the mixing zone; and

(v) An alternate mixing zone shall not be granted if the substances discharged may accumulate in the sediments or bioaccumulate in aquatic life or wildlife to levels that adversely affect public health, safety, or welfare; aquatic life; wildlife; or other designated beneficial uses; and

(vi) In the event that the receiving stream is water quality limited, the requirements for discharges to water quality limited streams supersede this rule.

(5) Testing methods: The analytical testing methods for determining compliance with the water quality standards contained in this rule shall be in accordance with the most recent edition of **Standard Methods for the Examination of Water and Waste Water published jointly by the American Public Health Association, American Water Works Association, and Water Pollution Control Federation,** unless the Department has published an applicable superseding method, in which case testing shall be in accordance with the superseding method; provided, however, that testing in accordance with an alternative method shall comply with this rule if the Department has published the method or has approved the method in writing.

[ED. NOTE: The Table(s) referenced in this rule is not printed in the OAR Compilation. Copies are available from the agency.]

[Publications: The publication(s) referred to or incorporated by reference in this rule are available from the office of the agency.]

Stat. Auth.: ORS 468.735, ORS 468B.035 & ORS 468B.048
Stats. Implemented: ORS 468B.048
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 1-1980, f. & ef. 1-9-80; DEQ 18-1987, f. & ef. 9-4-87; DEQ 14-1991, f. & cert. ef. 8-13-91; DEQ 17-1992, f. & cert. ef. 8-7-92 (and corrected 8-13-92); DEQ 6-1995, f. & cert. ef. 2-28-95; DEQ 21-1995(Temp), f. & cert. ef. 9-21-95; DEQ 5-1995, f. & cert. ef. 3-7-96; DEQ 22-1997, f. & cert. ef. 10-24-97

340-041-0215

Minimum Design Criteria for Treatment and Control of Wastes

Subject to the implementation program set forth in OAR 340-041-0120, prior to discharge of any wastes from any new or modified facility to any waters of the North Coast - Lower Columbia River Basin, such wastes shall be treated and controlled in facilities designed in accordance with the following minimum criteria. (In designing treatment facilities, average conditions and a normal range of variability are generally used in establishing design criteria. A facility once completed and placed in operation should operate at or near the design limit most of the time but may operate below the design criteria limit at times due to variables which are unpredictable or uncontrollable. This is particularly true for biological treatment facilities. The actual operating limits are intended to be established by permit pursuant to ORS 468.740 and recognize that the actual performance level may at times be less than the design criteria.):

(1) Sewage wastes:

(a) During periods of low stream flows (approximately May 1 to October 31): Treatment resulting in monthly average effluent concentrations not to exceed 20 mg/l of BOD and 20 mg/l of SS or equivalent control;

(b) During the period of high stream flows (approximately November 1 to April 30) and for direct ocean discharges: A minimum of secondary treatment or equivalent control and unless otherwise specifically authorized by the Department, operation of all waste treatment and control facilities at maximum practicable efficiency and effectiveness so as to minimize waste discharges to public waters;

(c) Effluent BOD concentrations in mg/l, divided by the dilution factor (ratio of receiving stream flow to effluent flow) shall not exceed one unless otherwise approved by the EQC;

(d) Sewage wastes shall be disinfected, after treatment, equivalent to thorough mixing with sufficient chlorine to provide a residual of at least 1 part per million after 60 minutes of contact time unless otherwise specifically authorized by permit;

(e) Positive protection shall be provided to prevent bypassing raw or inadequately treated sewage to public waters unless otherwise approved by the Department where elimination of inflow and infiltration would be necessary but not presently practicable;

(f) More stringent waste treatment and control requirements may be imposed where special conditions may require.

(2) Industrial wastes:

(a) After maximum practicable inplant control, a minimum of secondary treatment or equivalent control (reduction of suspended solids and organic material where present in

~~significant quantities, effective disinfection where bacterial organisms of public health significance are present, and control of toxic or other deleterious substances);~~

~~(b) Specific industrial waste treatment requirements shall be determined on an individual basis in accordance with the provisions of this plan, applicable federal requirements, and the following:~~

~~(A) The uses which are or may likely be made of the receiving stream;~~

~~(B) The size and nature of flow of the receiving stream;~~

~~(C) The quantity and quality of wastes to be treated; and~~

~~(D) The presence or absence of other sources of pollution on the same watershed.~~

~~(c) Where industrial, commercial, or agricultural effluents contain significant quantities of potentially toxic elements, treatment requirements shall be determined utilizing appropriate bioassays;~~

~~(d) Industrial cooling waters containing significant heat loads shall be subjected to offstream cooling or heat recovery prior to discharge to public waters;~~

~~(e) Positive protection shall be provided to prevent bypassing of raw or inadequately treated industrial wastes to any public waters;~~

~~(f) Facilities shall be provided to prevent and contain spills of potentially toxic or hazardous materials and a positive program for containment and cleanup of such spills should they occur shall be developed and maintained.~~

~~Stat. Auth.: ORS 468~~
~~Stats. Implemented: ORS 468B.030~~
~~Hist.: DEQ 128, f. & ef. 1-21-77~~

~~Mid Coast Basin~~

~~340-041-0242~~

~~Beneficial Water Uses to be Protected~~

~~Water quality in the Mid Coast Basin (see **Figures 1** and **3**) shall be managed to protect the recognized beneficial uses as indicated in **Table 2**.~~

~~[ED. NOTE: The Figure(s) and Table referenced in this rule are not printed in the OAR Compilation. Copies are available from the agency.]~~

Stat. Auth.: ORS 468
Stats. Implemented: ORS 468B.048
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 9-1985, f. & ef. 8-6-85

340-041-0245

Water Quality Standards Not to be Exceeded (To be Adopted Pursuant to ORS 468.735 and Enforceable Pursuant to ORS 468.720, 468.990, and 468.992)

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

(2) No wastes shall be discharged and no activities shall be conducted which either alone or in combination with other wastes or activities will cause violation of the following standards in the waters of the Mid Coast Basin:

(a) Dissolved oxygen (DO): The changes adopted by the Commission on January 11, 1996, become effective July 1, 1996. Until that time, the requirements of this rule that were in effect on January 10, 1996, apply:

(A) For waterbodies identified by the Department as providing salmonid spawning, during the periods from spawning until fry emergence from the gravels, the following criteria apply:

(i) The dissolved oxygen shall not be less than 11.0 mg/l. However, if the minimum intergravel dissolved oxygen, measured as a spatial median, is 8.0 mg/l or greater, then the DO criterion is 9.0 mg/l;

(ii) Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 11.0 mg/l or 9.0 mg/l criteria, dissolved oxygen levels shall not be less than 95 percent of saturation.

(B) For waterbodies identified by the Department as providing salmonid spawning during the period from spawning until fry emergence from the gravels, the spatial median intergravel dissolved oxygen concentration shall not fall below 6.0 mg/l;

(C) A spatial median of 8.0 mg/l intergravel dissolved oxygen level shall be used to identify areas where the recognized beneficial use of salmonid spawning, egg incubation and fry emergence from the egg and from the gravels may be impaired and therefore require action by the Department. Upon determination that the spatial median intergravel dissolved oxygen concentration is below 8.0 mg/l, the Department may, in accordance with priorities established by the Department for evaluating water quality impaired

~~waterbodies, determine whether to list the waterbody as water quality limited under the Section 303(d) of the Clean Water Act, initiate pollution control strategies as warranted, and where needed cooperate with appropriate designated management agencies to evaluate and implement necessary best management practices for nonpoint source pollution control;~~

~~(D) For waterbodies identified by the Department as providing cold water aquatic life, the dissolved oxygen shall not be less than 8.0 mg/l as an absolute minimum. Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 8.0 mg/l, dissolved oxygen shall not be less than 90 percent of saturation. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 8.0 mg/l as a 30-day mean minimum, 6.5 mg/l as a seven-day minimum mean, and shall not fall below 6.0 mg/l as an absolute minimum (**Table 21**);~~

~~(E) For waterbodies identified by the Department as providing cool water aquatic life, the dissolved oxygen shall not be less than 6.5 mg/l as an absolute minimum. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 6.5 mg/l as a 30-day mean minimum, 5.0 mg/l as a seven-day minimum mean, and shall not fall below 4.0 mg/l as an absolute minimum (**Table 21**);~~

~~(F) For waterbodies identified by the Department as providing warm water aquatic life, the dissolved oxygen shall not be less than 5.5 mg/l as an absolute minimum. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 5.5 mg/l as a 30-day mean minimum, and shall not fall below 4.0 mg/l as an absolute minimum (**Table 21**);~~

~~(G) For estuarine water, the dissolved oxygen concentrations shall not be less than 6.5 mg/l (for coastal waterbodies);~~

~~(H) For marine waters, no measurable reduction in dissolved oxygen concentration shall be allowed.~~

~~(b) Temperature: The changes adopted by the Commission on January 11, 1996, become effective July 1, 1996. Until that time, the requirements of this rule that were in effect on January 10, 1996, apply. The method for measuring the numeric temperature criteria specified in this rule is defined in OAR 340-041-0006(54):~~

~~(A) To accomplish the goals identified in OAR 340-041-0120(11), unless specifically allowed under a Department approved surface water temperature management plan as required under OAR 340-041-0026(3)(a)(D), no measurable surface water temperature increase resulting from anthropogenic activities is allowed:~~

~~(i) In a basin for which salmonid fish rearing is a designated beneficial use, and in which surface water temperatures exceed 64.0°F (17.8°C);~~

~~(ii) In waters and periods of the year determined by the Department to support native salmonid spawning, egg incubation, and fry emergence from the egg and from the gravels in a basin which exceeds 55.0°F (12.8°C);~~

~~(iii) In waters determined by the Department to support or to be necessary to maintain the viability of native Oregon bull trout, when surface water temperatures exceed 50.0°F (10.0°C);~~

~~(iv) In waters determined by the Department to be ecologically significant cold-water refugia;~~

~~(v) In stream segments containing federally listed Threatened and Endangered species if the increase would impair the biological integrity of the Threatened and Endangered population;~~

~~(vi) In Oregon waters when the dissolved oxygen (DO) levels are within 0.5 mg/l or 10 percent saturation of the water column or intergravel DO criterion for a given stream reach or subbasin;~~

~~(vii) In natural lakes.~~

~~(B) An exceedance of the numeric criteria identified in subparagraphs (A)(i) through (iii) of this subsection will not be deemed a temperature standard violation if it occurs when the air temperature during the warmest seven-day period of the year exceeds the 90th percentile of the seven-day average daily maximum air temperature calculated in a yearly series over the historic record. However, during such periods, the anthropogenic sources must still continue to comply with their surface water temperature management plans developed under OAR 340-041-0026(3)(a)(D);~~

~~(C) Any source may petition the Commission for an exception to subparagraphs (A)(i) through (vii) of this subsection for discharge above the identified criteria if:~~

~~(i) The source provides the necessary scientific information to describe how the designated beneficial uses would not be adversely impacted; or~~

~~(ii) A source is implementing all reasonable management practices or measures; its activity will not significantly affect the beneficial uses; and the environmental cost of treating the parameter to the level necessary to assure full protection would outweigh the risk to the resource.~~

~~(D) Marine and estuarine waters: No significant increase above natural background temperatures shall be allowed, and water temperatures shall not be altered to a degree which creates or can reasonably be expected to create an adverse effect on fish or other aquatic life.~~

~~(c) Turbidity (Nephelometric Turbidity Units, NTU): No more than a ten percent cumulative increase in natural stream turbidities shall be allowed, as measured relative to a control point immediately upstream of the turbidity causing activity. However, limited duration activities necessary to address an emergency or to accommodate essential dredging, construction or other legitimate activities and which cause the standard to be exceeded may be authorized provided all practicable turbidity control techniques have been applied and one of the following has been granted:~~

~~(A) Emergency activities: Approval coordinated by DEQ with the Department of Fish and Wildlife under conditions they may prescribe to accommodate response to emergencies or to protect public health and welfare;~~

~~(B) Dredging, Construction or other Legitimate Activities: Permit or certification authorized under terms of Section 401 or 404 (Permits and Licenses, Federal Water Pollution Control Act) or OAR 141-085-0100 et seq. (Removal and Fill Permits, Division of State Lands), with limitations and conditions governing the activity set forth in the permit or certificate.~~

~~(d) pH (hydrogen ion concentration): pH values shall not fall outside the following ranges:~~

~~(A) Marine waters: 7.0 – 8.5;~~

~~(B) Estuarine and fresh waters: 6.5 – 8.5. The following exception applies: Waters impounded by dams existing on January 1, 1996, which have pHs that exceed the criteria shall not be considered in violation of the standard if the Department determines that the exceedance would not occur without the impoundment and that all practicable measures have been taken to bring the pH in the impounded waters into compliance with the criteria.~~

~~(e) Bacteria standards:~~

~~(A) Numeric Criteria: Organisms of the coliform group commonly associated with fecal sources (MPN or equivalent membrane filtration using a representative number of samples) shall not exceed the criteria described in subparagraphs (i) and (ii) of this paragraph:~~

~~(i) Freshwaters and Estuarine Waters Other than Shellfish Growing Waters:~~

~~(I) A 30-day log mean of 126 *E. coli* organisms per 100 ml, based on a minimum of five (5) samples;~~

~~(II) No single sample shall exceed 406 *E. coli* organisms per 100 ml.~~

~~(ii) Marine Waters and Estuarine Shellfish Growing Waters: A fecal coliform median concentration of 14 organisms per 100 milliliters, with not more than ten percent of the samples exceeding 43 organisms per 100 ml.~~

~~(B) Raw Sewage Prohibition: No sewage shall be discharged into or in any other manner be allowed to enter the waters of the State unless such sewage has been treated in a manner approved by the Department or otherwise allowed by these rules;~~

~~(C) Animal Waste: Runoff contaminated with domesticated animal wastes shall be minimized and treated to the maximum extent practicable before it is allowed to enter waters of the State;~~

~~(D) Effluent Limitations and Water Quality Limited Waterbodies: Effluent limitations to implement the criteria in this rule are found in OAR 340-041-0120(12) through (16). Implementation of the criteria in this rule in water quality limited waterbodies is described in OAR 340-041-0026(3)(a)(I) and OAR 340-041-0120(17).~~

~~(f) Bacterial pollution or other conditions deleterious to waters used for domestic purposes, livestock watering, irrigation, bathing, or shellfish propagation, or otherwise injurious to public health shall not be allowed;~~

~~(g) The liberation of dissolved gases, such as carbon dioxide, hydrogen sulfide, or other gases, in sufficient quantities to cause objectionable odors or to be deleterious to fish or other aquatic life, navigation, recreation, or other reasonable uses made of such waters shall not be allowed;~~

~~(h) The development of fungi or other growths having a deleterious effect on stream bottoms, fish or other aquatic life, or which are injurious to health, recreation, or industry shall not be allowed;~~

~~(i) The creation of tastes or odors or toxic or other conditions that are deleterious to fish or other aquatic life or affect the potability of drinking water or the palatability of fish or shellfish shall not be allowed;~~

~~(j) The formation of appreciable bottom or sludge deposits or the formation of any organic or inorganic deposits deleterious to fish or other aquatic life or injurious to public health, recreation, or industry shall not be allowed;~~

~~(k) Objectionable discoloration, scum, oily sleek, or floating solids, or coating of aquatic life with oil films shall not be allowed;~~

~~(l) Aesthetic conditions offensive to the human senses of sight, taste, smell, or touch shall not be allowed;~~

~~(m) Radioisotope concentrations shall not exceed maximum permissible concentrations (MPC's) in drinking water, edible fishes or shellfishes, wildlife, irrigated crops, livestock and dairy products, or pose an external radiation hazard;~~

~~(n) The concentration of total dissolved gas relative to atmospheric pressure at the point of sample collection shall not exceed 110 percent of saturation, except when stream flow exceeds the ten year, seven day average flood. However, for Hatchery receiving waters and waters of less than two feet in depth, the concentration of total dissolved gas relative to atmospheric pressure at the point of sample collection shall not exceed 105 percent of saturation;~~

~~(o) Total Dissolved Solids: Guide concentrations listed below shall not be exceeded unless otherwise specifically authorized by DEQ upon such conditions as it may deem necessary to carry out the general intent of this plan and to protect the beneficial uses set forth in OAR 340-041-0242: 100.0 mg/l;~~

~~(p) Toxic Substances:~~

~~(A) Toxic substances shall not be introduced above natural background levels in the waters of the state in amounts, concentrations, or combinations which may be harmful, may chemically change to harmful forms in the environment, or may accumulate in sediments or bio-accumulate in aquatic life or wildlife to levels that adversely affect public health, safety, or welfare; aquatic life; wildlife; or other designated beneficial uses;~~

~~(B) Levels of toxic substances shall not exceed the criteria listed in **Table 20** which were based on criteria established by EPA and published in **Quality Criteria for Water (1986)**, unless otherwise noted;~~

~~(C) The criteria in paragraph (B) of this subsection shall apply unless data from scientifically valid studies demonstrate that the most sensitive designated beneficial uses will not be adversely affected by exceeding a criterion or that a more restrictive criterion is warranted to protect beneficial uses, as accepted by the Department on a site specific basis. Where no published EPA criteria exist for a toxic substance, public health advisories and other published scientific literature may be considered and used, if appropriate, to set guidance values;~~

~~(D) Bio-assessment studies such as laboratory bioassays or instream measurements of indigenous biological communities, shall be conducted, as the Department deems necessary, to monitor the toxicity of complex effluents, other suspected discharges or chemical substances without numeric criteria, to aquatic life. These studies, properly conducted in accordance with standard testing procedures, may be considered as scientifically valid data for the purposes of paragraph (C) of this subsection. If toxicity occurs, the Department shall evaluate and implement measures necessary to reduce toxicity on a case-by-case basis.~~

~~(3) Where the naturally occurring quality parameters of waters of the Mid Coast Basin are outside the numerical limits of the above assigned water quality standards, the naturally occurring water quality shall be the standard. However, in such cases special restrictions, described in OAR 340-041-0026(3)(a)(C)(iii), apply to discharges that affect dissolved oxygen.~~

~~(4) Mixing zones:~~

~~(a) The Department may allow a designated portion of a receiving water to serve as a zone of dilution for wastewaters and receiving waters to mix thoroughly and this zone will be defined as a mixing zone;~~

~~(b) The Department may suspend all or part of the water quality standards, or set less restrictive standards, in the defined mixing zone, provided that the following conditions are met:~~

~~(A) The water within the mixing zone shall be free of:~~

~~(i) Materials in concentrations that will cause acute toxicity to aquatic life as measured by a Department approved bioassay method. Acute toxicity is lethality to aquatic life as measured by a significant difference in lethal concentration between the control and 100 percent effluent in an acute bioassay test. Lethality in 100 percent effluent may be allowed due to ammonia and chlorine only when it is demonstrated on a case-by-case basis that immediate dilution of the effluent within the mixing zone reduces toxicity below lethal concentrations. The Department may on a case-by-case basis establish a zone of immediate dilution if appropriate for other parameters;~~

~~(ii) Materials that will settle to form objectionable deposits;~~

~~(iii) Floating debris, oil, scum, or other materials that cause nuisance conditions;~~

~~(iv) Substances in concentrations that produce deleterious amounts of fungal or bacterial growths.~~

~~(B) The water outside the boundary of the mixing zone shall:~~

~~(i) Be free of materials in concentrations that will cause chronic (sublethal) toxicity. Chronic toxicity is measured as the concentration that causes long-term sublethal effects, such as significantly impaired growth or reproduction in aquatic organisms, during a testing period based on test species life cycle. Procedures and end points will be specified by the Department in wastewater discharge permits;~~

~~(ii) Meet all other water quality standards under normal annual low flow conditions.~~

~~(c) The limits of the mixing zone shall be described in the wastewater discharge permit. In determining the location, surface area, and volume of a mixing zone area, the~~

~~Department may use appropriate mixing zone guidelines to assess the biological, physical, and chemical character of receiving waters, and effluent, and the most appropriate placement of the outfall, to protect instream water quality, public health, and other beneficial uses. Based on receiving water and effluent characteristics, the Department shall define a mixing zone in the immediate area of a wastewater discharge to:~~

~~(A) Be as small as feasible;~~

~~(B) Avoid overlap with any other mixing zones to the extent possible and be less than the total stream width as necessary to allow passage of fish and other aquatic organisms;~~

~~(C) Minimize adverse effects on the indigenous biological community especially when species are present that warrant special protection for their economic importance, tribal significance, ecological uniqueness, or for other similar reasons as determined by the Department and does not block the free passage of aquatic life;~~

~~(D) Not threaten public health;~~

~~(E) Minimize adverse effects on other designated beneficial uses outside the mixing zone.~~

~~(d) The Department may request the applicant of a permitted discharge for which a mixing zone is required, to submit all information necessary to define a mixing zone, such as:~~

~~(A) Type of operation to be conducted;~~

~~(B) Characteristics of effluent flow rates and composition;~~

~~(C) Characteristics of low flows of receiving waters;~~

~~(D) Description of potential environmental effects;~~

~~(E) Proposed design for outfall structures.~~

~~(e) The Department may, as necessary, require mixing zone monitoring studies and/or bioassays to be conducted to evaluate water quality or biological status within and outside the mixing zone boundary;~~

~~(f) The Department may change mixing zone limits or require the relocation of an outfall if it determines that the water quality within the mixing zone adversely affects any existing beneficial uses in the receiving waters.~~

~~(g) **Alternate requirements for mixing zones**: For some existing or proposed discharges to some receiving streams, it may not be practicable to treat wastewater to meet instream water quality standards at the point of discharge or within a short distance from the point~~

of discharge. Some of these discharges could be allowed without impairing the overall ecological integrity of the receiving streams, or may provide an overall benefit to the receiving stream. This section specifies the conditions and circumstances under which a mixing zone may be allowed by the Department that extends beyond the immediate area around a discharge point, or that extends across a stream width. An alternate mixing zone may be approved if the applicant demonstrates to the Department's satisfaction that the discharge (A) creates an overall environmental benefit, or (B) is to a constructed water course, or (C) is insignificant. The three circumstances under which alternate mixing zones may be established are described further below.

(A) **Overall environmental benefit**.

(i) Qualifying for alternate mixing zone based on overall environmental benefit: In order to qualify for an alternate mixing zone based on a finding of overall environmental benefit, the discharger must demonstrate to the Department's satisfaction the following:

(I) That all practical strategies have been or will be implemented to minimize the pollutant loads in the effluent; and

(II) For proposed increased discharges, the current actual discharge and mixing zone does not meet the requirements of a standard mixing zone; and

(III) Either that, on balance, an environmental benefit would be lost if the discharge did not occur, or that the discharger is prepared to undertake other actions that will mitigate the effect of the discharge to an extent resulting in a net environmental benefit to the receiving stream.

(IV) For the purposes of this rule, the term "practical" shall include environmental impact, availability of alternatives, cost of alternatives, and other relevant factors.

(ii) Studies required and evaluation of studies: In order to demonstrate that, on balance, an environmental benefit will result from the discharge, the following information shall be provided by the applicant:

(I) The effluent flow and pollutant loads that are detected or expected in the effluent, by month, both average and expected worst case discharges. The parameters to be evaluated include at a minimum temperature, biochemical oxygen demand, total suspended solids, total dissolved solids, pH, settleable solids, e. coli bacteria, oil and grease, any pollutants listed in Table 20 of this rule division, and any pollutant for which the receiving stream has been designated by the Department as water quality limited; and

(II) Receiving stream flow, by month; and

(III) The expected impact of the discharge, by month, on the receiving stream for the entire proposed mixing zone area for all of the pollutants listed above. Included in this

~~analysis shall be a comparison of the receiving stream water quality with the discharge and without the discharge; and~~

~~(IV) A description of fish, other vertebrate populations, and macroinvertebrates that reside in or are likely to pass through the proposed mixing zone, including expected location (if known), species identification, stage of development, and time of year when their presence is expected. For existing discharges, the applicant shall provide the same information for similar nearby streams that are unaffected by wastewater discharges. In addition, any threatened or endangered species in the immediate vicinity of the receiving stream shall be identified; and~~

~~(V) The expected impact of the discharge on aquatic organisms and/or fish passage, including any expected negative impacts from the effluent attracting fish where that is not desirable; and~~

~~(VI) A description of the expected environmental benefits to be derived from the discharge or other mitigation measures proposed by the applicant, including but not limited to improvements in water quality, improvements in fish passage, and improvements in aquatic habitat. If the applicant proposes to undertake mitigation measures designed to provide environmental benefits (e.g., purchasing water or water conservation rights to increase stream flows or establishing stream cover to decrease temperature), the applicant shall describe the mitigation measures in detail, including a description of the steps it will take to ensure that the benefits of the mitigation measures are attained and are not lost or diminished over time.~~

~~(VII) Some or all of the above study requirements may be waived by the Department, if the Department determines that the information is not needed. In the event that the Department does waive some or all of the above study requirements, the basis for waiving the requirements will be included in the permit evaluation report upon the next permit renewal or modification relating to the mixing zone.~~

~~(VIII) Upon request of the Department, the applicant shall conduct additional studies to further evaluate the impact of the discharge, which may include whole effluent toxicity testing, stream surveys for water quality, stream surveys for fish and other aquatic organisms, or other studies as specified by the Department.~~

~~(IX) In evaluating whether an existing or proposed increase in an existing discharge would result in a net environmental benefit, the applicant shall use the native biological community in a nearby, similar stream that is unaffected by wastewater discharges. The Department shall consider all information generated as required in this rule and other relevant information. The evaluation shall consider benefits to the native aquatic biological community only.~~

~~(iii) Permit conditions: Upon determination by the Department that the discharge and mitigation measures (if any) will likely result in an overall environmental benefit, the Department shall include appropriate permit conditions to insure that the environmental~~

~~benefits are attained and continue. Such permit conditions may include but not be limited to:~~

~~(I) Maximum allowed effluent flows and pollutant loads;~~

~~(II) Requirements to maintain land ownership, easements, contracts, or other legally binding measures necessary to assure that mitigation measures, if any, remain in place and effective;~~

~~(III) Special operating conditions;~~

~~(IV) Monitoring and reporting requirements; and~~

~~(V) Studies to evaluate the effectiveness of mitigation measures.~~

~~(B) **Constructed water course**: A mixing zone may be extended through a constructed water course and into a natural water course. For the purposes of this rule, a constructed water course is one that was constructed for irrigation, site drainage, or wastewater conveyance, and has the following characteristics:~~

~~(i) Irrigation flows, stormwater runoff, or wastewater flows have replaced natural streamflow regimes; and~~

~~(ii) The channel form is greatly simplified in lengthwise and cross sectional profiles; and~~

~~(iii) Physical and biological characteristics that differ significantly from nearby natural streams; and~~

~~(iv) A much lower diversity of aquatic species than found in nearby natural streams; and~~

~~(v) If the constructed water course is an irrigation canal, then it must have effective fish screens in place to qualify as a constructed water course.~~

~~(C) **Insignificant discharges**: Insignificant discharges are those that either by volume, pollutant characteristics, and/or temporary nature are expected to have little if any impact on beneficial uses in the receiving stream, and for which the extensive evaluations required for discharges to smaller streams are not warranted. For the purposes of this rule, only filter backwash discharges and underground storage tank cleanups are considered insignificant discharges.~~

~~(D) Other requirements for alternate mixing zones: The following are additional requirements for dischargers requesting an alternate mixing zone:~~

~~(i) Most discharges that qualify for an alternate mixing zone will extend through the receiving stream until a larger stream is reached, where thorough mixing of the effluent can occur and where the edge of the allowed mixing zone will be located. The portion of~~

the mixing zone in the larger stream must meet all of the requirements of the standard mixing zone, including not blocking aquatic life passage; and

(ii) An alternate mixing zone shall not be granted if a municipal drinking water intake is located within the proposed mixing zone, and the discharge has a significant adverse impact on the drinking water source; and

(iii) The discharge will not pose an unreasonable hazard to the environment or pose a significant health risk, considering the likely pathways of exposure; and

(iv) The discharge shall not be acutely toxic to organisms passing through the mixing zone; and

(v) An alternate mixing zone shall not be granted if the substances discharged may accumulate in the sediments or bioaccumulate in aquatic life or wildlife to levels that adversely affect public health, safety, or welfare; aquatic life; wildlife; or other designated beneficial uses; and

(vi) In the event that the receiving stream is water quality limited, the requirements for discharges to water quality limited streams supersede this rule.

(5) Testing methods: The analytical testing methods for determining compliance with the water quality standards contained in this rule shall be in accordance with the most recent edition of **Standard Methods for the Examination of Water and Waste Water published jointly by the American Public Health Association, American Water Works Association, and Water Pollution Control Federation,** unless the Department has published an applicable superseding method, in which case testing shall be in accordance with the superseding method; provided, however, that testing in accordance with an alternative method shall comply with this rule if the Department has published the method or has approved the method in writing.

[ED. NOTE: The Table(s) referenced in this rule is not printed in the OAR Compilation. Copies are available from the agency.]

[Publications: The publication(s) referred to or incorporated by reference in this rule are available from the office of the agency.]

Stat. Auth.: ORS 468.735, ORS 468B.035 & ORS 468B.048
Stats. Implemented: ORS 468B.048
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 1-1980, f. & ef. 1-9-80; DEQ 18-1987, f. & ef. 9-4-87; DEQ 14-1991, f. & cert. ef. 8-13-91; DEQ 17-1992, f. & cert. ef. 8-7-92 (and corrected 8-13-92); DEQ 21-1995(Temp), f. & cert. ef. 9-21-95; DEQ 5-1996, f. & cert. ef. 3-7-96; DEQ 22-1997, f. & cert. ef. 10-24-97

340-041-0255

Minimum Design Criteria for Treatment and Control of Wastes

Subject to the implementation program set forth in OAR 340-041-0120, prior to discharge of any wastes from any new or modified facility to any waters of the Mid Coast Basin, such wastes shall be treated and controlled in facilities designed in accordance with the following minimum criteria. (In designing treatment facilities, average conditions and a normal range of variability are generally used in establishing design criteria. A facility once completed and placed in operation should operate at or near the design limit most of the time, but may operate below the design criteria limit at times due to variables which are unpredictable or uncontrollable. This is particularly true for biological treatment facilities. The actual operating limits are intended to be established by permit pursuant to ORS 468.740 and recognize that the actual performance level may at times be less than the design criteria.):

(1) Sewage wastes:

(a) During periods of low stream flows (approximately May 1 to October 31): Treatment resulting in monthly average effluent concentrations not to exceed 20 mg/l of BOD and 20 mg/l of SS, or equivalent control;

(b) During the period of high stream flows (approximately November 1 to April 30) and for direct ocean discharges: a minimum of secondary treatment or equivalent control, and unless otherwise specifically authorized by the Department, operation of all waste treatment and control facilities at maximum practicable efficiency and effectiveness so as to minimize waste discharges to public waters;

(c) Effluent BOD concentrations in mg/l, divided by the dilution factor (ratio of receiving stream flow to effluent flow) shall not exceed one unless otherwise approved by the EQC;

(d) Sewage wastes shall be disinfected, after treatment, equivalent to thorough mixing with sufficient chlorine to provide a residual of at least one part per million after 60 minutes of contact time unless otherwise specifically authorized by permit;

(e) Positive protection shall be provided to prevent bypassing raw or inadequately treated sewage to public waters unless otherwise approved by the Department where elimination of inflow and infiltration would be necessary but not presently practicable;

(f) More stringent waste treatment and control requirements may be imposed where special conditions may require.

(2) Industrial wastes:

(a) After maximum practicable inplant control, a minimum of secondary treatment or equivalent control (reduction of suspended solids and organic material where present in

~~significant quantities, effective disinfection where bacterial organisms of public health significance are present, and control of toxic or other deleterious substances);~~

~~(b) Specific industrial waste treatment requirements shall be determined on an individual basis in accordance with the provisions of this plan, applicable federal requirements, and the following:~~

~~(A) The uses which are or may likely be made of the receiving stream;~~

~~(B) The size and nature of flow of the receiving stream;~~

~~(C) The quantity and quality of wastes to be treated; and~~

~~(D) The presence or absence of other sources of pollution on the same watershed.~~

~~(c) Where industrial, commercial, or agricultural effluents contain significant quantities of potentially toxic elements, treatment requirements shall be determined utilizing appropriate bioassays;~~

~~(d) Industrial cooling waters containing significant heat loads shall be subjected to offstream cooling or heat recovery prior to discharge to public waters;~~

~~(e) Positive protection shall be provided to prevent bypassing of raw or inadequately treated industrial wastes to any public waters;~~

~~(f) Facilities shall be provided to prevent and contain spills of potentially toxic or hazardous materials and a positive program for containment and cleanup of such spills should they occur shall be developed and maintained.~~

~~Stat. Auth.: ORS 468~~
~~Stats. Implemented: ORS 468B.030~~
~~Hist.: DEQ 128, f. & ef. 1-21-77~~

~~340-041-0270~~

~~Special Policies and Guidelines~~

~~In order to preserve the existing high quality water in Clear Lake north of Florence for use as a public water supply source requiring only minimal filtration, it is the policy of the Environmental Quality Commission to protect the Clear Lake watershed including both surface and groundwaters, from existing and potential contamination sources with the following requirements:~~

~~(1) The total phosphorus maximum annual loading discharged into Clear Lake shall not exceed 241 pounds per year from all sources.~~

(2) The total phosphorus maximum annual loading for the Clear Lake watershed shall be deemed exceeded if the median concentration of total phosphorus from samples collected in the epilimnion between May 1 and September 30 exceed nine micrograms per liter during two consecutive years.

(3) Of the total phosphorus loading of 241 pounds per year specified in section (1) of this rule, 192 pounds per year shall be considered current background and Department reserve and shall not be available to other sources.

(4) The total phosphorus maximum annual loading discharged into Collard Lake shall not exceed 123 pounds per year.

(5) If water quality monitoring within the Clear Lake watershed indicates degradation, the Commission may require additional studies, corrective actions, or both, by rule. Such corrective actions may include but are not limited to the construction of sewage collection and off-site treatment and disposal facilities.

Stat. Auth.: ORS 183.335, ORS 454.625, ORS 468.020, ORS 468B.010 & ORS 468B.020.
Stats. Implemented: ORS 454.685
Hist.: DEQ 3-1983, f. & ef. 4-18-83; DEQ 44-1990, f. & cert. ef. 12-19-90; DEQ 20-1996(Temp), f. & cert. ef. 10-14-96; DEQ 4-1997, f. & cert. ef. 3-7-97

Umpqua Basin

340-041-0282

Beneficial Water Uses to be Protected

Water quality in the Umpqua River Basin (see **Figures 1** and **4**) shall be managed to protect the recognized beneficial uses as indicated in **Table 3**.

[ED. NOTE: The Figure(s) and Table referenced in this rule are not printed in the OAR Compilation. Copies are available from the agency.]

Stat. Auth.: ORS 468
Stats. Implemented: ORS 468B.048
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 9-1985, f. & ef. 8-6-85

340-041-0285

Water Quality Standards Not to be Exceeded (To be Adopted Pursuant to ORS 468.735 and Enforceable Pursuant to ORS 468.720, 468.990, and 468.992)

(1) Notwithstanding the water quality standards contained below, the highest and best practicable treatment and/or control of wastes, activities, and flows shall in every case be

~~provided so as to maintain dissolved oxygen and overall water quality at the highest possible levels and water temperatures, coliform bacteria concentrations, dissolved chemical substances, toxic materials, radioactivity, turbidities, color, odor, and other deleterious factors at the lowest possible levels.~~

~~(2) No wastes shall be discharged and no activities shall be conducted which either alone or in combination with other wastes or activities will cause violation of the following standards in the waters of the Umpqua River Basin:~~

~~(a) Dissolved oxygen (DO): The changes adopted by the Commission on January 11, 1996, become effective July 1, 1996. Until that time, the requirements of this rule that were in effect on January 10, 1996, apply:~~

~~(A) For waterbodies identified by the Department as providing salmonid spawning, during the periods from spawning until fry emergence from the gravels, the following criteria apply:~~

~~(i) The dissolved oxygen shall not be less than 11.0 mg/l. However, if the minimum intergravel dissolved oxygen, measured as a spatial median, is 8.0 mg/l or greater, then the DO criterion is 9.0 mg/l;~~

~~(ii) Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 11.0 mg/l or 9.0 mg/l criteria, dissolved oxygen levels shall not be less than 95 percent of saturation.~~

~~(B) For waterbodies identified by the Department as providing salmonid spawning during the period from spawning until fry emergence from the gravels, the spatial median intergravel dissolved oxygen concentration shall not fall below 6.0 mg/l;~~

~~(C) A spatial median of 8.0 mg/l intergravel dissolved oxygen level shall be used to identify areas where the recognized beneficial use of salmonid spawning, egg incubation and fry emergence from the egg and from the gravels may be impaired and therefore require action by the Department. Upon determination that the spatial median intergravel dissolved oxygen concentration is below 8.0 mg/l, the Department may, in accordance with priorities established by the Department for evaluating water quality impaired waterbodies, determine whether to list the waterbody as water quality limited under the Section 303(d) of the Clean Water Act, initiate pollution control strategies as warranted, and where needed cooperate with appropriate designated management agencies to evaluate and implement necessary best management practices for nonpoint source pollution control;~~

~~(D) For waterbodies identified by the Department as providing cold water aquatic life, the dissolved oxygen shall not be less than 8.0 mg/l as an absolute minimum. Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 8.0 mg/l, dissolved oxygen shall not be less than 90 percent of saturation. At the discretion of the Department, when the Department determines that adequate information~~

~~exists, the dissolved oxygen shall not fall below 8.0 mg/l as a 30-day mean minimum, 6.5 mg/l as a seven-day minimum mean, and shall not fall below 6.0 mg/l as an absolute minimum (**Table 21**);~~

~~(E) For waterbodies identified by the Department as providing cool-water aquatic life, the dissolved oxygen shall not be less than 6.5 mg/l as an absolute minimum. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 6.5 mg/l as a 30-day mean minimum, 5.0 mg/l as a seven-day minimum mean, and shall not fall below 4.0 mg/l as an absolute minimum (**Table 21**);~~

~~(F) For waterbodies identified by the Department as providing warm-water aquatic life, the dissolved oxygen shall not be less than 5.5 mg/l as an absolute minimum. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 5.5 mg/l as a 30-day mean minimum, and shall not fall below 4.0 mg/l as an absolute minimum (**Table 21**);~~

~~(G) For estuarine water, the dissolved oxygen concentrations shall not be less than 6.5 mg/l (for coastal waterbodies);~~

~~(H) For marine waters, no measurable reduction in dissolved oxygen concentration shall be allowed.~~

~~(b) Temperature: The changes adopted by the Commission on January 11, 1996, become effective July 1, 1996. Until that time, the requirements of this rule that were in effect on January 10, 1996, apply. The method for measuring the numeric temperature criteria specified in this rule is defined in OAR 340-041-0006(54):~~

~~(A) To accomplish the goals identified in OAR 340-041-0120(11), unless specifically allowed under a Department-approved surface water temperature management plan as required under OAR 340-041-0026(3)(a)(D), no measurable surface water temperature increase resulting from anthropogenic activities is allowed:~~

~~(i) In a basin for which salmonid fish rearing is a designated beneficial use, and in which surface water temperatures exceed 64.0°F (17.8°C);~~

~~(ii) In waters and periods of the year determined by the Department to support native salmonid spawning, egg incubation, and fry emergence from the egg and from the gravels in a basin which exceeds 55.0°F (12.8°C);~~

~~(iii) In waters determined by the Department to support or to be necessary to maintain the viability of native Oregon bull trout, when surface water temperatures exceed 50.0°F (10.0°C);~~

~~(iv) In waters determined by the Department to be ecologically significant cold-water refugia;~~

~~(v) In stream segments containing federally listed Threatened and Endangered species if the increase would impair the biological integrity of the Threatened and Endangered population;~~

~~(vi) In Oregon waters when the dissolved oxygen (DO) levels are within 0.5 mg/l or 10 percent saturation of the water column or intergravel DO criterion for a given stream reach or subbasin;~~

~~(vii) In natural lakes.~~

~~(B) An exceedance of the numeric criteria identified in subparagraphs (A)(i) through (iii) of this subsection will not be deemed a temperature standard violation if it occurs when the air temperature during the warmest seven-day period of the year exceeds the 90th percentile of the seven-day average daily maximum air temperature calculated in a yearly series over the historic record. However, during such periods, the anthropogenic sources must still continue to comply with their surface water temperature management plans developed under OAR 340-041-0026(3)(a)(D);~~

~~(C) Any source may petition the Commission for an exception to subparagraphs (A)(i) through (vii) of this subsection for discharge above the identified criteria if:~~

~~(i) The source provides the necessary scientific information to describe how the designated beneficial uses would not be adversely impacted; or~~

~~(ii) A source is implementing all reasonable management practices or measures; its activity will not significantly affect the beneficial uses; and the environmental cost of treating the parameter to the level necessary to assure full protection would outweigh the risk to the resource.~~

~~(D) Marine and estuarine waters: No significant increase above natural background temperatures shall be allowed, and water temperatures shall not be altered to a degree which creates or can reasonably be expected to create an adverse effect on fish or other aquatic life.~~

~~(c) Turbidity (Nephelometric Turbidity Units, NTU):~~

~~(A) No more than a ten percent cumulative increase in natural stream turbidities shall be allowed, as measured relative to a control point immediately upstream of the turbidity causing activity. However, limited duration activities necessary to address an emergency or to accommodate essential dredging, construction or other legitimate activities and which cause the standard to be exceeded may be authorized provided all practicable turbidity control techniques have been applied and one of the following has been granted:~~

~~(i) Emergency activities: Approval coordinated by DEQ with the Department of Fish and Wildlife under conditions they may prescribe to accommodate response to emergencies or to protect public health and welfare;~~

(ii) Dredging, Construction or other Legitimate Activities: Permit or certification authorized under terms of Section 401 or 404 (Permits and Licenses, Federal Water Pollution Control Act) or OAR 141-085-0100 et seq. (Removal and Fill Permits, Division of State Lands), with limitations and conditions governing the activity set forth in the permit or certificate.

(B) When appropriate studies are completed by the Corps of Engineers, or others, the Environmental Quality Commission will, consistent with the provisions of ORS Chapter 468, modify the turbidity standard, on a case-by-case basis if necessary, to accommodate such specific water storage and development projects in the South Umpqua Basin as are found to be in the best overall interest of the public.

(d) pH (hydrogen ion concentration):

(A) Fresh waters (except Cascade lakes) and estuarine waters: pH values shall not fall outside the range of 6.5 to 8.5. The following exception applies: Waters impounded by dams existing on January 1, 1996, which have pHs that exceed the criteria shall not be considered in violation of the standard if the Department determines that the exceedance would not occur without the impoundment and that all practicable measures have been taken to bring the pH in the impounded waters into compliance with the criteria;

(B) Marine waters: pH values shall not fall outside the range of 7.0 to 8.5;

(C) Cascade lakes above 3,000 feet altitude: pH values shall not fall outside the range of 6.0 to 8.5.

(e) Bacteria standards:

(A) Numeric Criteria: Organisms of the coliform group commonly associated with fecal sources (MPN or equivalent membrane filtration using a representative number of samples) shall not exceed the criteria described in subparagraphs (i) and (ii) of this paragraph:

(i) Freshwaters and Estuarine Waters Other than Shellfish Growing Waters:

(I) A 30-day log mean of 126 *E. coli* organisms per 100 ml, based on a minimum of five (5) samples;

(II) No single sample shall exceed 406 *E. coli* organisms per 100 ml.

(ii) Marine Waters and Estuarine Shellfish Growing Waters: A fecal coliform median concentration of 14 organisms per 100 milliliters, with not more than ten percent of the samples exceeding 43 organisms per 100 ml.

~~(B) Raw Sewage Prohibition: No sewage shall be discharged into or in any other manner be allowed to enter the waters of the State unless such sewage has been treated in a manner approved by the Department or otherwise allowed by these rules;~~

~~(C) Animal Waste: Runoff contaminated with domesticated animal wastes shall be minimized and treated to the maximum extent practicable before it is allowed to enter waters of the State;~~

~~(D) Effluent Limitations and Water Quality Limited Waterbodies: Effluent limitations to implement the criteria in this rule are found in OAR 340-041-0120(12) through (16). Implementation of the criteria in this rule in water quality limited waterbodies is described in OAR 340-041-0026(3)(a)(I) and OAR 340-041-0120(17).~~

~~(f) Bacterial pollution or other conditions deleterious to waters used for domestic purposes, livestock watering, irrigation, bathing, or shellfish propagation, or otherwise injurious to public health shall not be allowed;~~

~~(g) The liberation of dissolved gases, such as carbon dioxide, hydrogen sulfide, or other gases, in sufficient quantities to cause objectionable odors or to be deleterious to fish or other aquatic life, navigation, recreation, or other reasonable uses made of such waters shall not be allowed;~~

~~(h) The development of fungi or other growths having a deleterious effect on stream bottoms, fish or other aquatic life, or which are injurious to health, recreation, or industry shall not be allowed;~~

~~(i) The creation of tastes or odors or toxic or other conditions that are deleterious to fish or other aquatic life or affect the potability of drinking water or the palatability of fish or shellfish shall not be allowed;~~

~~(j) The formation of appreciable bottom or sludge deposits or the formation of any organic or inorganic deposits deleterious to fish or other aquatic life or injurious to public health, recreation, or industry shall not be allowed;~~

~~(k) Objectionable discoloration, scum, oily sleek or floating solids, or coating of aquatic life with oil films shall not be allowed;~~

~~(l) Aesthetic conditions offensive to the human senses of sight, taste, smell, or touch shall not be allowed;~~

~~(m) Radioisotope concentrations shall not exceed maximum permissible concentrations (MPC's) in drinking water, edible fishes or shellfishes, wildlife, irrigated crops, livestock and dairy products, or pose an external radiation hazard;~~

~~(n) The concentration of total dissolved gas relative to atmospheric pressure at the point of sample collection shall not exceed 110 percent of saturation, except when stream flow~~

~~exceeds the ten-year, seven-day average flood. However, for Hatchery receiving waters and waters of less than two feet in depth, the concentration of total dissolved gas relative to atmospheric pressure at the point of sample collection shall not exceed 105 percent of saturation;~~

~~(o) Total Dissolved Solids: Guide concentrations listed below shall not be exceeded unless otherwise specifically authorized by DEQ upon such conditions as it may deem necessary to carry out the general intent of this plan and to protect the beneficial uses set forth in OAR 340-041-0282: 500.0 mg/l;~~

~~(p) Toxic Substances:~~

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

~~(B) Levels of toxic substances shall not exceed the criteria listed in **Table 20** which were based on criteria established by EPA and published in **Quality Criteria for Water (1986)**, unless otherwise noted;~~

~~(C) The criteria in paragraph (B) of this subsection shall apply unless data from scientifically valid studies demonstrate that the most sensitive designated beneficial uses will not be adversely affected by exceeding a criterion or that a more restrictive criterion is warranted to protect beneficial uses, as accepted by the Department on a site specific basis. Where no published EPA criteria exist for a toxic substance, public health advisories and other published scientific literature may be considered and used, if appropriate, to set guidance values;~~

~~(D) Bio-assessment studies such as laboratory bioassays or instream measurements of indigenous biological communities, shall be conducted, as the Department deems necessary, to monitor the toxicity of complex effluents, other suspected discharges or chemical substances without numeric criteria, to aquatic life. These studies, properly conducted in accordance with standard testing procedures, may be considered as scientifically valid data for the purposes of paragraph (C) of this subsection. If toxicity occurs, the Department shall evaluate and implement measures necessary to reduce toxicity on a case-by-case basis.~~

~~(3) Where the naturally occurring quality parameters of waters of the Umpqua River Basin are outside the numerical limits of the above assigned water quality standards, the naturally occurring quality shall be the standard. However, in such cases special restrictions, described in OAR 340-041-0026(3)(a)(C)(iii), apply to discharges that affect dissolved oxygen.~~

~~(4) Mixing zones:~~

~~(a) The Department may allow a designated portion of a receiving water to serve as a zone of dilution for wastewaters and receiving waters to mix thoroughly and this zone will be defined as a mixing zone;~~

~~(b) The Department may suspend all or part of the water quality standards, or set less restrictive standards, in the defined mixing zone, provided that the following conditions are met:~~

~~(A) The water within the mixing zone shall be free of:~~

~~(i) Materials in concentrations that will cause acute toxicity to aquatic life as measured by a Department approved bioassay method. Acute toxicity is lethality to aquatic life as measured by a significant difference in lethal concentration between the control and 100 percent effluent in an acute bioassay test. Lethality in 100 percent effluent may be allowed due to ammonia and chlorine only when it is demonstrated on a case-by-case basis that immediate dilution of the effluent within the mixing zone reduces toxicity below lethal concentrations. The Department may on a case-by-case basis establish a zone of immediate dilution if appropriate for other parameters;~~

~~(ii) Materials that will settle to form objectionable deposits;~~

~~(iii) Floating debris, oil, scum, or other materials that cause nuisance conditions;~~

~~(iv) Substances in concentrations that produce deleterious amounts of fungal or bacterial growths.~~

~~(B) The water outside the boundary of the mixing zone shall:~~

~~(i) Be free of materials in concentrations that will cause chronic (sublethal) toxicity. Chronic toxicity is measured as the concentration that causes long term sublethal effects, such as significantly impaired growth or reproduction in aquatic organisms, during a testing period based on test species life cycle. Procedures and end points will be specified by the Department in wastewater discharge permits;~~

~~(ii) Meet all other water quality standards under normal annual low flow conditions.~~

~~(c) The limits of the mixing zone shall be described in the wastewater discharge permit. In determining the location, surface area, and volume of a mixing zone area, the Department may use appropriate mixing zone guidelines to assess the biological, physical, and chemical character of receiving waters, and effluent, and the most appropriate placement of the outfall, to protect instream water quality, public health, and other beneficial uses. Based on receiving water and effluent characteristics, the Department shall define a mixing zone in the immediate area of a wastewater discharge to:~~

~~(A) Be as small as feasible;~~

(B) Avoid overlap with any other mixing zones to the extent possible and be less than the total stream width as necessary to allow passage of fish and other aquatic organisms;

(C) Minimize adverse effects on the indigenous biological community especially when species are present that warrant special protection for their economic importance, tribal significance, ecological uniqueness, or for other similar reasons as determined by the Department and does not block the free passage of aquatic life;

(D) Not threaten public health;

(E) Minimize adverse effects on other designated beneficial uses outside the mixing zone.

(d) The Department may request the applicant of a permitted discharge for which a mixing zone is required, to submit all information necessary to define a mixing zone, such as:

(A) Type of operation to be conducted;

(B) Characteristics of effluent flow rates and composition;

(C) Characteristics of low flows of receiving waters;

(D) Description of potential environmental effects;

(E) Proposed design for outfall structures.

(e) The Department may, as necessary, require mixing zone monitoring studies and/or bioassays to be conducted to evaluate water quality or biological status within and outside the mixing zone boundary;

(f) The Department may change mixing zone limits or require the relocation of an outfall if it determines that the water quality within the mixing zone adversely affects any existing beneficial uses in the receiving waters.

(g) **Alternate requirements for mixing zones**: For some existing or proposed discharges to some receiving streams, it may not be practicable to treat wastewater to meet instream water quality standards at the point of discharge or within a short distance from the point of discharge. Some of these discharges could be allowed without impairing the overall ecological integrity of the receiving streams, or may provide an overall benefit to the receiving stream. This section specifies the conditions and circumstances under which a mixing zone may be allowed by the Department that extends beyond the immediate area around a discharge point, or that extends across a stream width. An alternate mixing zone may be approved if the applicant demonstrates to the Department's satisfaction that the discharge (A) creates an overall environmental benefit, or (B) is to a constructed water course, or (C) is insignificant. The three circumstances under which alternate mixing zones may be established are described further below.

~~(A) **Overall environmental benefit.**~~

~~(i) Qualifying for alternate mixing zone based on overall environmental benefit: In order to qualify for an alternate mixing zone based on a finding of overall environmental benefit, the discharger must demonstrate to the Department's satisfaction the following:~~

~~(I) That all practical strategies have been or will be implemented to minimize the pollutant loads in the effluent; and~~

~~(II) For proposed increased discharges, the current actual discharge and mixing zone does not meet the requirements of a standard mixing zone; and~~

~~(III) Either that, on balance, an environmental benefit would be lost if the discharge did not occur, or that the discharger is prepared to undertake other actions that will mitigate the effect of the discharge to an extent resulting in a net environmental benefit to the receiving stream.~~

~~(IV) For the purposes of this rule, the term "practical" shall include environmental impact, availability of alternatives, cost of alternatives, and other relevant factors.~~

~~(ii) Studies required and evaluation of studies: In order to demonstrate that, on balance, an environmental benefit will result from the discharge, the following information shall be provided by the applicant:~~

~~(I) The effluent flow and pollutant loads that are detected or expected in the effluent, by month, both average and expected worst case discharges. The parameters to be evaluated include at a minimum temperature, biochemical oxygen demand, total suspended solids, total dissolved solids, pH, settleable solids, e. coli bacteria, oil and grease, any pollutants listed in Table 20 of this rule division, and any pollutant for which the receiving stream has been designated by the Department as water quality limited; and~~

~~(II) Receiving stream flow, by month; and~~

~~(III) The expected impact of the discharge, by month, on the receiving stream for the entire proposed mixing zone area for all of the pollutants listed above. Included in this analysis shall be a comparison of the receiving stream water quality with the discharge and without the discharge; and~~

~~(IV) A description of fish, other vertebrate populations, and macroinvertebrates that reside in or are likely to pass through the proposed mixing zone, including expected location (if known), species identification, stage of development, and time of year when their presence is expected. For existing discharges, the applicant shall provide the same information for similar nearby streams that are unaffected by wastewater discharges. In addition, any threatened or endangered species in the immediate vicinity of the receiving stream shall be identified; and~~

~~(V) The expected impact of the discharge on aquatic organisms and/or fish passage, including any expected negative impacts from the effluent attracting fish where that is not desirable; and~~

~~(VI) A description of the expected environmental benefits to be derived from the discharge or other mitigation measures proposed by the applicant, including but not limited to improvements in water quality, improvements in fish passage, and improvements in aquatic habitat. If the applicant proposes to undertake mitigation measures designed to provide environmental benefits (e.g., purchasing water or water conservation rights to increase stream flows or establishing stream cover to decrease temperature), the applicant shall describe the mitigation measures in detail, including a description of the steps it will take to ensure that the benefits of the mitigation measures are attained and are not lost or diminished over time.~~

~~(VII) Some or all of the above study requirements may be waived by the Department, if the Department determines that the information is not needed. In the event that the Department does waive some or all of the above study requirements, the basis for waiving the requirements will be included in the permit evaluation report upon the next permit renewal or modification relating to the mixing zone.~~

~~(VIII) Upon request of the Department, the applicant shall conduct additional studies to further evaluate the impact of the discharge, which may include whole effluent toxicity testing, stream surveys for water quality, stream surveys for fish and other aquatic organisms, or other studies as specified by the Department.~~

~~(IX) In evaluating whether an existing or proposed increase in an existing discharge would result in a net environmental benefit, the applicant shall use the native biological community in a nearby, similar stream that is unaffected by wastewater discharges. The Department shall consider all information generated as required in this rule and other relevant information. The evaluation shall consider benefits to the native aquatic biological community only.~~

~~(iii) Permit conditions: Upon determination by the Department that the discharge and mitigation measures (if any) will likely result in an overall environmental benefit, the Department shall include appropriate permit conditions to insure that the environmental benefits are attained and continue. Such permit conditions may include but not be limited to:~~

~~(I) Maximum allowed effluent flows and pollutant loads;~~

~~(II) Requirements to maintain land ownership, easements, contracts, or other legally binding measures necessary to assure that mitigation measures, if any, remain in place and effective;~~

~~(III) Special operating conditions;~~

~~(IV) Monitoring and reporting requirements; and~~

~~(V) Studies to evaluate the effectiveness of mitigation measures.~~

~~(B) **Constructed water course**: A mixing zone may be extended through a constructed water course and into a natural water course. For the purposes of this rule, a constructed water course is one that was constructed for irrigation, site drainage, or wastewater conveyance, and has the following characteristics:~~

~~(i) Irrigation flows, stormwater runoff, or wastewater flows have replaced natural streamflow regimes; and~~

~~(ii) The channel form is greatly simplified in lengthwise and cross sectional profiles; and~~

~~(iii) Physical and biological characteristics that differ significantly from nearby natural streams; and~~

~~(iv) A much lower diversity of aquatic species than found in nearby natural streams; and~~

~~(v) If the constructed water course is an irrigation canal, then it must have effective fish screens in place to qualify as a constructed water course.~~

~~(C) **Insignificant discharges**: Insignificant discharges are those that either by volume, pollutant characteristics, and/or temporary nature are expected to have little if any impact on beneficial uses in the receiving stream, and for which the extensive evaluations required for discharges to smaller streams are not warranted. For the purposes of this rule, only filter backwash discharges and underground storage tank cleanups are considered insignificant discharges.~~

~~(D) **Other requirements for alternate mixing zones**: The following are additional requirements for dischargers requesting an alternate mixing zone:~~

~~(i) Most discharges that qualify for an alternate mixing zone will extend through the receiving stream until a larger stream is reached, where thorough mixing of the effluent can occur and where the edge of the allowed mixing zone will be located. The portion of the mixing zone in the larger stream must meet all of the requirements of the standard mixing zone, including not blocking aquatic life passage; and~~

~~(ii) An alternate mixing zone shall not be granted if a municipal drinking water intake is located within the proposed mixing zone, and the discharge has a significant adverse impact on the drinking water source; and~~

~~(iii) The discharge will not pose an unreasonable hazard to the environment or pose a significant health risk, considering the likely pathways of exposure; and~~

(iv) The discharge shall not be acutely toxic to organisms passing through the mixing zone; and

(v) An alternate mixing zone shall not be granted if the substances discharged may accumulate in the sediments or bioaccumulate in aquatic life or wildlife to levels that adversely affect public health, safety, or welfare; aquatic life; wildlife; or other designated beneficial uses; and

(vi) In the event that the receiving stream is water quality limited, the requirements for discharges to water quality limited streams supersede this rule.

(5) Testing methods: The analytical testing methods for determining compliance with the water quality standards contained in this rule shall be in accordance with the most recent edition of **Standard Methods for the Examination of Water and Waste Water published jointly by the American Public Health Association, American Water Works Association, and Water Pollution Control Federation**, unless the Department has published an applicable superseding method, in which case testing shall be in accordance with the superseding method; provided, however, that testing in accordance with an alternative method shall comply with this rule if the Department has published the method or has approved the method in writing.

[ED. NOTE: The Table(s) referenced in this rule is not printed in the OAR Compilation. Copies are available from the agency.]

[Publications: The publication(s) referred to or incorporated by reference in this rule are available from the office of the agency.]

Stat. Auth.: ORS 468.735, ORS 468B.035 & ORS 468B.048
Stats. Implemented: ORS 468B.048
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 1-1980, f. & ef. 1-9-80; DEQ 18-1987, f. & ef. 9-4-87; DEQ 14-1991, f. & cert. ef. 8-13-91; DEQ 17-1992, f. & cert. ef. 8-7-92 (and corrected 8-13-92); DEQ 21-1995(Temp), f. & cert. ef. 9-21-95; DEQ 5-1996, f. & cert. ef. 3-7-96; DEQ 22-1997, f. & cert. ef. 10-24-97

340-041-0295

Minimum Design Criteria for Treatment and Control of Wastes

Subject to the implementation program set forth in OAR 340-041-0120, prior to discharge of any wastes from any new or modified facility to any waters of the Umpqua River Basin, such wastes shall be treated and controlled in facilities designed in accordance with the following minimum criteria. (In designing treatment facilities, average conditions and a normal range of variability are generally used in establishing design criteria. A facility once completed and placed in operation should operate at or near the design limit most of the time but may operate below the design criteria limit at times due to variables which are unpredictable or uncontrollable. This is particularly true

~~for biological treatment facilities. The actual operating limits are intended to be established by permit pursuant to ORS 468.740 and recognize that the actual performance level may at times be less than the design criteria.):~~

~~(1) Sewage wastes:~~

~~(a) During periods of low stream flows (approximately May 1 to October 31):~~

~~(A) Main stem Umpqua River, South Umpqua River, and all tributaries to the main stem and South Umpqua Rivers: Treatment resulting in monthly average effluent concentrations not to exceed 10 mg/l of BOD and 10 mg/l of SS or equivalent control;~~

~~(B) North Umpqua River from mouth to Idleyld Park (river mile 0 to 35): Treatment resulting in monthly average effluent concentrations not to exceed 10 mg/l of BOD and 10 mg/l of SS or equivalent control;~~

~~(C) North Umpqua River above Idleyld Park (river mile 35) and all tributaries to North Umpqua River: Treatment resulting in monthly average effluent concentrations not to exceed 5 mg/l of BOD and 5 mg/l of SS or equivalent control.~~

~~(b) During the period of high stream flows (approximately November 1 to April 30): A minimum of secondary treatment or equivalent control and unless otherwise specifically authorized by the Department, operation of all waste treatment and control facilities at maximum practicable efficiency and effectiveness so as to minimize waste discharges to public waters;~~

~~(c) Effluent BOD concentrations in mg/l, divided by the dilution factor (ratio of receiving stream flow to effluent flow) shall not exceed one unless otherwise approved by the EQC;~~

~~(d) Sewage wastes shall be disinfected, after treatment, equivalent to thorough mixing with sufficient chlorine to provide a residual of at least one part per million after 60 minutes of contact time unless otherwise specifically authorized by permit;~~

~~(e) Positive protection shall be provided to prevent bypassing raw or inadequately treated sewage to public waters unless otherwise approved by the Department where elimination of inflow and infiltration would be necessary but not presently practicable;~~

~~(f) More stringent waste treatment and control requirements may be imposed where special conditions may require.~~

~~(2) Industrial wastes:~~

~~(a) After maximum practicable inplant control, a minimum of secondary treatment or equivalent control (reduction of suspended solids and organic material where present in~~

~~significant quantities, effective disinfection where bacterial organisms of public health significance are present, and control of toxic or other deleterious substances);~~

~~(b) Specific industrial waste treatment requirements shall be determined on an individual basis in accordance with the provisions of this plan, applicable federal requirements, and the following:~~

~~(A) The uses which are or may likely be made of the receiving stream;~~

~~(B) The size and nature of flow of the receiving stream;~~

~~(C) The quantity and quality of wastes to be treated; and~~

~~(D) The presence or absence of other sources of pollution on the same watershed.~~

~~(c) Where industrial, commercial, or agricultural effluents contain significant quantities of potentially toxic elements, treatment requirements shall be determined utilizing appropriate bioassays;~~

~~(d) Industrial cooling waters containing significant heat loads shall be subjected to offstream cooling or heat recovery prior to discharge to public waters;~~

~~(e) Positive protection shall be provided to prevent bypassing of raw or inadequately treated industrial wastes to any public waters;~~

~~(f) Facilities shall be provided to prevent and contain spills of potentially toxic or hazardous materials and a positive program for containment and cleanup of such spills should they occur shall be developed and maintained.~~

~~Stat. Auth.: ORS 468~~
~~Stats. Implemented: ORS 468B.030~~
~~Hist.: DEQ 128, f. & ef. 1-21-77~~

~~South Coast Basin~~

~~340-041-0322~~

~~Beneficial Water Uses to be Protected~~

~~Water quality in the South Coast Basin (see **Figures 1 and 5**) shall be managed to protect the recognized beneficial uses as indicated in **Table 4**.~~

~~[ED. NOTE: The Figure(s) and Table referenced in this rule are not printed in the OAR Compilation. Copies are available from the agency.]~~

Stat. Auth.: ORS 468
Stats. Implemented: ORS 468B.048
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 9-1985, f. & ef. 8-6-85

340-041-0325

Water Quality Standards Not to be Exceeded (To be Adopted Pursuant to ORS 468.735 and Enforceable Pursuant to ORS 468.720, 468.990, and 468.992)

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

(2) No wastes shall be discharged and no activities shall be conducted which either alone or in combination with other wastes or activities will cause violation of the following standards in the waters of the South Coast Basin:

(a) Dissolved oxygen (DO): The changes adopted by the Commission on January 11, 1996, become effective July 1, 1996. Until that time, the requirements of this rule that were in effect on January 10, 1996, apply:

(A) For waterbodies identified by the Department as providing salmonid spawning, during the periods from spawning until fry emergence from the gravels, the following criteria apply:

(i) The dissolved oxygen shall not be less than 11.0 mg/l. However, if the minimum intergravel dissolved oxygen, measured as a spatial median, is 8.0 mg/l or greater, then the DO criterion is 9.0 mg/l;

(ii) Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 11.0 mg/l or 9.0 mg/l criteria, dissolved oxygen levels shall not be less than 95 percent of saturation.

(B) For waterbodies identified by the Department as providing salmonid spawning during the period from spawning until fry emergence from the gravels, the spatial median intergravel dissolved oxygen concentration shall not fall below 6.0 mg/l;

(C) A spatial median of 8.0 mg/l intergravel dissolved oxygen level shall be used to identify areas where the recognized beneficial use of salmonid spawning, egg incubation and fry emergence from the egg and from the gravels may be impaired and therefore require action by the Department. Upon determination that the spatial median intergravel dissolved oxygen concentration is below 8.0 mg/l, the Department may, in accordance with priorities established by the Department for evaluating water quality impaired

~~waterbodies, determine whether to list the waterbody as water quality limited under the Section 303(d) of the Clean Water Act, initiate pollution control strategies as warranted, and where needed cooperate with appropriate designated management agencies to evaluate and implement necessary best management practices for nonpoint source pollution control;~~

~~(D) For waterbodies identified by the Department as providing cold water aquatic life, the dissolved oxygen shall not be less than 8.0 mg/l as an absolute minimum. Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 8.0 mg/l, dissolved oxygen shall not be less than 90 percent of saturation. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 8.0 mg/l as a 30-day mean minimum, 6.5 mg/l as a seven-day minimum mean, and shall not fall below 6.0 mg/l as an absolute minimum (**Table 21**);~~

~~(E) For waterbodies identified by the Department as providing cool water aquatic life, the dissolved oxygen shall not be less than 6.5 mg/l as an absolute minimum. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 6.5 mg/l as a 30-day mean minimum, 5.0 mg/l as a seven-day minimum mean, and shall not fall below 4.0 mg/l as an absolute minimum (**Table 21**);~~

~~(F) For waterbodies identified by the Department as providing warm water aquatic life, the dissolved oxygen shall not be less than 5.5 mg/l as an absolute minimum. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 5.5 mg/l as a 30-day mean minimum, and shall not fall below 4.0 mg/l as an absolute minimum (**Table 21**);~~

~~(G) For estuarine water, the dissolved oxygen concentrations shall not be less than 6.5 mg/l (for coastal waterbodies);~~

~~(H) For marine waters, no measurable reduction in dissolved oxygen concentration shall be allowed.~~

~~(b) Temperature: The changes adopted by the Commission on January 11, 1996, become effective July 1, 1996. Until that time, the requirements of this rule that were in effect on January 10, 1996, apply. The method for measuring the numeric temperature criteria specified in this rule is defined in OAR 340-041-0006(54):~~

~~(A) To accomplish the goals identified in OAR 340-041-0120(11), unless specifically allowed under a Department-approved surface water temperature management plan as required under OAR 340-041-0026(3)(a)(D), no measurable surface water temperature increase resulting from anthropogenic activities is allowed:~~

~~(i) In a basin for which salmonid fish rearing is a designated beneficial use, and in which surface water temperatures exceed 64.0°F (17.8°C);~~

~~(ii) In waters and periods of the year determined by the Department to support native salmonid spawning, egg incubation, and fry emergence from the egg and from the gravels in a basin which exceeds 55.0°F (12.8°C);~~

~~(iii) In waters determined by the Department to support or to be necessary to maintain the viability of native Oregon bull trout, when surface water temperatures exceed 50.0°F (10.0°C);~~

~~(iv) In waters determined by the Department to be ecologically significant cold-water refugia;~~

~~(v) In stream segments containing federally listed Threatened and Endangered species if the increase would impair the biological integrity of the Threatened and Endangered population;~~

~~(vi) In Oregon waters when the dissolved oxygen (DO) levels are within 0.5 mg/l or 10 percent saturation of the water column or intergravel DO criterion for a given stream reach or subbasin;~~

~~(vii) In natural lakes.~~

~~(B) An exceedance of the numeric criteria identified in subparagraphs (A)(i) through (iii) of this subsection will not be deemed a temperature standard violation if it occurs when the air temperature during the warmest seven-day period of the year exceeds the 90th percentile of the seven-day average daily maximum air temperature calculated in a yearly series over the historic record. However, during such periods, the anthropogenic sources must still continue to comply with their surface water temperature management plans developed under OAR 340-041-0026(3)(a)(D);~~

~~(C) Any source may petition the Commission for an exception to subparagraphs (A)(i) through (vii) of this subsection for discharge above the identified criteria if:~~

~~(i) The source provides the necessary scientific information to describe how the designated beneficial uses would not be adversely impacted; or~~

~~(ii) A source is implementing all reasonable management practices or measures; its activity will not significantly affect the beneficial uses; and the environmental cost of treating the parameter to the level necessary to assure full protection would outweigh the risk to the resource.~~

~~(D) Marine and estuarine waters: No significant increase above natural background temperatures shall be allowed, and water temperatures shall not be altered to a degree which creates or can reasonably be expected to create an adverse effect on fish or other aquatic life.~~

~~(c) Turbidity (Nephelometric Turbidity Units, NTU): No more than a ten percent cumulative increase in natural stream turbidities shall be allowed, as measured relative to a control point immediately upstream of the turbidity causing activity. However, limited duration activities necessary to address an emergency or to accommodate essential dredging, construction or other legitimate activities and which cause the standard to be exceeded may be authorized provided all practicable turbidity control techniques have been applied and one of the following has been granted:~~

~~(A) Emergency activities: Approval coordinated by DEQ with the Department of Fish and Wildlife under conditions they may prescribe to accommodate response to emergencies or to protect public health and welfare;~~

~~(B) Dredging, Construction or other Legitimate Activities: Permit or certification authorized under terms of Section 401 or 404 (Permits and Licenses, Federal Water Pollution Control Act) or OAR 141-085-0100 et seq. (Removal and Fill Permits, Division of State Lands), with limitations and conditions governing the activity set forth in the permit or certificate.~~

~~(d) pH (Hydrogen ion concentration): pH values shall not fall outside the range of:~~

~~(A) Estuarine and fresh waters: 6.5 – 8.5. The following exception applies: Waters impounded by dams existing on January 1, 1996, which have pHs that exceed the criteria shall not be considered in violation of the standard if the Department determines that the exceedance would not occur without the impoundment and that all practicable measures have been taken to bring the pH in the impounded waters into compliance with the criteria;~~

~~(B) Marine waters: 7.0 – 8.5.~~

~~(e) Bacteria standards:~~

~~(A) Numeric Criteria: Organisms of the coliform group commonly associated with fecal sources (MPN or equivalent membrane filtration using a representative number of samples) shall not exceed the criteria described in subparagraphs (i) and (ii) of this paragraph:~~

~~(i) Freshwaters and Estuarine Waters Other than Shellfish Growing Waters:~~

~~(I) A 30-day log mean of 126 *E. coli* organisms per 100 ml, based on a minimum of five (5) samples;~~

~~(II) No single sample shall exceed 406 *E. coli* organisms per 100 ml.~~

~~(ii) Marine Waters and Estuarine Shellfish Growing Waters: A fecal coliform median concentration of 14 organisms per 100 milliliters, with not more than ten percent of the samples exceeding 43 organisms per 100 ml.~~

~~(B) Raw Sewage Prohibition: No sewage shall be discharged into or in any other manner be allowed to enter the waters of the State unless such sewage has been treated in a manner approved by the Department or otherwise allowed by these rules;~~

~~(C) Animal Waste: Runoff contaminated with domesticated animal wastes shall be minimized and treated to the maximum extent practicable before it is allowed to enter waters of the State;~~

~~(D) Effluent Limitations and Water Quality Limited Waterbodies: Effluent limitations to implement the criteria in this rule are found in OAR 340-041-0120(12) – (16). Implementation of the criteria in this rule in water quality limited waterbodies is described in OAR 340-041-0026(3)(a)(I) and OAR 340-041-0120(17).~~

~~(f) Bacterial pollution or other conditions deleterious to waters used for domestic purposes, livestock watering, irrigation, bathing, or shellfish propagation, or otherwise injurious to public health shall not be allowed;~~

~~(g) The liberation of dissolved gases, such as carbon dioxide, hydrogen sulfide, or other gases, in sufficient quantities to cause objectionable odors or to be deleterious to fish or other aquatic life, navigation, recreation, or other reasonable uses made of such waters shall not be allowed;~~

~~(h) The development of fungi or other growths having a deleterious effect on stream bottoms, fish or other aquatic life, or which are injurious to health, recreation, or industry shall not be allowed;~~

~~(i) The creation of tastes or odors or toxic or other conditions that are deleterious to fish or other aquatic life or affect the potability of drinking water or the palatability of fish or shellfish shall not be allowed;~~

~~(j) The formation of appreciable bottom or sludge deposits or the formation of any organic or inorganic deposits deleterious to fish or other aquatic life or injurious to public health, recreation, or industry shall not be allowed;~~

~~(k) Objectionable discoloration, scum, oily sleek or floating solids, or coating of aquatic life with oil films shall not be allowed;~~

~~(l) Aesthetic conditions offensive to the human senses of sight, taste, smell, or touch shall not be allowed;~~

~~(m) Radioisotope concentrations shall not exceed maximum permissible concentrations (MPC's) in drinking water, edible fishes or shellfishes, wildlife, irrigated crops, livestock and dairy products, or pose an external radiation hazard;~~

~~(n) The concentration of total dissolved gas relative to atmospheric pressure at the point of sample collection shall not exceed 110 percent of saturation, except when stream flow~~

~~exceeds the ten-year, seven-day average flood. However, for Hatchery receiving waters and waters of less than two feet in depth, the concentration of total dissolved gas relative to atmospheric pressure at the point of sample collection shall not exceed 105 percent of saturation;~~

~~(o) Total Dissolved Solids: Guide concentrations listed below shall not be exceeded unless otherwise specifically authorized by DEQ upon such conditions as it may deem necessary to carry out the general intent of this plan and to protect the beneficial uses set forth in OAR 340-041-0322: 100.0 mg/l;~~

~~(p) Toxic Substances:~~

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

~~(B) Levels of toxic substances shall not exceed the criteria listed in **Table 20** which were based on criteria established by EPA and published in **Quality Criteria for Water (1986)**, unless otherwise noted;~~

~~(C) The criteria in paragraph (B) of this subsection shall apply unless data from scientifically valid studies demonstrate that the most sensitive designated beneficial uses will not be adversely affected by exceeding a criterion or that a more restrictive criterion is warranted to protect beneficial uses, as accepted by the Department on a site-specific basis. Where no published EPA criteria exist for a toxic substance, public health advisories and other published scientific literature may be considered and used, if appropriate, to set guidance values;~~

~~(D) Bio-assessment studies such as laboratory bioassays or instream measurements of indigenous biological communities, shall be conducted, as the Department deems necessary, to monitor the toxicity of complex effluents, other suspected discharges or chemical substances without numeric criteria, to aquatic life. These studies, properly conducted in accordance with standard testing procedures, may be considered as scientifically valid data for the purposes of paragraph (C) of this subsection. If toxicity occurs, the Department shall evaluate and implement measures necessary to reduce toxicity on a case-by-case basis.~~

~~(3) Where the naturally occurring quality parameters of waters of the South Coast Basin are outside the numerical limits of the above assigned water quality standards, the naturally occurring water quality shall be the standard. However, in such cases special restrictions, described in OAR 340-041-0026(3)(a)(C)(iii), apply to discharges that affect dissolved oxygen.~~

~~(4) Mixing zones:~~

~~(a) The Department may allow a designated portion of a receiving water to serve as a zone of dilution for wastewaters and receiving waters to mix thoroughly and this zone will be defined as a mixing zone;~~

~~(b) The Department may suspend all or part of the water quality standards, or set less restrictive standards, in the defined mixing zone, provided that the following conditions are met:~~

~~(A) The water within the mixing zone shall be free of:~~

~~(i) Materials in concentrations that will cause acute toxicity to aquatic life as measured by a Department approved bioassay method. Acute toxicity is lethality to aquatic life as measured by a significant difference in lethal concentration between the control and 100 percent effluent in an acute bioassay test. Lethality in 100 percent effluent may be allowed due to ammonia and chlorine only when it is demonstrated on a case-by-case basis that immediate dilution of the effluent within the mixing zone reduces toxicity below lethal concentrations. The Department may on a case-by-case basis establish a zone of immediate dilution if appropriate for other parameters;~~

~~(ii) Materials that will settle to form objectionable deposits;~~

~~(iii) Floating debris, oil, scum, or other materials that cause nuisance conditions;~~

~~(iv) Substances in concentrations that produce deleterious amounts of fungal or bacterial growths.~~

~~(B) The water outside the boundary of the mixing zone shall:~~

~~(i) Be free of materials in concentrations that will cause chronic (sublethal) toxicity. Chronic toxicity is measured as the concentration that causes long-term sublethal effects, such as significantly impaired growth or reproduction in aquatic organisms, during a testing period based on test species life cycle. Procedures and end points will be specified by the Department in wastewater discharge permits;~~

~~(ii) Meet all other water quality standards under normal annual low flow conditions.~~

~~(c) The limits of the mixing zone shall be described in the wastewater discharge permit. In determining the location, surface area, and volume of a mixing zone area, the Department may use appropriate mixing zone guidelines to assess the biological, physical, and chemical character of receiving waters, and effluent, and the most appropriate placement of the outfall, to protect instream water quality, public health, and other beneficial uses. Based on receiving water and effluent characteristics, the Department shall define a mixing zone in the immediate area of a wastewater discharge to:~~

~~(A) Be as small as feasible;~~

~~(B) Avoid overlap with any other mixing zones to the extent possible and be less than the total stream width as necessary to allow passage of fish and other aquatic organisms;~~

~~(C) Minimize adverse effects on the indigenous biological community especially when species are present that warrant special protection for their economic importance, tribal significance, ecological uniqueness, or for other similar reasons as determined by the Department and does not block the free passage of aquatic life;~~

~~(D) Not threaten public health;~~

~~(E) Minimize adverse effects on other designated beneficial uses outside the mixing zone.~~

~~(d) The Department may request the applicant of a permitted discharge for which a mixing zone is required, to submit all information necessary to define a mixing zone, such as:~~

~~(A) Type of operation to be conducted;~~

~~(B) Characteristics of effluent flow rates and composition;~~

~~(C) Characteristics of low flows of receiving waters;~~

~~(D) Description of potential environmental effects;~~

~~(E) Proposed design for outfall structures.~~

~~(e) The Department may, as necessary, require mixing zone monitoring studies and/or bioassays to be conducted to evaluate water quality or biological status within and outside the mixing zone boundary;~~

~~(f) The Department may change mixing zone limits or require the relocation of an outfall if it determines that the water quality within the mixing zone adversely affects any existing beneficial uses in the receiving waters.~~

~~(g) **Alternate requirements for mixing zones**: For some existing or proposed discharges to some receiving streams, it may not be practicable to treat wastewater to meet instream water quality standards at the point of discharge or within a short distance from the point of discharge. Some of these discharges could be allowed without impairing the overall ecological integrity of the receiving streams, or may provide an overall benefit to the receiving stream. This section specifies the conditions and circumstances under which a mixing zone may be allowed by the Department that extends beyond the immediate area around a discharge point, or that extends across a stream width. An alternate mixing zone may be approved if the applicant demonstrates to the Department's satisfaction that the discharge (A) creates an overall environmental benefit, or (B) is to a constructed water course, or (C) is insignificant. The three circumstances under which alternate mixing zones may be established are described further below.~~

~~(A) **Overall environmental benefit.**~~

~~(i) Qualifying for alternate mixing zone based on overall environmental benefit: In order to qualify for an alternate mixing zone based on a finding of overall environmental benefit, the discharger must demonstrate to the Department's satisfaction the following:~~

~~(I) That all practical strategies have been or will be implemented to minimize the pollutant loads in the effluent; and~~

~~(II) For proposed increased discharges, the current actual discharge and mixing zone does not meet the requirements of a standard mixing zone; and~~

~~(III) Either that, on balance, an environmental benefit would be lost if the discharge did not occur, or that the discharger is prepared to undertake other actions that will mitigate the effect of the discharge to an extent resulting in a net environmental benefit to the receiving stream.~~

~~(IV) For the purposes of this rule, the term "practical" shall include environmental impact, availability of alternatives, cost of alternatives, and other relevant factors.~~

~~(ii) Studies required and evaluation of studies: In order to demonstrate that, on balance, an environmental benefit will result from the discharge, the following information shall be provided by the applicant:~~

~~(I) The effluent flow and pollutant loads that are detected or expected in the effluent, by month, both average and expected worst case discharges. The parameters to be evaluated include at a minimum temperature, biochemical oxygen demand, total suspended solids, total dissolved solids, pH, settleable solids, e. coli bacteria, oil and grease, any pollutants listed in Table 20 of this rule division, and any pollutant for which the receiving stream has been designated by the Department as water quality limited; and~~

~~(II) Receiving stream flow, by month; and~~

~~(III) The expected impact of the discharge, by month, on the receiving stream for the entire proposed mixing zone area for all of the pollutants listed above. Included in this analysis shall be a comparison of the receiving stream water quality with the discharge and without the discharge; and~~

~~(IV) A description of fish, other vertebrate populations, and macroinvertebrates that reside in or are likely to pass through the proposed mixing zone, including expected location (if known), species identification, stage of development, and time of year when their presence is expected. For existing discharges, the applicant shall provide the same information for similar nearby streams that are unaffected by wastewater discharges. In addition, any threatened or endangered species in the immediate vicinity of the receiving stream shall be identified; and~~

(V) The expected impact of the discharge on aquatic organisms and/or fish passage, including any expected negative impacts from the effluent attracting fish where that is not desirable; and

(VI) A description of the expected environmental benefits to be derived from the discharge or other mitigation measures proposed by the applicant, including but not limited to improvements in water quality, improvements in fish passage, and improvements in aquatic habitat. If the applicant proposes to undertake mitigation measures designed to provide environmental benefits (e.g., purchasing water or water conservation rights to increase stream flows or establishing stream cover to decrease temperature), the applicant shall describe the mitigation measures in detail, including a description of the steps it will take to ensure that the benefits of the mitigation measures are attained and are not lost or diminished over time.

(VII) Some or all of the above study requirements may be waived by the Department, if the Department determines that the information is not needed. In the event that the Department does waive some or all of the above study requirements, the basis for waiving the requirements will be included in the permit evaluation report upon the next permit renewal or modification relating to the mixing zone.

(VIII) Upon request of the Department, the applicant shall conduct additional studies to further evaluate the impact of the discharge, which may include whole effluent toxicity testing, stream surveys for water quality, stream surveys for fish and other aquatic organisms, or other studies as specified by the Department.

(IX) In evaluating whether an existing or proposed increase in an existing discharge would result in a net environmental benefit, the applicant shall use the native biological community in a nearby, similar stream that is unaffected by wastewater discharges. The Department shall consider all information generated as required in this rule and other relevant information. The evaluation shall consider benefits to the native aquatic biological community only.

(iii) Permit conditions: Upon determination by the Department that the discharge and mitigation measures (if any) will likely result in an overall environmental benefit, the Department shall include appropriate permit conditions to insure that the environmental benefits are attained and continue. Such permit conditions may include but not be limited to:

(I) Maximum allowed effluent flows and pollutant loads;

(II) Requirements to maintain land ownership, easements, contracts, or other legally binding measures necessary to assure that mitigation measures, if any, remain in place and effective;

(III) Special operating conditions;

~~(IV) Monitoring and reporting requirements; and~~

~~(V) Studies to evaluate the effectiveness of mitigation measures.~~

~~(B) **Constructed water course**: A mixing zone may be extended through a constructed water course and into a natural water course. For the purposes of this rule, a constructed water course is one that was constructed for irrigation, site drainage, or wastewater conveyance, and has the following characteristics:~~

~~(i) Irrigation flows, stormwater runoff, or wastewater flows have replaced natural streamflow regimes; and~~

~~(ii) The channel form is greatly simplified in lengthwise and cross sectional profiles; and~~

~~(iii) Physical and biological characteristics that differ significantly from nearby natural streams; and~~

~~(iv) A much lower diversity of aquatic species than found in nearby natural streams; and~~

~~(v) If the constructed water course is an irrigation canal, then it must have effective fish screens in place to qualify as a constructed water course.~~

~~(C) **Insignificant discharges**: Insignificant discharges are those that either by volume, pollutant characteristics, and/or temporary nature are expected to have little if any impact on beneficial uses in the receiving stream, and for which the extensive evaluations required for discharges to smaller streams are not warranted. For the purposes of this rule, only filter backwash discharges and underground storage tank cleanups are considered insignificant discharges.~~

~~(D) **Other requirements for alternate mixing zones**: The following are additional requirements for dischargers requesting an alternate mixing zone:~~

~~(i) Most discharges that qualify for an alternate mixing zone will extend through the receiving stream until a larger stream is reached, where thorough mixing of the effluent can occur and where the edge of the allowed mixing zone will be located. The portion of the mixing zone in the larger stream must meet all of the requirements of the standard mixing zone, including not blocking aquatic life passage; and~~

~~(ii) An alternate mixing zone shall not be granted if a municipal drinking water intake is located within the proposed mixing zone, and the discharge has a significant adverse impact on the drinking water source; and~~

~~(iii) The discharge will not pose an unreasonable hazard to the environment or pose a significant health risk, considering the likely pathways of exposure; and~~

(iv) The discharge shall not be acutely toxic to organisms passing through the mixing zone; and

(v) An alternate mixing zone shall not be granted if the substances discharged may accumulate in the sediments or bioaccumulate in aquatic life or wildlife to levels that adversely affect public health, safety, or welfare; aquatic life; wildlife; or other designated beneficial uses; and

(vi) In the event that the receiving stream is water quality limited, the requirements for discharges to water quality limited streams supersede this rule.

(5) Testing methods: The analytical testing methods for determining compliance with the water quality standards contained in this rule shall be in accordance with the most recent edition of **Standard Methods for the Examination of Water and Waste Water published jointly by the American Public Health Association, American Water Works Association, and Water Pollution Control Federation**, unless the Department has published an applicable superseding method, in which case testing shall be in accordance with the superseding method; provided, however, that testing in accordance with an alternative method shall comply with this rule if the Department has published the method or has approved the method in writing.

[ED. NOTE: The Table(s) referenced in this rule is not printed in the OAR Compilation. Copies are available from the agency.]

[Publications: The publication(s) referred to or incorporated by reference in this rule are available from the office of the agency.]

Stat. Auth.: ORS 468.735, ORS 468B.035 & ORS 468B.048
Stats. Implemented: ORS 468B.048
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 1-1980, f. & ef. 1-9-80; DEQ 18-1987, f. & ef. 9-4-87; DEQ 14-1991, f. & cert. ef. 8-13-91; DEQ 17-1992, f. & cert. ef. 8-7-92 (and corrected 8-13-92); DEQ 21-1995(Temp), f. & cert. ef. 9-21-95; DEQ 5-1996, f. & cert. ef. 3-7-96; DEQ 22-1997, f. & cert. ef. 10-24-97

340-041-0335

Minimum Design Criteria for Treatment and Control of Wastes

Subject to the implementation program set forth in OAR 340-041-0120, prior to discharge of any wastes from any new or modified facility to any waters of the South Coast Basin, such wastes shall be treated and controlled in facilities designed in accordance with the following minimum criteria. (In designing treatment facilities, average conditions and a normal range of variability are generally used in establishing design criteria. A facility once completed and placed in operation should operate at or near the design limit most of the time but may operate below the design criteria limit at times due to variables which are unpredictable or uncontrollable. This is particularly true

~~for biological treatment facilities. The actual operating limits are intended to be established by permit pursuant to ORS 468.740 and recognize that the actual performance level may at times be less than the design criteria.):~~

~~(1) Sewage wastes:~~

~~(a) During periods of low stream flows (approximately May 1 to October 31): Treatment resulting in monthly average effluent concentrations not to exceed 20 mg/l of BOD and 20 mg/l of SS or equivalent control;~~

~~(b) During the period of high stream flows (approximately November 1 to April 30) and for direct ocean discharges: A minimum of secondary treatment or equivalent control and unless otherwise specifically authorized by the Department, operation of all waste treatment and control facilities at maximum practicable efficiency and effectiveness so as to minimize waste discharges to public waters;~~

~~(c) Effluent BOD concentration in mg/l, divided by the dilution factor (ratio of receiving stream flow to effluent flow) shall not exceed one unless otherwise approved by the EQC;~~

~~(d) Sewage wastes shall be disinfected, after treatment, equivalent to thorough mixing with sufficient chlorine to provide a residual of at least one (1) part per million after 60 minutes of contact time unless otherwise specifically authorized by permit;~~

~~(e) Positive protection shall be provided to prevent bypassing raw or inadequately treated sewage to public waters unless otherwise approved by the Department where elimination of inflow and infiltration would be necessary but not presently practicable;~~

~~(f) More stringent waste treatment and control requirements may be imposed where special conditions may require.~~

~~(2) Industrial wastes:~~

~~(a) After maximum practicable inplant control, a minimum of secondary treatment or equivalent control (reduction of suspended solids and organic material where present in significant quantities, effective disinfection where bacterial organisms of public health significance are present, and control of toxic or other deleterious substances);~~

~~(b) Specific industrial waste treatment requirements shall be determined on an individual basis in accordance with the provisions of this plan, applicable federal requirements, and the following:~~

~~(A) The uses which are or may likely be made of the receiving stream;~~

~~(B) The size and nature of flow of the receiving stream;~~

(C) The quantity and quality of wastes to be treated; and

(D) The presence or absence of other sources of pollution on the same watershed.

(c) Where industrial, commercial, or agricultural effluents contain significant quantities of potentially toxic elements, treatment requirements shall be determined utilizing appropriate bioassays;

(d) Industrial cooling waters containing significant heat loads shall be subjected to offstream cooling or heat recovery prior to discharge to public waters;

(e) Positive protection shall be provided to prevent bypassing of raw or inadequately treated industrial wastes to any public waters;

(f) Facilities shall be provided to prevent and contain spills of potentially toxic or hazardous materials and a positive program for containment and cleanup of such spills should they occur shall be developed and maintained.

Stat. Auth.: ORS 468
Stats. Implemented: ORS 468B.030
Hist.: DEQ 128, f. & ef. 1-21-77

Rogue Basin

340-041-0362

Beneficial Water Uses to be Protected

Water quality in the Rogue River Basin (see **Figures 1** and **6**) shall be managed to protect the recognized beneficial uses as indicated in **Table 5**.

[ED. NOTE: The Figure(s) and Table referenced in this rule are not printed in the OAR Compilation. Copies are available from the agency.]

Stat. Auth.: ORS 468
Stats. Implemented: ORS 468B.048
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 9-1985, f. & ef. 8-6-85

340-041-0365

Water Quality Standards Not to be Exceeded (To be Adopted Pursuant to ORS 468.735 and Enforceable Pursuant to ORS 468.720, 468.990, and 468.992)

(1) Notwithstanding the water quality standards contained below, the highest and best practicable treatment and/or control of wastes, activities, and flows shall in every case be provided so as to maintain dissolved oxygen and overall water quality at the highest

possible levels and water temperatures, coliform bacteria concentrations, dissolved chemical substances, toxic materials, radioactivity, turbidities, color, odor, and other deleterious factors at the lowest possible levels.

(2) No wastes shall be discharged and no activities shall be conducted which either alone or in combination with other wastes or activities will cause violation of the following standards in the waters of the Rogue River Basin:

(a) Dissolved oxygen (DO): The changes adopted by the Commission on January 11, 1996, become effective July 1, 1996. Until that time, the requirements of this rule that were in effect on January 10, 1996, apply:

(A) For waterbodies identified by the Department as providing salmonid spawning, during the periods from spawning until fry emergence from the gravels, the following criteria apply:

(i) The dissolved oxygen shall not be less than 11.0 mg/l. However, if the minimum intergravel dissolved oxygen, measured as a spatial median, is 8.0 mg/l or greater, then the DO criterion is 9.0 mg/l;

(ii) Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 11.0 mg/l or 9.0 mg/l criteria, dissolved oxygen levels shall not be less than 95 percent of saturation.

(B) For waterbodies identified by the Department as providing salmonid spawning during the period from spawning until fry emergence from the gravels, the spatial median intergravel dissolved oxygen concentration shall not fall below 6.0 mg/l;

(C) A spatial median of 8.0 mg/l intergravel dissolved oxygen level shall be used to identify areas where the recognized beneficial use of salmonid spawning, egg incubation and fry emergence from the egg and from the gravels may be impaired and therefore require action by the Department. Upon determination that the spatial median intergravel dissolved oxygen concentration is below 8.0 mg/l, the Department may, in accordance with priorities established by the Department for evaluating water quality impaired waterbodies, determine whether to list the waterbody as water quality limited under the Section 303(d) of the Clean Water Act, initiate pollution control strategies as warranted, and where needed cooperate with appropriate designated management agencies to evaluate and implement necessary best management practices for nonpoint source pollution control;

(D) For waterbodies identified by the Department as providing cold water aquatic life, the dissolved oxygen shall not be less than 8.0 mg/l as an absolute minimum. Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 8.0 mg/l, dissolved oxygen shall not be less than 90 percent of saturation. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 8.0 mg/l as a 30 day mean minimum, 6.5

~~mg/l as a seven-day minimum mean, and shall not fall below 6.0 mg/l as an absolute minimum (**Table 21**);~~

~~(E) For waterbodies identified by the Department as providing cool water aquatic life, the dissolved oxygen shall not be less than 6.5 mg/l as an absolute minimum. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 6.5 mg/l as a 30-day mean minimum, 5.0 mg/l as a seven-day minimum mean, and shall not fall below 4.0 mg/l as an absolute minimum (**Table 21**);~~

~~(F) For waterbodies identified by the Department as providing warm water aquatic life, the dissolved oxygen shall not be less than 5.5 mg/l as an absolute minimum. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 5.5 mg/l as a 30-day mean minimum, and shall not fall below 4.0 mg/l as an absolute minimum (**Table 21**);~~

~~(G) For estuarine water, the dissolved oxygen concentrations shall not be less than 6.5 mg/l (for coastal waterbodies);~~

~~(H) For marine waters, no measurable reduction in dissolved oxygen concentration shall be allowed.~~

~~(b) Temperature: The changes adopted by the Commission on January 11, 1996, become effective July 1, 1996. Until that time, the requirements of this rule that were in effect on January 10, 1996, apply. The method for measuring the numeric temperature criteria specified in this rule is defined in OAR 340-041-0006(54):~~

~~(A) To accomplish the goals identified in OAR 340-041-0120(11), unless specifically allowed under a Department-approved surface water temperature management plan as required under OAR 340-041-0026(3)(a)(D), no measurable surface water temperature increase resulting from anthropogenic activities is allowed:~~

~~(i) In a basin for which salmonid fish rearing is a designated beneficial use, and in which surface water temperatures exceed 64.0°F (17.8°C);~~

~~(ii) In waters and periods of the year determined by the Department to support native salmonid spawning, egg incubation, and fry emergence from the egg and from the gravels in a basin which exceeds 55.0°F (12.8°C);~~

~~(iii) In waters determined by the Department to support or to be necessary to maintain the viability of native Oregon bull trout, when surface water temperatures exceed 50.0°F (10.0°C);~~

~~(iv) In waters determined by the Department to be ecologically significant cold water refugia;~~

(v) In stream segments containing federally listed Threatened and Endangered species if the increase would impair the biological integrity of the Threatened and Endangered population;

(vi) In Oregon waters when the dissolved oxygen (DO) levels are within 0.5 mg/l or 10 percent saturation of the water column or intergravel DO criterion for a given stream reach or subbasin;

(vii) In natural lakes.

(B) An exceedance of the numeric criteria identified in subparagraphs (A)(i) through (iii) of this subsection will not be deemed a temperature standard violation if it occurs when the air temperature during the warmest seven-day period of the year exceeds the 90th percentile of the seven-day average daily maximum air temperature calculated in a yearly series over the historic record. However, during such periods, the anthropogenic sources must still continue to comply with their surface water temperature management plans developed under OAR 340-041-0026(3)(a)(D);

(C) Any source may petition the Commission for an exception to subparagraphs (A)(i) through (vii) of this subsection for discharge above the identified criteria if:

(i) The source provides the necessary scientific information to describe how the designated beneficial uses would not be adversely impacted; or

(ii) A source is implementing all reasonable management practices or measures; its activity will not significantly affect the beneficial uses; and the environmental cost of treating the parameter to the level necessary to assure full protection would outweigh the risk to the resource.

(D) Marine and estuarine waters: No significant increase above natural background temperatures shall be allowed, and water temperatures shall not be altered to a degree which creates or can reasonably be expected to create an adverse effect on fish or other aquatic life.

(c) Turbidity (Nephelometric Turbidity Units, NTU): No more than a ten percent cumulative increase in natural stream turbidities shall be allowed, as measured relative to a control point immediately upstream of the turbidity causing activity. However, limited duration activities necessary to address an emergency or to accommodate essential dredging, construction or other legitimate activities and which cause the standard to be exceeded may be authorized provided all practicable turbidity control techniques have been applied and one of the following has been granted:

(A) Emergency activities: Approval coordinated by DEQ with the Department of Fish and Wildlife under conditions they may prescribe to accommodate response to emergencies or to protect public health and welfare;

~~(B) Dredging, Construction or other Legitimate Activities: Permit or certification authorized under terms of Section 401 or 404 (Permits and Licenses, Federal Water Pollution Control Act) or OAR 141-085-0100 et seq. (Removal and Fill Permits, Division of State Lands), with limitations and conditions governing the activity set forth in the permit or certificate.~~

~~(d) pH (hydrogen ion concentration): pH values shall not fall outside the following ranges:~~

~~(A) Marine waters: 7.0 – 8.5;~~

~~(B) Estuarine and fresh waters (except Cascade lakes): 6.5 – 8.5. The following exception applies: Waters impounded by dams existing on January 1, 1996, which have pHs that exceed the criteria shall not be considered in violation of the standard if the Department determines that the exceedance would not occur without the impoundment and that all practicable measures have been taken to bring the pH in the impounded waters into compliance with the criteria;~~

~~(C) Cascade lakes above 3,000 feet altitude: pH values shall not fall outside the range of 6.0 to 8.5.~~

~~(e) Bacteria standards:~~

~~(A) Numeric Criteria: Organisms of the coliform group commonly associated with fecal sources (MPN or equivalent membrane filtration using a representative number of samples) shall not exceed the criteria described in subparagraphs (i) and (ii) of this paragraph:~~

~~(i) Freshwaters and Estuarine Waters Other than Shellfish Growing Waters:~~

~~(I) A 30-day log mean of 126 *E. coli* organisms per 100 ml, based on a minimum of five (5) samples;~~

~~(II) No single sample shall exceed 406 *E. coli* organisms per 100 ml.~~

~~(ii) Marine Waters and Estuarine Shellfish Growing Waters: A fecal coliform median concentration of 14 organisms per 100 milliliters, with not more than ten percent of the samples exceeding 43 organisms per 100 ml.~~

~~(B) Raw Sewage Prohibition: No sewage shall be discharged into or in any other manner be allowed to enter the waters of the State unless such sewage has been treated in a manner approved by the Department or otherwise allowed by these rules;~~

~~(C) Animal Waste: Runoff contaminated with domesticated animal wastes shall be minimized and treated to the maximum extent practicable before it is allowed to enter waters of the State;~~

~~(D) Effluent Limitations and Water Quality Limited Waterbodies: Effluent limitations to implement the criteria in this rule are found in OAR 340-041-0120(12) through (16). Implementation of the criteria in this rule in water quality limited waterbodies is described in OAR 340-041-0026(3)(a)(I) and OAR 340-041-0120(17).~~

~~(f) Bacterial pollution or other conditions deleterious to waters used for domestic purposes, livestock watering, irrigation, bathing, or shellfish propagation, or otherwise injurious to public health shall not be allowed;~~

~~(g) The liberation of dissolved gases, such as carbon dioxide, hydrogen sulfide, or other gases, in sufficient quantities to cause objectionable odors or to be deleterious to fish or other aquatic life, navigation, recreation, or other reasonable uses made of such waters shall not be allowed;~~

~~(h) The development of fungi or other growths having a deleterious effect on stream bottoms, fish or other aquatic life, or which are injurious to health, recreation, or industry shall not be allowed;~~

~~(i) The creation of tastes or odors or toxic or other conditions that are deleterious to fish or other aquatic life or affect the potability of drinking water or the palatability of fish or shellfish shall not be allowed;~~

~~(j) The formation of appreciable bottom or sludge deposits or the formation of any organic or inorganic deposits deleterious to fish or other aquatic life or injurious to public health, recreation, or industry shall not be allowed;~~

~~(k) Objectionable discoloration, scum, oily sleek, or floating solids, or coating of aquatic life with oil films shall not be allowed;~~

~~(l) Aesthetic conditions offensive to the human senses of sight, taste, smell, or touch shall not be allowed;~~

~~(m) Radioisotope concentrations shall not exceed maximum permissible concentrations (MPC's) in drinking water, edible fishes or shellfishes, wildlife, irrigated crops, livestock and dairy products, or pose an external radiation hazard;~~

~~(n) The concentration of total dissolved gas relative to atmospheric pressure at the point of sample collection shall not exceed 110 percent of saturation, except when stream flow exceeds the ten-year, seven-day average flood. However, for Hatchery receiving waters and waters of less than two feet in depth, the concentration of total dissolved gas relative to atmospheric pressure at the point of sample collection shall not exceed 105 percent of saturation;~~

~~(o) Total Dissolved Solids: Guide concentrations listed below shall not be exceeded unless otherwise specifically authorized by DEQ upon such conditions as it may deem~~

~~necessary to carry out the general intent of this plan and to protect the beneficial uses set forth in OAR 340-041-0362: 500.0 mg/l;~~

~~(p) Toxic Substances:~~

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

~~(B) Levels of toxic substances shall not exceed the criteria listed in **Table 20** which were based on criteria established by EPA and published in **Quality Criteria for Water (1986)**, unless otherwise noted;~~

~~(C) The criteria in paragraph (B) of this subsection shall apply unless data from scientifically valid studies demonstrate that the most sensitive designated beneficial uses will not be adversely affected by exceeding a criterion or that a more restrictive criterion is warranted to protect beneficial uses, as accepted by the Department on a site specific basis. Where no published EPA criteria exist for a toxic substance, public health advisories and other published scientific literature may be considered and used, if appropriate, to set guidance values;~~

~~(D) Bio-assessment studies such as laboratory bioassays or instream measurements of indigenous biological communities, shall be conducted, as the Department deems necessary, to monitor the toxicity of complex effluents, other suspected discharges or chemical substances without numeric criteria, to aquatic life. These studies, properly conducted in accordance with standard testing procedures, may be considered as scientifically valid data for the purposes of paragraph (C) of this subsection. If toxicity occurs, the Department shall evaluate and implement measures necessary to reduce toxicity on a case-by-case basis.~~

~~(3) Where the naturally occurring quality parameters of waters of the Rogue Basin are outside the numerical limits of the above assigned water quality standards, the naturally occurring water quality shall be the standard. However, in such cases special restrictions, described in OAR 340-041-0026(3)(a)(C)(iii), apply to discharges that affect dissolved oxygen.~~

~~(4) Mixing zones:~~

~~(a) The Department may allow a designated portion of a receiving water to serve as a zone of dilution for wastewaters and receiving waters to mix thoroughly and this zone will be defined as a mixing zone;~~

~~(b) The Department may suspend all or part of the water quality standards, or set less restrictive standards, in the defined mixing zone, provided that the following conditions are met:~~

~~(A) The water within the mixing zone shall be free of:~~

~~(i) Materials in concentrations that will cause acute toxicity to aquatic life as measured by a Department approved bioassay method. Acute toxicity is lethality to aquatic life as measured by a significant difference in lethal concentration between the control and 100 percent effluent in an acute bioassay test. Lethality in 100 percent effluent may be allowed due to ammonia and chlorine only when it is demonstrated on a case by case basis that immediate dilution of the effluent within the mixing zone reduces toxicity below lethal concentrations. The Department may on a case by case basis establish a zone of immediate dilution if appropriate for other parameters;~~

~~(ii) Materials that will settle to form objectionable deposits;~~

~~(iii) Floating debris, oil, scum, or other materials that cause nuisance conditions;~~

~~(iv) Substances in concentrations that produce deleterious amounts of fungal or bacterial growths.~~

~~(B) The water outside the boundary of the mixing zone shall:~~

~~(i) Be free of materials in concentrations that will cause chronic (sublethal) toxicity. Chronic toxicity is measured as the concentration that causes long term sublethal effects, such as significantly impaired growth or reproduction in aquatic organisms, during a testing period based on test species life cycle. Procedures and end points will be specified by the Department in wastewater discharge permits;~~

~~(ii) Meet all other water quality standards under normal annual low flow conditions.~~

~~(c) The limits of the mixing zone shall be described in the wastewater discharge permit. In determining the location, surface area, and volume of a mixing zone area, the Department may use appropriate mixing zone guidelines to assess the biological, physical, and chemical character of receiving waters, and effluent, and the most appropriate placement of the outfall, to protect instream water quality, public health, and other beneficial uses. Based on receiving water and effluent characteristics, the Department shall define a mixing zone in the immediate area of a wastewater discharge to:~~

~~(A) Be as small as feasible;~~

~~(B) Avoid overlap with any other mixing zones to the extent possible and be less than the total stream width as necessary to allow passage of fish and other aquatic organisms;~~

~~(C) Minimize adverse effects on the indigenous biological community especially when species are present that warrant special protection for their economic importance, tribal significance, ecological uniqueness, or for other similar reasons as determined by the Department and does not block the free passage of aquatic life;~~

~~(D) Not threaten public health;~~

~~(E) Minimize adverse effects on other designated beneficial uses outside the mixing zone.~~

~~(d) The Department may request the applicant of a permitted discharge for which a mixing zone is required, to submit all information necessary to define a mixing zone, such as:~~

~~(A) Type of operation to be conducted;~~

~~(B) Characteristics of effluent flow rates and composition;~~

~~(C) Characteristics of low flows of receiving waters;~~

~~(D) Description of potential environmental effects;~~

~~(E) Proposed design for outfall structures.~~

~~(e) The Department may, as necessary, require mixing zone monitoring studies and/or bioassays to be conducted to evaluate water quality or biological status within and outside the mixing zone boundary;~~

~~(f) The Department may change mixing zone limits or require the relocation of an outfall *if it determines that the water quality within the mixing zone adversely affects any* existing beneficial uses in the receiving waters.~~

~~(g) **Alternate requirements for mixing zones**: For some existing or proposed discharges to some receiving streams, it may not be practicable to treat wastewater to meet instream water quality standards at the point of discharge or within a short distance from the point of discharge. Some of these discharges could be allowed without impairing the overall ecological integrity of the receiving streams, or may provide an overall benefit to the receiving stream. This section specifies the conditions and circumstances under which a mixing zone may be allowed by the Department that extends beyond the immediate area around a discharge point, or that extends across a stream width. An alternate mixing zone may be approved if the applicant demonstrates to the Department's satisfaction that the discharge (A) creates an overall environmental benefit, or (B) is to a constructed water course, or (C) is insignificant. The three circumstances under which alternate mixing zones may be established are described further below.~~

~~(A) **Overall environmental benefit**.~~

~~(i) Qualifying for alternate mixing zone based on overall environmental benefit: In order to qualify for an alternate mixing zone based on a finding of overall environmental benefit, the discharger must demonstrate to the Department's satisfaction the following:~~

~~(a) That all practical strategies have been or will be implemented to minimize the pollutant loads in the effluent; and~~

~~(b) For proposed increased discharges, the current actual discharge and mixing zone does not meet the requirements of a standard mixing zone; and~~

~~(c) Either that, on balance, an environmental benefit would be lost if the discharge did not occur, or that the discharger is prepared to undertake other actions that will mitigate the effect of the discharge to an extent resulting in a net environmental benefit to the receiving stream.~~

~~(d) For the purposes of this rule, the term "practical" shall include environmental impact, availability of alternatives, cost of alternatives, and other relevant factors.~~

~~(ii) Studies required and evaluation of studies: In order to demonstrate that, on balance, an environmental benefit will result from the discharge, the following information shall be provided by the applicant:~~

~~(I) The effluent flow and pollutant loads that are detected or expected in the effluent, by month, both average and expected worst case discharges. The parameters to be evaluated include at a minimum temperature, biochemical oxygen demand, total suspended solids, total dissolved solids, pH, settleable solids, e. coli bacteria, oil and grease, any pollutants listed in Table 20 of this rule division, and any pollutant for which the receiving stream has been designated by the Department as water quality limited; and~~

~~(II) Receiving stream flow, by month; and~~

~~(III) The expected impact of the discharge, by month, on the receiving stream for the entire proposed mixing zone area for all of the pollutants listed above. Included in this analysis shall be a comparison of the receiving stream water quality with the discharge and without the discharge; and~~

~~(IV) A description of fish, other vertebrate populations, and macroinvertebrates that reside in or are likely to pass through the proposed mixing zone, including expected location (if known), species identification, stage of development, and time of year when their presence is expected. For existing discharges, the applicant shall provide the same information for similar nearby streams that are unaffected by wastewater discharges. In addition, any threatened or endangered species in the immediate vicinity of the receiving stream shall be identified; and~~

(V) The expected impact of the discharge on aquatic organisms and/or fish passage, including any expected negative impacts from the effluent attracting fish where that is not desirable; and

(VI) A description of the expected environmental benefits to be derived from the discharge or other mitigation measures proposed by the applicant, including but not limited to improvements in water quality, improvements in fish passage, and improvements in aquatic habitat. If the applicant proposes to undertake mitigation measures designed to provide environmental benefits (e.g., purchasing water or water conservation rights to increase stream flows or establishing stream cover to decrease temperature), the applicant shall describe the mitigation measures in detail, including a description of the steps it will take to ensure that the benefits of the mitigation measures are attained and are not lost or diminished over time.

(VII) Some or all of the above study requirements may be waived by the Department, if the Department determines that the information is not needed. In the event that the Department does waive some or all of the above study requirements, the basis for waiving the requirements will be included in the permit evaluation report upon the next permit renewal or modification relating to the mixing zone.

(VIII) Upon request of the Department, the applicant shall conduct additional studies to further evaluate the impact of the discharge, which may include whole effluent toxicity testing, stream surveys for water quality, stream surveys for fish and other aquatic organisms, or other studies as specified by the Department.

(IX) In evaluating whether an existing or proposed increase in an existing discharge would result in a net environmental benefit, the applicant shall use the native biological community in a nearby, similar stream that is unaffected by wastewater discharges. The Department shall consider all information generated as required in this rule and other relevant information. The evaluation shall consider benefits to the native aquatic biological community only.

(iii) Permit conditions: Upon determination by the Department that the discharge and mitigation measures (if any) will likely result in an overall environmental benefit, the Department shall include appropriate permit conditions to insure that the environmental benefits are attained and continue. Such permit conditions may include but not be limited to:

(I) Maximum allowed effluent flows and pollutant loads;

(II) Requirements to maintain land ownership, easements, contracts, or other legally binding measures necessary to assure that mitigation measures, if any, remain in place and effective;

(III) Special operating conditions;

(IV) Monitoring and reporting requirements; and

(V) Studies to evaluate the effectiveness of mitigation measures.

(B) **Constructed water course**: A mixing zone may be extended through a constructed water course and into a natural water course. For the purposes of this rule, a constructed water course is one that was constructed for irrigation, site drainage, or wastewater conveyance, and has the following characteristics:

(i) Irrigation flows, stormwater runoff, or wastewater flows have replaced natural streamflow regimes; and

(ii) The channel form is greatly simplified in lengthwise and cross sectional profiles; and

(iii) Physical and biological characteristics that differ significantly from nearby natural streams; and

(iv) A much lower diversity of aquatic species than found in nearby natural streams; and

(v) If the constructed water course is an irrigation canal, then it must have effective fish screens in place to qualify as a constructed water course.

(C) **Insignificant discharges**: Insignificant discharges are those that either by volume, pollutant characteristics, and/or temporary nature are expected to have little if any impact on beneficial uses in the receiving stream, and for which the extensive evaluations required for discharges to smaller streams are not warranted. For the purposes of this rule, only filter backwash discharges and underground storage tank cleanups are considered insignificant discharges.

(D) **Other requirements for alternate mixing zones**: The following are additional requirements for dischargers requesting an alternate mixing zone:

(i) Most discharges that qualify for an alternate mixing zone will extend through the receiving stream until a larger stream is reached, where thorough mixing of the effluent can occur and where the edge of the allowed mixing zone will be located. The portion of the mixing zone in the larger stream must meet all of the requirements of the standard mixing zone, including not blocking aquatic life passage; and

(ii) An alternate mixing zone shall not be granted if a municipal drinking water intake is located within the proposed mixing zone, and the discharge has a significant adverse impact on the drinking water source; and

(iii) The discharge will not pose an unreasonable hazard to the environment or pose a significant health risk, considering the likely pathways of exposure; and

(iv) The discharge shall not be acutely toxic to organisms passing through the mixing zone; and

(v) An alternate mixing zone shall not be granted if the substances discharged may accumulate in the sediments or bioaccumulate in aquatic life or wildlife to levels that adversely affect public health, safety, or welfare; aquatic life; wildlife; or other designated beneficial uses; and

(vi) In the event that the receiving stream is water quality limited, the requirements for discharges to water quality limited streams supersede this rule.

(5) Testing methods: The analytical testing methods for determining compliance with the water quality standards contained in this rule shall be in accordance with the most recent edition of **Standard Methods for the Examination of Water and Waste Water published jointly by the American Public Health Association, American Water Works Association, and Water Pollution Control Federation**, unless the Department has published an applicable superseding method, in which case testing shall be in accordance with the superseding method; provided, however, that testing in accordance with an alternative method shall comply with this rule if the Department has published the method or has approved the method in writing.

[ED. NOTE: The Table(s) referenced in this rule is not printed in the OAR Compilation. Copies are available from the agency.]

[Publications: The publication(s) referred to or incorporated by reference in this rule are available from the office of the agency.]

Stat. Auth.: ORS 468.735, ORS 468B.035 & ORS 468B.048
Stats. Implemented: ORS 468B.048
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 1-1980, f. & ef. 1-9-80; DEQ 18-1987, f. & ef. 9-4-87; DEQ 14-1991, f. & cert. ef. 8-13-91; DEQ 17-1992, f. & cert. ef. 8-7-92 (and corrected 8-13-92); DEQ 21-1995(Temp), f. & cert. ef. 9-21-95; DEQ 5-1996, f. & cert. ef. 3-7-96; DEQ 22-1997, f. & cert. ef. 10-24-97

340-041-0375

Minimum Design Criteria for Treatment and Control of Wastes

Subject to the implementation program set forth in OAR 340-041-0120, prior to discharge of any waste from any new or modified facility to any waters of the Rogue River Basin, such wastes shall be treated and controlled in facilities designed in accordance with the following minimum criteria. (In designing treatment facilities, average conditions and a normal range of variability are generally used in establishing design criteria. A facility once completed and placed in operation should operate at or near the design limit most of the time but may operate below the design criteria limit at times due to variables which are unpredictable or uncontrollable. This is particularly true

~~for biological treatment facilities. The actual operating limits are intended to be established by permit pursuant to ORS 468.740 and recognize that the actual performance level may at times be less than the design criteria.):~~

~~(1) Sewage wastes:~~

~~(a) During periods of low stream flows (approximately May 1 to October 31): Treatment resulting in monthly average effluent concentrations not to exceed 10 mg/l of BOD and 10 mg/l of SS or equivalent control;~~

~~(b) During the period of high stream flows (approximately November 1 to April 30): A minimum of secondary treatment or equivalent control and unless otherwise specifically authorized by the Department, operation of all waste treatment and control facilities at maximum practicable efficiency and effectiveness so as to minimize waste discharges to public waters;~~

~~(c) Effluent BOD concentrations in mg/l, divided by the dilution factor (ratio of receiving stream flow to effluent flow) shall not exceed one unless otherwise approved by the EQC;~~

~~(d) Sewage wastes shall be disinfected, after treatment, equivalent to thorough mixing with sufficient chlorine to provide a residual of at least 1 part per million after 60 minutes of contact time unless otherwise specifically authorized by permit;~~

~~(e) Positive protection shall be provided to prevent bypassing raw or inadequately treated sewage to public waters unless otherwise approved by the Department where elimination of inflow and infiltration would be necessary but not presently practicable;~~

~~(f) More stringent waste treatment and control requirements may be imposed where special conditions may require.~~

~~(2) Industrial wastes:~~

~~(a) After maximum practicable inplant control, a minimum of secondary treatment or equivalent control (reduction of suspended solids and organic material where present in significant quantities, effective disinfection where bacterial organisms of public health significance are present, and control of toxic or other deleterious substances);~~

~~(b) Specific industrial waste treatment requirements shall be determined on an individual basis in accordance with the provisions of this plan, applicable federal requirements, and the following:~~

~~(A) The uses which are or may likely be made of the receiving stream;~~

~~(B) The size and nature of flow of the receiving stream;~~

~~(C) The quantity and quality of wastes to be treated; and~~

~~(D) The presence or absence of other sources of pollution on the same watershed.~~

~~(c) Where industrial, commercial, or agricultural effluents contain significant quantities of potentially toxic elements, treatment requirements shall be determined utilizing appropriate bioassays;~~

~~(d) Industrial cooling waters containing significant heat loads shall be subjected to offstream cooling or heat recovery prior to discharge to public waters;~~

~~(e) Positive protection shall be provided to prevent bypassing of raw or inadequately treated industrial wastes to any public waters;~~

~~(f) Facilities shall be provided to prevent and contain spills of potentially toxic or hazardous materials and a positive program for containment and cleanup of such spills should they occur shall be developed and maintained.~~

~~Stat. Auth.: ORS 468~~
~~Stats. Implemented: ORS 468B.030~~
~~Hist.: DEQ 128, f. & ef. 1-21-77~~

~~340-041-0385~~

~~Special Policies and Guidelines~~

~~In order to improve water quality within the Bear Creek subbasin to meet existing water quality standards for dissolved oxygen and pH, the following special rules for total maximum daily loads, waste load allocations, load allocations, and program plans are established.~~

~~(1) After the completion of wastewater control facilities and program plans approved by the Commission under this rule and no later than December 31, 1994, unless otherwise modified by program plans no activities shall be allowed and no wastewater shall be discharged to Bear Creek or its tributaries without the authorization of the Commission that cause the following parameters to be exceeded in Bear Creek:~~

~~(a) Low Flow Season Approximately May 1 through November 30*:~~

~~(A) Ammonia Nitrogen Nitrogen as N (mg/l) — 0.25;~~

~~(B) Instream Five Day Biochemical Oxygen (Demand (mg/l)[1] — 3.0;~~

~~(C) Instream Five Day Total Phosphorus as P (mg/l) — 0.08.~~

~~(b) High Flow Season Approximately December 1 through April 30*:~~

(A) Ammonia Nitrogen Nitrogen as N (mg/1) -- 1.0;

(B) Instream Five-Day Biochemical Oxygen Demand (mg/1)2 -- 2.5.

[1]As measured at the Valley View Road Sampling Site. For the purposes of waste load allocations, the biochemical oxygen demand is calculated as the ammonia concentration multiplied by 4.35 and added to the measured effluent biochemical oxygen demand.

[2]Median value as measured at the Kirtland Road sampling site.

*Precise dates for complying with this rule may be conditioned on physical conditions, such as flow and temperature, of the receiving stream and shall be specified in individual permits or memorandums of understanding issued by the Department.

(2) The Department shall before September 30, 1990 distribute initial waste load and load allocations to point and nonpoint sources in the basin. These loads are interim and may be redistributed upon conclusion of the approved program plans;

(3) Before October 21, 1989, the City of Ashland shall submit to the Department a program plan and time schedule describing how and when they will modify their sewerage facility to comply with this rule and all other applicable rules regulating waste discharges;

(4) Before May 25, 1991, the industries permitted for log pond discharge, Boise Cascade Corporation, Kogap Manufacturing Company, and Medford Corporation shall submit program plans to the Department describing how and when they will modify their operations to comply with this rule and all other applicable rules regulating waste discharge;

(5) Before June 1, 1992, Jackson County and the incorporated cities within the Bear Creek subbasin shall submit to the Department a program plan for controlling urban runoff within their respective jurisdictions to comply with these rules;

(6) Before June 1, 1992, the Departments of Forestry and Agriculture shall submit to the Department program plans for achieving specified load allocations of state and private forest lands and agricultural lands respectively;

(7) Program plans shall be reviewed and approved by the Commission. All proposed final program plans shall be subject to public comment and hearing prior to consideration for approval by the Commission.

Stat. Auth.: ORS 468.710 & ORS 468.735
Stats. Implemented: ORS 468B.030
Hist.: DEQ 17-1989, f. & cert. ef. 7-31-89; DEQ 40-1990, f. & cert. ef. 11-15-90

Willamette Basin

340-041-0442

Beneficial Water Uses to be Protected

Water quality in the Willamette River Basin (see **Figures 1** and 7) shall be managed to protect the recognized beneficial uses as indicated in **Table 6**.

[ED. NOTE: The Figure(s) and Table referenced in this rule are not printed in the OAR Compilation. Copies are available from the agency.]

Stat. Auth.: ORS 468
Stats. Implemented: ORS 468B.048
Hist.: DEQ 128, f. & ef. 1-21-77

340-041-0445

Water Quality Standards Not to be Exceeded (To be Adopted Pursuant to ORS 468.735 and Enforceable Pursuant to ORS 468.720, 468.990, and 468.992)

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

(2) No wastes shall be discharged and no activities shall be conducted which either alone or in combination with other wastes or activities will cause violation of the following standards in the waters of the Willamette River Basin:

(a) Dissolved oxygen (DO): The changes adopted by the Commission on January 11, 1996, become effective July 1, 1996. Until that time, the requirements of this rule that were in effect on January 10, 1996, apply:

(A) For waterbodies identified by the Department as providing salmonid spawning, during the periods from spawning until fry emergence from the gravels, the following criteria apply:

(i) The dissolved oxygen shall not be less than 11.0 mg/l. However, if the minimum intergravel dissolved oxygen, measured as a spatial median, is 8.0 mg/l or greater, then the DO criterion is 9.0 mg/l;

(ii) Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 11.0 mg/l or 9.0 mg/l criteria, dissolved oxygen levels shall not be less than 95 percent of saturation.

~~(B) For waterbodies identified by the Department as providing salmonid spawning during the period from spawning until fry emergence from the gravels, the spatial median intergravel dissolved oxygen concentration shall not fall below 6.0 mg/l;~~

~~(C) A spatial median of 8.0 mg/l intergravel dissolved oxygen level shall be used to identify areas where the recognized beneficial use of salmonid spawning, egg incubation and fry emergence from the egg and from the gravels may be impaired and therefore require action by the Department. Upon determination that the spatial median intergravel dissolved oxygen concentration is below 8.0 mg/l, the Department may, in accordance with priorities established by the Department for evaluating water quality impaired waterbodies, determine whether to list the waterbody as water quality limited under the Section 303(d) of the Clean Water Act, initiate pollution control strategies as warranted, and where needed cooperate with appropriate designated management agencies to evaluate and implement necessary best management practices for nonpoint source pollution control;~~

~~(D) For waterbodies identified by the Department as providing cold water aquatic life, the dissolved oxygen shall not be less than 8.0 mg/l as an absolute minimum. Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 8.0 mg/l, dissolved oxygen shall not be less than 90 percent of saturation. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 8.0 mg/l as a 30 day mean minimum, 6.5 mg/l as a seven day minimum mean, and shall not fall below 6.0 mg/l as an absolute minimum (**Table 21**);~~

~~(E) For waterbodies identified by the Department as providing cool water aquatic life, the dissolved oxygen shall not be less than 6.5 mg/l as an absolute minimum. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 6.5 mg/l as a 30 day mean minimum, 5.0 mg/l as a seven day minimum mean, and shall not fall below 4.0 mg/l as an absolute minimum (**Table 21**);~~

~~(F) For waterbodies identified by the Department as providing warm water aquatic life, the dissolved oxygen shall not be less than 5.5 mg/l as an absolute minimum. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 5.5 mg/l as a 30 day mean minimum, and shall not fall below 4.0 mg/l as an absolute minimum (**Table 21**);~~

~~(b) Temperature: The changes adopted by the Commission on January 11, 1996, become effective July 1, 1996. Until that time, the requirements of this rule that were in effect on January 10, 1996, apply. The method for measuring the numeric temperature criteria specified in this rule is defined in OAR 340 041 0006(54):~~

~~(A) To accomplish the goals identified in OAR 340 041 0120(11), unless specifically allowed under a Department approved surface water temperature management plan as~~

~~required under OAR 340-041-0026(3)(a)(D), no measurable surface water temperature increase resulting from anthropogenic activities is allowed:~~

~~(i) In a basin for which salmonid fish rearing is a designated beneficial use, and in which surface water temperatures exceed 64.0°F (17.8°C);~~

~~(ii) In the Columbia River or its associated sloughs and channels from the mouth to river mile 309 when surface water temperatures exceed 68.0°F (20.0°C);~~

~~(iii) In the Willamette River or its associated sloughs and channels from the mouth to river mile 50 when surface water temperatures exceed 68.0°F (20.0°C);~~

~~(iv) In waters and periods of the year determined by the Department to support native salmonid spawning, egg incubation, and fry emergence from the egg and from the gravels in a basin which exceeds 55.0°F (12.8°C);~~

~~(v) In waters determined by the Department to support or to be necessary to maintain the viability of native Oregon bull trout, when surface water temperatures exceed 50.0°F (10.0°C);~~

~~(vi) In waters determined by the Department to be ecologically significant cold water refugia;~~

~~(vii) In stream segments containing federally listed Threatened and Endangered species if the increase would impair the biological integrity of the Threatened and Endangered population;~~

~~(viii) In Oregon waters when the dissolved oxygen (DO) levels are within 0.5 mg/l or 10 percent saturation of the water column or intergravel DO criterion for a given stream reach or subbasin;~~

~~(ix) In natural lakes.~~

~~(B) An exceedance of the numeric criteria identified in subparagraphs (A)(i) through (v) of this subsection will not be deemed a temperature standard violation if it occurs when the air temperature during the warmest seven-day period of the year exceeds the 90th percentile of the seven-day average daily maximum air temperature calculated in a yearly series over the historic record. However, during such periods, the anthropogenic sources must still continue to comply with their surface water temperature management plans developed under OAR 340-041-0026(3)(a)(D);~~

~~(C) Any source may petition the Commission for an exception to subparagraphs (A)(i) through (ix) of this subsection for discharge above the identified criteria if:~~

~~(i) The source provides the necessary scientific information to describe how the designated beneficial uses would not be adversely impacted; or~~

~~(ii) A source is implementing all reasonable management practices or measures; its activity will not significantly affect the beneficial uses; and the environmental cost of treating the parameter to the level necessary to assure full protection would outweigh the risk to the resource.~~

~~(c) Turbidity (Nephelometric Turbidity Units, NTU): No more than a ten percent cumulative increase in natural stream turbidities shall be allowed, as measured relative to a control point immediately upstream of the turbidity causing activity. However, limited duration activities necessary to address an emergency or to accommodate essential dredging, construction or other legitimate activities and which cause the standard to be exceeded may be authorized provided all practicable turbidity control techniques have been applied and one of the following has been granted:~~

~~(A) Emergency activities: Approval coordinated by DEQ with the Department of Fish and Wildlife under conditions they may prescribe to accommodate response to emergencies or to protect public health and welfare;~~

~~(B) Dredging, Construction or other Legitimate Activities: Permit or certification authorized under terms of Section 401 or 404 (Permits and Licenses, Federal Water Pollution Control Act) or OAR 141-085-0100 et seq. (Removal and Fill Permits, Division of State Lands), with limitations and conditions governing the activity set forth in the permit or certificate.~~

~~(d) pH (hydrogen ion concentration): pH values shall not fall outside the ranges identified in paragraphs (A), (B), and (C) of this subsection. The following exception applies: Waters impounded by dams existing on January 1, 1996, which have pHs that exceed the criteria shall not be considered in violation of the standard if the Department determines that the exceedance would not occur without the impoundment and that all practicable measures have been taken to bring the pH in the impounded waters into compliance with the criteria:~~

~~(A) Columbia River: 7.0 – 8.5;~~

~~(B) All other basin waters (except Cascade lakes): 6.5 – 8.5;~~

~~(C) Cascade lakes above 3,000 feet altitude: pH values shall not fall outside the range of 6.0 to 8.5.~~

~~(e) Bacteria standards:~~

~~(A) Numeric Criteria: Organisms of the coliform group commonly associated with fecal sources (MPN or equivalent membrane filtration using a representative number of samples) shall not exceed the criteria described in subparagraphs (i) and (ii) of this paragraph. Freshwaters and Estuarine Waters:~~

~~(i) A 30-day log mean of 126 *E. coli* organisms per 100 ml, based on a minimum of five (5) samples;~~

~~(ii) No single sample shall exceed 406 *E. coli* organisms per 100 ml.~~

~~(B) Raw Sewage Prohibition: No sewage shall be discharged into or in any other manner be allowed to enter the waters of the State unless such sewage has been treated in a manner approved by the Department or otherwise allowed by these rules;~~

~~(C) Animal Waste: Runoff contaminated with domesticated animal wastes shall be minimized and treated to the maximum extent practicable before it is allowed to enter waters of the State;~~

~~(D) Effluent Limitations and Water Quality Limited Waterbodies: Effluent limitations to implement the criteria in this rule are found in OAR 340-041-0120(12) through (16). Implementation of the criteria in this rule in water quality limited waterbodies is described in OAR 340-041-0026(3)(a)(I) and OAR 340-041-0120(17).~~

~~(f) Bacterial pollution or other conditions deleterious to waters used for domestic purposes, livestock watering, irrigation, bathing, or shellfish propagation, or otherwise injurious to public health shall not be allowed;~~

~~(g) The liberation of dissolved gases, such as carbon dioxide, hydrogen sulfide, or other gases, in sufficient quantities to cause objectionable odors or to be deleterious to fish or other aquatic life, navigation, recreation, or other reasonable uses made of such waters shall not be allowed;~~

~~(h) The development of fungi or other growths having a deleterious effect on stream bottoms, fish or other aquatic life, or which are injurious to health, recreation, or industry shall not be allowed;~~

~~(i) The creation of tastes or odors or toxic or other conditions that are deleterious to fish or other aquatic life or affect the potability of drinking water or the palatability of fish or shellfish shall not be allowed;~~

~~(j) The formation of appreciable bottom or sludge deposits or the formation of any organic or inorganic deposits deleterious to fish or other aquatic life or injurious to public health, recreation, or industry shall not be allowed;~~

~~(k) Objectionable discoloration, scum, oily sleek or floating solids, or coating of aquatic life with oil films shall not be allowed;~~

~~(l) Aesthetic conditions offensive to the human senses of sight, taste, smell, or touch shall not be allowed;~~

~~(m) Radioisotope concentrations shall not exceed maximum permissible concentrations (MPC's) in drinking water, edible fishes or shellfishes, wildlife, irrigated crops, livestock and dairy products, or pose an external radiation hazard;~~

~~(n)(A) The concentration of total dissolved gas relative to atmospheric pressure at the point of sample collection shall not exceed 110 percent of saturation, except when stream flow exceeds the ten-year, seven-day average flood. However, for Hatchery receiving waters and waters of less than two feet in depth, the concentration of total dissolved gas relative to atmospheric pressure at the point of sample collection shall not exceed 105 percent of saturation;~~

~~(B) The Commission may modify the total dissolved gas criteria in the Columbia River for the purpose of allowing increased spill for salmonid migration. The Commission must find that:~~

~~(i) Failure to act would result in greater harm to salmonid stock survival through in-river migration than would occur by increased spill;~~

~~(ii) The modified total dissolved gas criteria associated with the increased spill provides a reasonable balance of the risk of impairment due to elevated total dissolved gas to both resident biological communities and other migrating fish and to migrating adult and juvenile salmonids when compared to other options for in-river migration of salmon;~~

~~(iii) Adequate data will exist to determine compliance with the standards; and~~

~~(iv) Biological monitoring is occurring to document that the migratory salmonid and resident biological communities are being protected.~~

~~(C) The Commission will give public notice and notify all known interested parties and will make provision for opportunity to be heard and comment on the evidence presented by others, except that the Director may modify the total dissolved gas criteria for emergencies for a period not exceeding 48 hours;~~

~~(D) The Commission may, at its discretion, consider alternative modes of migration.~~

~~(o) Total Dissolved Solids: Guide concentrations listed below shall not be exceeded unless otherwise specifically authorized by DEQ upon such conditions as it may deem necessary to carry out the general intent of this plan and to protect the beneficial uses set forth in OAR 340-041-0442:~~

~~(A) Columbia River — 500.0 mg/l;~~

~~(B) Willamette River and Tributaries — 100.0 mg/l.~~

~~(p) Toxic Substances:~~

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

~~(B) Levels of toxic substances shall not exceed the criteria listed in **Table 20** which were based on criteria established by EPA and published in **Quality Criteria for Water (1986)**, unless otherwise noted;~~

~~(C) The criteria in paragraph (B) of this subsection shall apply unless data from scientifically valid studies demonstrate that the most sensitive designated beneficial uses will not be adversely affected by exceeding a criterion or that a more restrictive criterion is warranted to protect beneficial uses, as accepted by the Department on a site specific basis. Where no published EPA criteria exist for a toxic substance, public health advisories and other published scientific literature may be considered and used, if appropriate, to set guidance values;~~

~~(D) Bio-assessment studies such as laboratory bioassays or instream measurements of indigenous biological communities, shall be conducted, as the Department deems necessary, to monitor the toxicity of complex effluents, other suspected discharges or chemical substances without numeric criteria, to aquatic life. These studies, properly conducted in accordance with standard testing procedures, may be considered as scientifically valid data for the purposes of paragraph (C) of this subsection. If toxicity occurs, the Department shall evaluate and implement measures necessary to reduce toxicity on a case-by-case basis.~~

~~(3) Where the naturally occurring quality parameters of waters of the Willamette River Basin are outside the numerical limits of the above assigned water quality standards, the naturally occurring water quality shall be the standard. However, in such cases special restrictions, described in OAR 340-041-0026(3)(a)(C)(iii), apply to discharges that affect dissolved oxygen.~~

~~(4) Mixing zones:~~

~~(a) The Department may allow a designated portion of a receiving water to serve as a zone of dilution for wastewaters and receiving waters to mix thoroughly and this zone will be defined as a mixing zone;~~

~~(b) The Department may suspend all or part of the water quality standards, or set less restrictive standards, in the defined mixing zone, provided that the following conditions are met:~~

~~(A) The water within the mixing zone shall be free of:~~

~~(i) Materials in concentrations that will cause acute toxicity to aquatic life as measured by a Department approved bioassay method. Acute toxicity is lethality to aquatic life as measured by a significant difference in lethal concentration between the control and 100 percent effluent in an acute bioassay test. Lethality in 100 percent effluent may be allowed due to ammonia and chlorine only when it is demonstrated on a case-by-case basis that immediate dilution of the effluent within the mixing zone reduces toxicity below lethal concentrations. The Department may on a case-by-case basis establish a zone of immediate dilution if appropriate for other parameters;~~

~~(ii) Materials that will settle to form objectionable deposits;~~

~~(iii) Floating debris, oil, scum, or other materials that cause nuisance conditions;~~

~~(iv) Substances in concentrations that produce deleterious amounts of fungal or bacterial growths.~~

~~(B) The water outside the boundary of the mixing zone shall:~~

~~(i) Be free of materials in concentrations that will cause chronic (sublethal) toxicity. Chronic toxicity is measured as the concentration that causes long-term sublethal effects, such as significantly impaired growth or reproduction in aquatic organisms, during a testing period based on test species life cycle. Procedures and end points will be specified by the Department in wastewater discharge permits;~~

~~(ii) Meet all other water quality standards under normal annual low-flow conditions.~~

~~(c) The limits of the mixing zone shall be described in the wastewater discharge permit. In determining the location, surface area, and volume of a mixing zone area, the Department may use appropriate mixing zone guidelines to assess the biological, physical, and chemical character of receiving waters, and effluent, and the most appropriate placement of the outfall, to protect instream water quality, public health, and other beneficial uses. Based on receiving water and effluent characteristics, the Department shall define a mixing zone in the immediate area of a wastewater discharge to:~~

~~(A) Be as small as feasible;~~

~~(B) Avoid overlap with any other mixing zones to the extent possible and be less than the total stream width as necessary to allow passage of fish and other aquatic organisms;~~

~~(C) Minimize adverse effects on the indigenous biological community especially when species are present that warrant special protection for their economic importance, tribal significance, ecological uniqueness, or for other similar reasons as determined by the Department and does not block the free passage of aquatic life;~~

~~(D) Not threaten public health;~~

(E) Minimize adverse effects on other designated beneficial uses outside the mixing zone.

(d) The Department may request the applicant of a permitted discharge for which a mixing zone is required, to submit all information necessary to define a mixing zone, such as:

(A) Type of operation to be conducted;

(B) Characteristics of effluent flow rates and composition;

(C) Characteristics of low flows of receiving waters;

(D) Description of potential environmental effects;

(E) Proposed design for outfall structures.

(e) The Department may, as necessary, require mixing zone monitoring studies and/or bioassays to be conducted to evaluate water quality or biological status within and outside the mixing zone boundary;

(f) The Department may change mixing zone limits or require the relocation of an outfall if it determines that the water quality within the mixing zone adversely affects any existing beneficial uses in the receiving waters.

(g) **Alternate requirements for mixing zones**: For some existing or proposed discharges to some receiving streams, it may not be practicable to treat wastewater to meet instream water quality standards at the point of discharge or within a short distance from the point of discharge. Some of these discharges could be allowed without impairing the overall ecological integrity of the receiving streams, or may provide an overall benefit to the receiving stream. This section specifies the conditions and circumstances under which a mixing zone may be allowed by the Department that extends beyond the immediate area around a discharge point, or that extends across a stream width. An alternate mixing zone may be approved if the applicant demonstrates to the Department's satisfaction that the discharge (A) creates an overall environmental benefit, or (B) is to a constructed water course, or (C) is insignificant. The three circumstances under which alternate mixing zones may be established are described further below.

(A) **Overall environmental benefit**.

(i) Qualifying for alternate mixing zone based on overall environmental benefit: In order to qualify for an alternate mixing zone based on a finding of overall environmental benefit, the discharger must demonstrate to the Department's satisfaction the following:

(I) That all practical strategies have been or will be implemented to minimize the pollutant loads in the effluent; and

~~(II) For proposed increased discharges, the current actual discharge and mixing zone does not meet the requirements of a standard mixing zone; and~~

~~(III) Either that, on balance, an environmental benefit would be lost if the discharge did not occur, or that the discharger is prepared to undertake other actions that will mitigate the effect of the discharge to an extent resulting in a net environmental benefit to the receiving stream.~~

~~(IV) For the purposes of this rule, the term "practical" shall include environmental impact, availability of alternatives, cost of alternatives, and other relevant factors.~~

~~(ii) Studies required and evaluation of studies: In order to demonstrate that, on balance, an environmental benefit will result from the discharge, the following information shall be provided by the applicant:~~

~~(I) The effluent flow and pollutant loads that are detected or expected in the effluent, by month, both average and expected worst case discharges. The parameters to be evaluated include at a minimum temperature, biochemical oxygen demand, total suspended solids, total dissolved solids, pH, settleable solids, e. coli bacteria, oil and grease, any pollutants listed in Table 20 of this rule division, and any pollutant for which the receiving stream has been designated by the Department as water quality limited; and~~

~~(II) Receiving stream flow, by month; and~~

~~(III) The expected impact of the discharge, by month, on the receiving stream for the entire proposed mixing zone area for all of the pollutants listed above. Included in this analysis shall be a comparison of the receiving stream water quality with the discharge and without the discharge; and~~

~~(IV) A description of fish, other vertebrate populations, and macroinvertebrates that reside in or are likely to pass through the proposed mixing zone, including expected location (if known), species identification, stage of development, and time of year when their presence is expected. For existing discharges, the applicant shall provide the same information for similar nearby streams that are unaffected by wastewater discharges. In addition, any threatened or endangered species in the immediate vicinity of the receiving stream shall be identified; and~~

~~(V) The expected impact of the discharge on aquatic organisms and/or fish passage, including any expected negative impacts from the effluent attracting fish where that is not desirable; and~~

~~(VI) A description of the expected environmental benefits to be derived from the discharge or other mitigation measures proposed by the applicant, including but not limited to improvements in water quality, improvements in fish passage, and improvements in aquatic habitat. If the applicant proposes to undertake mitigation measures designed to provide environmental benefits (e.g., purchasing water or water~~

~~conservation rights to increase stream flows or establishing stream cover to decrease temperature), the applicant shall describe the mitigation measures in detail, including a description of the steps it will take to ensure that the benefits of the mitigation measures are attained and are not lost or diminished over time.~~

~~(VII) Some or all of the above study requirements may be waived by the Department, if the Department determines that the information is not needed. In the event that the Department does waive some or all of the above study requirements, the basis for waiving the requirements will be included in the permit evaluation report upon the next permit renewal or modification relating to the mixing zone.~~

~~(VIII) Upon request of the Department, the applicant shall conduct additional studies to further evaluate the impact of the discharge, which may include whole effluent toxicity testing, stream surveys for water quality, stream surveys for fish and other aquatic organisms, or other studies as specified by the Department.~~

~~(IX) In evaluating whether an existing or proposed increase in an existing discharge would result in a net environmental benefit, the applicant shall use the native biological community in a nearby, similar stream that is unaffected by wastewater discharges. The Department shall consider all information generated as required in this rule and other relevant information. The evaluation shall consider benefits to the native aquatic biological community only.~~

~~(iii) Permit conditions: Upon determination by the Department that the discharge and mitigation measures (if any) will likely result in an overall environmental benefit, the Department shall include appropriate permit conditions to insure that the environmental benefits are attained and continue. Such permit conditions may include but not be limited to:~~

~~(I) Maximum allowed effluent flows and pollutant loads;~~

~~(II) Requirements to maintain land ownership, easements, contracts, or other legally binding measures necessary to assure that mitigation measures, if any, remain in place and effective;~~

~~(III) Special operating conditions;~~

~~(IV) Monitoring and reporting requirements; and~~

~~(V) Studies to evaluate the effectiveness of mitigation measures.~~

~~(B) **Constructed water course**: A mixing zone may be extended through a constructed water course and into a natural water course. For the purposes of this rule, a constructed water course is one that was constructed for irrigation, site drainage, or wastewater conveyance, and has the following characteristics:~~

(i) Irrigation flows, stormwater runoff, or wastewater flows have replaced natural streamflow regimes; and

(ii) The channel form is greatly simplified in lengthwise and cross sectional profiles; and

(iii) Physical and biological characteristics that differ significantly from nearby natural streams; and

(iv) A much lower diversity of aquatic species than found in nearby natural streams; and

(v) If the constructed water course is an irrigation canal, then it must have effective fish screens in place to qualify as a constructed water course.

(C) **Insignificant discharges:** Insignificant discharges are those that either by volume, pollutant characteristics, and/or temporary nature are expected to have little if any impact on beneficial uses in the receiving stream, and for which the extensive evaluations required for discharges to smaller streams are not warranted. For the purposes of this rule, only filter backwash discharges and underground storage tank cleanups are considered insignificant discharges.

(D) **Other requirements for alternate mixing zones:** The following are additional requirements for dischargers requesting an alternate mixing zone:

(i) Most discharges that qualify for an alternate mixing zone will extend through the receiving stream until a larger stream is reached, where thorough mixing of the effluent can occur and where the edge of the allowed mixing zone will be located. The portion of the mixing zone in the larger stream must meet all of the requirements of the standard mixing zone, including not blocking aquatic life passage; and

(ii) An alternate mixing zone shall not be granted if a municipal drinking water intake is located within the proposed mixing zone, and the discharge has a significant adverse impact on the drinking water source; and

(iii) The discharge will not pose an unreasonable hazard to the environment or pose a significant health risk, considering the likely pathways of exposure; and

(iv) The discharge shall not be acutely toxic to organisms passing through the mixing zone; and

(v) An alternate mixing zone shall not be granted if the substances discharged may accumulate in the sediments or bioaccumulate in aquatic life or wildlife to levels that adversely affect public health, safety, or welfare; aquatic life; wildlife; or other designated beneficial uses; and

(vi) In the event that the receiving stream is water quality limited, the requirements for discharges to water quality limited streams supersede this rule.

(5) Testing methods: The analytical testing methods for determining compliance with the water quality standards contained in this rule shall be in accordance with the most recent edition of **Standard Methods for the Examination of Water and Waste Water published jointly by the American Public Health Association, American water Works Association, and Water Pollution Control Federation**, unless the Department has published an applicable superseding method, in which case testing shall be in accordance with the superseding method; provided, however, that testing in accordance with an alternative method shall comply with this rule if the Department has published the method or has approved the method in writing.

[ED. NOTE: The Table(s) referenced in this rule is not printed in the OAR Compilation. Copies are available from the agency.]

[Publications: Publication(s) referred to or incorporated by reference in this rule are available from the office of the agency.]

Stat. Auth.: ORS 468.735, ORS 468B.035 & ORS 468B.048
Stats. Implemented: ORS 468B.048
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 1-1980, f. & ef. 1-9-80; DEQ 18-1987, f. & ef. 9-4-87; DEQ 14-1991, f. & cert. ef. 8-13-91; DEQ 17-1992, f. & cert. ef. 8-7-92 (and corrected 8-13-92); DEQ 6-1995, f. & cert. ef. 2-28-95; DEQ 21-1995(Temp), f. & cert. ef. 9-21-95; DEQ 5-1996, f. & cert. ef. 3-7-96; DEQ 22-1997, f. & cert. ef. 10-24-97

340-041-0455

Minimum Design Criteria for Treatment and Control of Wastes

Subject to the implementation program set forth in OAR 340-041-0120, prior to discharge of any wastes from any new or modified facility to any waters of the Willamette River Basin, such wastes shall be treated and controlled in facilities designed in accordance with the following minimum criteria. (In designing treatment facilities, average conditions and a normal range of variability are generally used in establishing design criteria. A facility once completed and placed in operation should operate at or near the design limit most of the time but may operate below the design criteria limit at times due to variables which are unpredictable or uncontrollable. This is particularly true for biological treatment facilities. The actual operating limits are intended to be established by permit pursuant to ORS 468.740 and recognize that the actual performance level may at times be less than the design criteria).

(1) Sewage wastes:

(a) Willamette River and tributaries except Tualatin River Subbasin:

(A) During periods of low stream flows (approximately May 1 to October 31): Treatment resulting in monthly average effluent concentrations not to exceed 10 mg/l of BOD and 10 mg/l of SS or equivalent control;

~~(B) During the period of high stream flows (approximately November 1 to April 30): A minimum of secondary treatment or equivalent control and unless otherwise specifically authorized by the Department, operation of all waste treatment and control facilities at maximum practical efficiency and effectiveness so as to minimize waste discharges to public waters.~~

~~(b) Main stem Tualatin River from mouth to Gaston (river mile 0 to 65):~~

~~(A) During periods of low stream flows (approximately May 1 to October 31): Treatment resulting in monthly average effluent concentrations not to exceed 10 mg/l of BOD and 10 mg/l of SS or equivalent control;~~

~~(B) During the period of high stream flows (approximately November 1 to April 30): Treatment resulting in monthly average effluent concentrations not to exceed 20 mg/l of BOD and 20 mg/l of SS or equivalent control.~~

~~(c) Main stem Tualatin River above Gaston (river mile 65) and all tributaries to the Tualatin River: Treatment resulting in monthly average effluent concentrations not to exceed 5 mg/l of BOD and 5 mg/l of SS or equivalent control;~~

~~(d) Tualatin River Subbasin: The dissolved oxygen level in the discharged effluents shall not be less than 6 mg/l;~~

~~(e) Main stem Columbia River:~~

~~(A) During summer (May 1 to October 31): Treatment resulting in monthly average effluent concentrations not to exceed 20 mg/l of BOD and 20 mg/l of SS or equivalent control;~~

~~(B) During winter (November 1 to April 30): A minimum of secondary treatment or equivalent control and unless otherwise specifically authorized by the Department, operation of all waste treatment and control facilities at maximum practicable efficiency and effectiveness so as to minimize waste discharges to public waters.~~

~~(f) Effluent BOD concentrations in mg/l, divided by the dilution factor (ratio of receiving stream flow to effluent flow) shall not exceed one unless otherwise specifically approved by the Environmental Quality Commission;~~

~~(g) Sewage wastes shall be disinfected, after treatment, equivalent to thorough mixing with sufficient chlorine to provide a residual of at least one part per million after 60 minutes of contact time unless otherwise specifically authorized by permit;~~

~~(h) Positive protection shall be provided to prevent bypassing raw or inadequately treated sewage to public waters unless otherwise approved by the Department where elimination of inflow and infiltration would be necessary but not presently practicable;~~

~~(i) More stringent waste treatment and control requirements may be imposed where special conditions may require.~~

~~(2) Industrial wastes:~~

~~(a) After maximum practicable inplant control, a minimum of secondary treatment or equivalent control (reduction of suspended solids and organic material where present in significant quantities, effective disinfection where bacterial organisms of public health significance are present, and control of toxic or other deleterious substances);~~

~~(b) Specific industrial waste treatment requirements shall be determined on an individual basis in accordance with the provisions of this plan, applicable federal requirements, and the following:~~

~~(A) The uses which are or may likely be made of the receiving stream;~~

~~(B) The size and nature of flow of the receiving stream;~~

~~(C) The quantity and quality of wastes to be treated; and~~

~~(D) The presence or absence of other sources of pollution on the same watershed.~~

~~(c) Where industrial, commercial, or agricultural effluents contain significant quantities of potentially toxic elements, treatment requirements shall be determined utilizing appropriate bioassays;~~

~~(d) Industrial cooling waters containing significant heat loads shall be subjected to offstream cooling or heat recovery prior to discharge to public waters;~~

~~(e) Positive protection shall be provided to prevent bypassing of raw or inadequately treated industrial wastes to any public waters;~~

~~(f) Facilities shall be provided to prevent and contain spills of potentially toxic or hazardous materials and a positive program for containment and cleanup of such spills should they occur shall be developed and maintained.~~

~~(3) Nonpoint source pollution control in the Tualatin River subbasin and lands draining to Oswego Lake:~~

~~(a) Subsection (3)(b) of this rule shall apply to any new land development within the Tualatin River and Oswego Lake subbasins, except those developments with application dates prior to January 1, 1990. The application date shall be the date on which a complete application for development approval is received by the local jurisdiction in accordance with the regulations of the local jurisdiction;~~

~~(b) For land development, no preliminary plat, site plan, permit or public works project shall be approved by any jurisdiction in these subbasins unless the conditions of the plat permit or plan approval includes an erosion control plan containing methods and/or interim facilities to be constructed or used concurrently with land development and to be operated during construction to control the discharge of sediment in the stormwater runoff. The erosion control plan shall utilize:~~

~~(A) Protection techniques to control soil erosion and sediment transport to less than one ton per acre per year, as calculated using the Soil Conservation Service Universal Soil Loss Equation or other equivalent methods. See **Figures 1** to **6** in **Appendix 1** for examples. The erosion control plan shall include temporary sedimentation basins or other sediment control devices when, because of steep slopes or other site specific considerations, other on-site sediment control methods will not likely keep the sediment transport to less than one ton per acre per year. The local jurisdictions may establish additional requirements for meeting an equivalent degree of control. Any sediment basins constructed shall be sized using 1.5 feet minimum sediment storage depth plus 2.0 feet storage depth above for a settlement zone. The storage capacity of the basin shall be sized to store all of the sediment that is likely to be transported and collected during construction while the erosion potential exists. When the erosion potential has been removed, the sediment basin, or other sediment control facilities, can be removed and the site restored as per the final site plan. All sediment basins shall be constructed with an emergency overflow to prevent erosion or failure of the containment dike; or~~

~~(B) A soil erosion control matrix derived from and consistent with the universal soil equation approved by the jurisdiction or the Department.~~

~~(c) The Director may modify **Appendix 1** as necessary without approval from the Environmental Quality Commission. The Director may modify **Appendix 1** to simplify it and to make it easier for people to apply;~~

~~(d) Subsection (3)(e) of this rule shall apply to any new land development within the Tualatin River and Oswego Lake subbasins, except:~~

~~(A) Those developments with application dates prior to June 1, 1990. The application date shall be the date on which a complete application for development approval is received by the local jurisdiction in accordance with the regulations of the local jurisdiction;~~

~~(B) One and two family dwellings on existing lots of record;~~

~~(C) Sewer lines, water lines, utilities or other land development that will not directly increase nonpoint source pollution once construction has been completed and the site is either restored to or not altered from its approximate original condition;~~

~~(D) If the Environmental Quality Commission determines that a jurisdiction does not need to require stormwater quality control facilities for new development;~~

~~(E) When a jurisdiction adopts ordinances that provide for a stormwater quality program equivalent to subsection (e) of this section. Ordinances adopted to implement equivalent programs shall:~~

~~(i) Encourage on-site retention of stormwater, require phosphorus removal equivalent to the removal efficiency required by subsection (e) of this section, provide for adequate operation and maintenance of stormwater quality control facilities, and require financial assurance, or equivalent security that assures construction of the stormwater quality control facilities required by the ordinance;~~

~~(ii) If the ordinances provide for exemptions other than those allowed for by paragraphs (B) and (C) of this subsection, the ordinances shall provide for collection of in lieu fees or other equivalent mechanisms that assure financing for and construction of associated, off site stormwater quality control facilities. No exemption shall be allowed if the jurisdiction is not meeting an approved schedule for identifying location of the off site stormwater quality control facility to serve the development requesting an exemption.~~

~~(e) For new development, no plat, site plan, building permit or public works project shall be approved by any jurisdiction in these subbasins unless the conditions of the plat, permit or plan approval require permanent stormwater quality control facilities to control phosphorus loadings associated with stormwater runoff from the development site. Jurisdictions shall encourage and provide preference to techniques and methods that prevent and minimize pollutants from entering the storm and surface water systems. Permanent stormwater quality control facilities for phosphorus shall meet the following requirements:~~

~~(A) The stormwater quality control facilities shall be designed to achieve a phosphorus removal efficiency as calculated from the following equation:~~

~~$R_p = 100 - 24.5/R_v$~~

~~Where:~~

~~R_p = Required phosphorus removal~~

~~efficiency~~

~~R_v = Average site runoff coefficient~~

~~The average site runoff coefficient can be calculated from the following equation:~~

~~$R_v = (0.7 \times A_1) + (0.3 \times A_2) + (0.7 \times A_3) +$~~

~~$(0.05 \times A_4) + (A_5 \times 0.0)$~~

~~Where:~~

~~A_1 = fraction of total area that is paved streets with curbs and that drain to storm sewers or open ditches.~~

~~A_2 = fraction of total area that is paved streets that drain to water quality swales located on site.~~

~~A_3 = fraction of total area that is building roof and paved parking that drains to storm sewers.~~

~~A_4 = fraction of total area that is grass, trees and marsh areas.~~

~~A_5 = fraction of total area for which runoff will be collected and retained on site with no direct discharge to surface waters.~~

~~(B) A jurisdiction may modify the equation for R_v to allow the application of additional runoff coefficients associated with land surfaces not identified in this subsection. The Department shall be notified in writing whenever an additional runoff coefficient is used. The use of additional runoff coefficients shall be based on scientific data. The jurisdiction shall discontinue use of an additional runoff coefficient if the Department objects to its use in writing within ten days of receiving notification;~~

~~(C) The stormwater quality control facilities shall be designed to meet the removal efficiency specified in paragraph (A) of this subsection for a mean summertime storm event totaling 0.36 inches of precipitation with an average return period of 96 hours;~~

~~(D) The removal efficiency specified in paragraph (A) of this subsection specify only design requirements and are not intended to be used as a basis for performance evaluation or compliance determination of the stormwater quality control facility installed or constructed pursuant to this subsection;~~

~~(E) Stormwater quality control facilities required by this subsection shall be approved by a jurisdiction only if the following are met:~~

~~(i) For developments larger than one acre, the plat or site plan shall include plans and a certification prepared by an Oregon registered, professional engineer that the proposed stormwater control facilities have been designed in accordance with criteria expected to achieve removal efficiencies for total phosphorus required by paragraph (A) of this subsection;~~

~~(ii) The plat or site plan shall be consistent with the area and associated runoff coefficients used to determine the removal efficiency required in paragraph (A) of this subsection;~~

~~(iii) A financial assurance, or equivalent security acceptable to the jurisdiction, shall be provided by the developer with the jurisdiction that assures that the stormwater control facilities are constructed according to the plans established in the plat or site plan approval. Where practicable, the jurisdiction shall combine the financial assurance required by this rule with other financial assurance requirements imposed by the jurisdiction;~~

~~(iv) Each jurisdiction which constructs or authorizes construction of permanent stormwater quality control facilities, shall file with the Department, an operation and maintenance plan for the stormwater quality control facilities within its jurisdiction. The operation and maintenance plan shall allow for public or private ownership, operation, and maintenance of individual permanent stormwater quality control facilities. The jurisdiction or private operator shall operate and maintain the permanent stormwater control facilities in accordance with the operation and maintenance plan.~~

~~(f) Except as required by paragraph (D) of this subsection, the jurisdiction may grant an exception to subsection (e) of this section if the jurisdiction chooses to adopt and, on a case-by-case basis, impose a one time in-lieu fee. The fee will be an option where, because of the size of the development, topography, or other factors, the jurisdiction determines that the construction of on-site permanent stormwater treatment systems is impracticable or undesirable:~~

~~(A) The in-lieu fee shall be based upon a reasonable estimate of the current, prorated cost for the jurisdiction to provide stormwater quality control facilities for the land development being assessed the fee. Estimated costs shall include costs associated with off-site land and rights-of-way acquisition, design, construction and construction inspection;~~

~~(B) The jurisdiction shall deposit any in-lieu fees collected pursuant to this paragraph in an account dedicated only to reimbursing the jurisdiction for expenses related to off-site land and rights-of-way acquisition, design, construction and construction inspection of stormwater quality control facilities;~~

~~(C) The ordinance establishing the in-lieu fee shall include provisions that reduce the fee in proportion to the ratio of the site's average runoff coefficient (R_v), as established according to the equation in paragraph (3)(c)(A) of this rule;~~

(D) No new development shall be granted an exemption if the jurisdiction is not meeting an approved time schedule for identifying the location for the off-site stormwater quality control facilities that would serve that development.

(g) The Department may approve other mechanisms that allow jurisdictions to grant exemptions to new development. The Department shall only approve those mechanisms that assure financing for off-site stormwater quality control facilities and that encourage or require on-site retention where feasible;

(h) Subsection (b) of this section shall apply until a jurisdiction adopts ordinances that provide for a program equivalent to subsection (b) of this section, or the Environmental Quality Commission determines such a program is not necessary when it approves the jurisdiction's program plan required by OAR 340-041-0470(3)(g).

[ED. NOTE: The Appendix referenced in this rule is not printed in the OAR Compilation. Copies are available from the agency.]

Stat. Auth.: ORS 468
Stats. Implemented: ORS 468B.030
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 16-1989, f. & cert. ef. 7-31-89 (and corrected 8-3-89); DEQ 30-1989, f. & cert. ef. 12-14-89

340-041-0470

Special Policies and Guidelines

(1) In order to preserve or improve the existing high quality water for municipal water supplies, recreation, and preservation of aquatic life, new or increased waste discharges shall be prohibited, except as provided by this rule, to the waters of:

(a) The Clackamas River Subbasin;

(b) The McKenzie River Subbasin above the Hayden Bridge (river mile 15);

(c) The North Santiam River Subbasin.

(2) Except as otherwise provided for in this rule, this rule becomes effective and applies to all permits pending or applied for after the date of filing with the Secretary of State. For purposes of sections (1) through (7) of this rule, the following definitions apply:

(a) "Waste Discharges" are defined to mean any discharge that requires and NPDES permit, WPCF permit, or 401 Certification. Individual on-site sewage disposal systems subject to issuance of a construction-installation permit; domestic sewage facilities that discharge less than 5,000 gallons per day under WPCF permit; biosolids land applied within agronomic loading rates pursuant to OAR chapter 340, division 50; and reclaimed

~~domestic waste water land applied at agronomic rates pursuant to OAR chapter 340, division 55 are excluded from this definition.~~

~~(b) "Existing Discharges" are defined as those discharges from point sources which existed prior to January 28, 1994;~~

~~(c) "Existing Facilities" are defined as those for which construction started prior to January 28, 1994. Where existing facilities are exempted from requirements placed on new facilities, the exemption applies only to the specific permit(s) addressed in the subsection which allows the exemption;~~

~~(d) "New" NPDES and WPCF permits are defined to include permits for potential or existing discharges which did not previously have a permit, and existing discharges which have a permit, but request an increased load limitation;~~

~~(e) "Agronomic Loading Rate" means the application of biosolids or reclaimed effluent to the land at a rate which is designed to:~~

~~(A) Provide the quantity of plant nutrients, usually nitrogen, needed by a food crop, feed crop, fiber crop, cover crop or other vegetation grown on the land; and~~

~~(B) To minimize the quantity of nitrogen or other nutrients from the land applied materials that passes below the root zone of the crop or vegetation grown on the land to groundwater.~~

~~(f) "Biosolids" means solids derived from primary, secondary, or advanced treatment of domestic wastewater which have been treated through one or more controlled processes that significantly reduce pathogens and reduce volatile solids or chemical stabilize solids to the extent that they do not attract vectors. This term refers to domestic wastewater treatment facility solids that have undergone adequate treatment to permit their land application;~~

~~(g) "Reclaimed Wastewater" means treated effluent from a domestic wastewater treatment system which, as a result of treatment, is suitable for a direct beneficial purpose or a controlled use that could not otherwise occur.~~

~~(3) To respond to emergencies or to otherwise avoid imminent serious danger to public health or welfare, the Director or designee may allow lower water quality on a short term basis.~~

~~(4) The Director or a designee may renew or transfer NPDES and WPCF permits for existing facilities. Existing facilities with NPDES permits may not be granted increases in their permitted mass load limitations. The following restrictions and exceptions apply:~~

~~(a) The Department shall conduct an inspection prior to permit renewal. Existing sources with general permits who are found not to qualify for a general permit, and who wish to continue discharging, shall be required to apply for an individual permit;~~

~~(b) Fish hatcheries (General Permit 300) and log ponds (General Permit 400) shall be required to apply for an individual permit at the time of permit renewal;~~

~~(c) Additional industrial, confined animal feeding operations, or domestic waste loads that are irrigated on land at agronomic rates or that otherwise meet the conditions of section (7) of this rule shall not be considered an increase in the permitted wasteload.~~

~~(5) The Director or a designee may issue the following General Permits or Certifications subject to the conditions of the Permit or Certification:~~

~~(a) Storm water construction activities (General Permits 1200C and 1200CA);~~

~~(b) Underground storage tank cleanups using best available treatment technology (General Permit 1500);~~

~~(c) Non-contact cooling water (General Permit 100);~~

~~(d) Filter backwash (General Permit 200);~~

~~(e) Boiler blowdown water (General Permit 500);~~

~~(f) Suction dredging (General Permit 700) only in portions of the basins that are not designated as Scenic Waterways under ORS 390.805 to 390.925;~~

~~(g) Federal Clean Water Act Section 401 water quality certifications.~~

~~(6) Long term general and individual storm water permits may be allowed as required by State and/or Federal law. The following requirements apply:~~

~~(a) New storm water discharge permittees shall maintain a monitoring and water quality evaluation program which is effective in evaluation of the in-stream water quality impacts of the discharge; and~~

~~(b) When sufficient data is available to do so, the Department shall assess the water quality impacts of storm water discharges. Within a subbasin, if the proportion of total degradation that is contributed by the storm water is determined to be significant compared to that of other permitted sources, or if the Department determines that reducing degradation due to storm water is cost-effective when compared to other available pollution control options, the Department may institute regulatory mechanisms or modify permit conditions to require control technologies and/or practices which result in protection that is greater than that required statewide.~~

~~(7) Industrial waste discharge sources, confined animal feeding operations, and domestic sewage treatment facilities shall meet the following conditions:~~

~~(a) No NPDES permits for new industrial or new confined animal feeding operation waste discharges, or new domestic sewage treatment facilities shall be issued, except as allowed under sections (3), (4), (5), and (6) of this rule;~~

~~(b) The Department may issue WPCF permits for new industrial or confined animal feeding operation waste discharges provided:~~

~~(A) There is no waste discharge to surface water; and~~

~~(B) All groundwater quality protection requirements of OAR 340-040-0030 are met. Neither the Department nor the Commission shall grant a concentration limit variance as provided in OAR 340-040-0030, unless the Commission finds that all appropriate groundwater quality protection requirements and compliance monitoring are met and there will be no measurable change in the water quality of the surface water that would be potentially affected by the proposed facility. For any variance request, a public hearing shall be held prior to Commission action on the request.~~

~~(c) The Department may issue WPCF permits for new domestic sewage treatment facilities provided there is no waste discharge to surface water and provided:~~

~~(A) All groundwater quality protection requirements of OAR 340-040-0030 are met. Neither the Department nor the Commission shall grant a concentration limit variance as provided in OAR 340-040-0030, unless the Commission finds that all appropriate groundwater quality protection requirements and compliance monitoring are met and there will be no measurable change in the water quality of the surface water that would be potentially affected by the proposed facility. For any variance request, a public hearing shall be held and the permit application will be evaluated according to paragraphs (B) and (C) of this subsection;~~

~~(B) The Commission finds that the proposed, new domestic sewage treatment facility provides a preferable means of sewage collection, treatment and disposal as compared to individual on-site sewage disposal systems. To be preferable, the Commission shall find that one of the following criteria applies:~~

~~(i) The new sewage treatment facility will eliminate a significant number of failing individual on-site sewage disposal systems that cannot be otherwise reliably and cost-effectively repaired; or~~

~~(ii) The new sewage treatment facility will treat domestic sewage that would otherwise be treated by individual on-site sewage disposal systems, from which the cumulative impact to groundwater is projected to be greater than that from the new facility; or~~

~~(iii) If an individual on-site sewage disposal system, or several such systems, would not normally be utilized, a new sewage treatment facility may be allowed if the Commission finds that the social and economic benefits of the discharge outweigh the possible environmental impacts.~~

~~(C) Applicants for domestic wastewater WPCF permits must meet the following requirements:~~

~~(i) Application must be for an individual permit; and~~

~~(ii) The proposed discharge must not include wastes that incapacitate the treatment system; and~~

~~(iii) The facility must be operated or supervised by a certified wastewater treatment plant operator as required in OAR 340-049-0015, except as exempted by ORS 448.430; and~~

~~(iv) Annual written certification of proper treatment and disposal system operation shall be obtained from a qualified Registered Sanitarian, Professional Engineer, or certified wasterwater treatment system operator.~~

~~(8) The Environmental Quality Commission shall investigate, together with any other affected state agencies, the means of maintaining at least existing minimum flow during the summer low flow period.~~

~~(9) In order to improve water quality within the Yamhill River subbasin to meet the existing water quality standard for pH, the following special rules for total maximum daily loads, waste load allocations, load allocations and program plans are established:~~

~~(a) After completion of wastewater control facilities and program plans approved by the Commission under this rule and no later than June 30, 1994, no activities shall be allowed and no wastewater shall be discharged to the Yamhill River or its tributaries without the authorization of the Commission that cause the monthly median concentration of total phosphorus to exceed 70 ug/1 as measured during the low flow period between approximately May 1 and October 31*** of each year;~~

~~(b) Within 90 days of adoption of these rules, the Cities of McMinnville and Lafayette shall submit a program plan and time schedule to the Department describing how and when they will modify their sewerage facility to comply with this rule;~~

~~(c) Final program plans shall be reviewed and approved by the Commission. The Commission may define alternative compliance dates as program plans are approved. All proposed final program plans shall be subject to public hearing prior to consideration for approval by the Commission;~~

~~(d) The Department shall within 60 days of adoption of these rules distribute initial waste load allocations and load allocations to the point and nonpoint sources in the basin. These~~

allocations shall be considered interim and may redistributed based upon the conclusions of the approved program plans.

***Precise dates for complying with this rule may be conditioned on physical conditions (i.e., flow, temperature) of the receiving water and shall be specified in individual permits or memorandums of understanding issued by the Department. The Department shall consider system design flows, river travel times, and other relevant information when establishing the specific conditions to be inserted in the permits or memorandums of understanding.

Stat. Auth.: ORS 468.020
Stats. Implemented: ORS 468B.030
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 17-1988, f. & cert. ef. 7-13-88; DEQ 25-1988, f. & cert. ef. 9-16-88; DEQ 18-1989, f. & cert. ef. 7-31-89 (and corrected 8-3-89); DEQ 3-1994, f. & cert. ef. 2-2-94; DEQ 5-1995, f. & cert. ef. 2-28-95; DEQ 5-2001, f. & cert. ef. 4-24-01

Sandy Basin

340-041-0482

Beneficial Water Uses to be Protected

Water quality in the Sandy River Basin (see **Figures 1** and **8**) shall be managed to protect the recognized beneficial uses as indicated in **Table 7.**

[ED. NOTE: The Figure(s) and Table referenced in this rule are not printed in the OAR Compilation. Copies are available from the agency.]

Stat. Auth.: ORS 468
Stats. Implemented: ORS 468B.048
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 9-1985, f. & ef. 8-6-85

340-041-0485

Water Quality Standards Not to be Exceeded (To be Adopted Pursuant to ORS 468.735 and Enforceable Pursuant to ORS 468.720, 468.990, and 468.992)

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

~~(2) No wastes shall be discharged and no activities shall be conducted which either alone or in combination with other wastes or activities will cause violation of the following standards in the waters of the Sandy River Basin:~~

~~(a) Dissolved oxygen (DO): The changes adopted by the Commission on January 11, 1996, become effective July 1, 1996. Until that time, the requirements of this rule that were in effect on January 10, 1996, apply:~~

~~(A) For waterbodies identified by the Department as providing salmonid spawning, during the periods from spawning until fry emergence from the gravels, the following criteria apply:~~

~~(i) The dissolved oxygen shall not be less than 11.0 mg/l. However, if the minimum intergravel dissolved oxygen, measured as a spatial median, is 8.0 mg/l or greater, then the DO criterion is 9.0 mg/l;~~

~~(ii) Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 11.0 mg/l or 9.0 mg/l criteria, dissolved oxygen levels shall not be less than 95 percent of saturation.~~

~~(B) For waterbodies identified by the Department as providing salmonid spawning during the period from spawning until fry emergence from the gravels, the spatial median intergravel dissolved oxygen concentration shall not fall below 6.0 mg/l;~~

~~(C) A spatial median of 8.0 mg/l intergravel dissolved oxygen level shall be used to identify areas where the recognized beneficial use of salmonid spawning, egg incubation and fry emergence from the egg and from the gravels may be impaired and therefore require action by the Department. Upon determination that the spatial median intergravel dissolved oxygen concentration is below 8.0 mg/l, the Department may, in accordance with priorities established by the Department for evaluating water quality impaired waterbodies, determine whether to list the waterbody as water quality limited under the Section 303(d) of the Clean Water Act, initiate pollution control strategies as warranted, and where needed cooperate with appropriate designated management agencies to evaluate and implement necessary best management practices for nonpoint source pollution control;~~

~~(D) For waterbodies identified by the Department as providing cold water aquatic life, the dissolved oxygen shall not be less than 8.0 mg/l as an absolute minimum. Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 8.0 mg/l, dissolved oxygen shall not be less than 90 percent of saturation. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 8.0 mg/l as a 30 day mean minimum, 6.5 mg/l as a seven day minimum mean, and shall not fall below 6.0 mg/l as an absolute minimum (**Table 21**);~~

~~(E) For waterbodies identified by the Department as providing cool-water aquatic life, the dissolved oxygen shall not be less than 6.5 mg/l as an absolute minimum. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 6.5 mg/l as a 30-day mean minimum, 5.0 mg/l as a seven-day minimum mean, and shall not fall below 4.0 mg/l as an absolute minimum (**Table 21**);~~

~~(F) For waterbodies identified by the Department as providing warm-water aquatic life, the dissolved oxygen shall not be less than 5.5 mg/l as an absolute minimum. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 5.5 mg/l as a 30-day mean minimum, and shall not fall below 4.0 mg/l as an absolute minimum (**Table 21**);~~

~~(b) Temperature: The changes adopted by the Commission on January 11, 1996, become effective July 1, 1996. Until that time, the requirements of this rule that were in effect on January 10, 1996, apply. The method for measuring the numeric temperature criteria specified in this rule is defined in OAR 340-041-0006(54):~~

~~(A) To accomplish the goals identified in OAR 340-041-0120(11), unless specifically allowed under a Department-approved surface water temperature management plan as required under OAR 340-041-0026(3)(a)(D), no measurable surface water temperature increase resulting from anthropogenic activities is allowed:~~

~~(i) In a basin for which salmonid fish rearing is a designated beneficial use, and in which surface water temperatures exceed 64.0°F (17.8°C);~~

~~(ii) In the Columbia River or its associated sloughs and channels from the mouth to river mile 309 when surface water temperatures exceed 68.0°F (20.0°C);~~

~~(iii) In waters and periods of the year determined by the Department to support native salmonid spawning, egg incubation, and fry emergence from the egg and from the gravels in a basin which exceeds 55.0°F (12.8°C);~~

~~(iv) In waters determined by the Department to support or to be necessary to maintain the viability of native Oregon bull trout, when surface water temperatures exceed 50.0°F (10.0°C);~~

~~(v) In waters determined by the Department to be ecologically significant cold-water refugia;~~

~~(vi) In stream segments containing federally listed Threatened and Endangered species if the increase would impair the biological integrity of the Threatened and Endangered population;~~

~~(vii) In Oregon waters when the dissolved oxygen (DO) levels are within 0.5 mg/l or 10 percent saturation of the water column or intergravel DO criterion for a given stream reach or subbasin;~~

~~(viii) In natural lakes.~~

~~(B) An exceedance of the numeric criteria identified in subparagraphs (A)(i) through (iv) of this subsection will not be deemed a temperature standard violation if it occurs when the air temperature during the warmest seven-day period of the year exceeds the 90th percentile of the seven-day average daily maximum air temperature calculated in a yearly series over the historic record. However, during such periods, the anthropogenic sources must still continue to comply with their surface water temperature management plans developed under OAR 340-041-0026(3)(a)(D);~~

~~(C) Any source may petition the Commission for an exception to subparagraphs (A)(i) through (viii) of this subsection for discharge above the identified criteria if:~~

~~(i) The source provides the necessary scientific information to describe how the designated beneficial uses would not be adversely impacted; or~~

~~(ii) A source is implementing all reasonable management practices or measures; its activity will not significantly affect the beneficial uses; and the environmental cost of treating the parameter to the level necessary to assure full protection would outweigh the risk to the resource.~~

~~(c) Turbidity (Nephelometric Turbidity Units, NTU): No more than a ten percent cumulative increase in natural stream turbidities shall be allowed, as measured relative to a control point immediately upstream of the turbidity causing activity. However, limited duration activities necessary to address an emergency or to accommodate essential dredging, construction or other legitimate activities and which cause the standard to be exceeded may be authorized provided all practicable turbidity control techniques have been applied and one of the following has been granted:~~

~~(A) Emergency activities: Approval coordinated by DEQ with the Department of Fish and Wildlife under conditions they may prescribe to accommodate response to emergencies or to protect public health and welfare;~~

~~(B) Dredging, Construction or other Legitimate Activities: Permit or certification authorized under terms of Section 401 or 404 (Permits and Licenses, Federal Water Pollution Control Act) or OAR 141-085-0100 et seq. (Removal and Fill Permits, Division of State Lands), with limitations and conditions governing the activity set forth in the permit or certificate.~~

~~(d) pH (hydrogen ion concentration): pH values shall not fall outside the ranges identified in paragraphs (A), (B), and (C) of this subsection. The following exception applies: Waters impounded by dams existing on January 1, 1996, which have pHs that exceed the~~

~~criteria shall not be considered in violation of the standard if the Department determines that the exceedance would not occur without the impoundment and that all practicable measures have been taken to bring the pH in the impounded waters into compliance with the criteria:~~

~~(A) Mainstem Columbia River (river miles 120 to 147): pH values shall not fall outside the range of 7.0 to 8.5;~~

~~(B) All other Basin waters (except Cascade lakes): pH values shall not fall outside the range of 6.5 to 8.5;~~

~~(C) Cascade lakes above 3,000 feet altitude: pH values shall not fall outside the range of 6.0 to 8.5.~~

~~(e) Bacteria standards:~~

~~(A) Numeric Criteria: Organisms of the coliform group commonly associated with fecal sources (MPN or equivalent membrane filtration using a representative number of samples) shall not exceed the criteria described in subparagraphs (i) and (ii) of this paragraph. Freshwaters:~~

~~(i) A 30-day log mean of 126 *E. coli* organisms per 100 ml, based on a minimum of five (5) samples;~~

~~(ii) No single sample shall exceed 406 *E. coli* organisms per 100 ml.~~

~~(B) Raw Sewage Prohibition: No sewage shall be discharged into or in any other manner be allowed to enter the waters of the State unless such sewage has been treated in a manner approved by the Department or otherwise allowed by these rules;~~

~~(C) Animal Waste: Runoff contaminated with domesticated animal wastes shall be minimized and treated to the maximum extent practicable before it is allowed to enter waters of the State;~~

~~(D) Effluent Limitations and Water Quality Limited Waterbodies: Effluent limitations to implement the criteria in this rule are found in OAR 340-041-0120(12) through (16). Implementation of the criteria in this rule in water quality limited waterbodies is described in OAR 340-041-0026(3)(a)(I) and OAR 340-041-0120(17).~~

~~(f) Bacterial pollution or other conditions deleterious to waters used for domestic purposes, livestock watering, irrigation, bathing, or shellfish propagation, or otherwise injurious to public health shall not be allowed;~~

~~(g) The liberation of dissolved gases, such as carbon dioxide, hydrogen sulfide, or other gases, in sufficient quantities to cause objectionable odors or to be deleterious to fish or~~

~~other aquatic life, navigation, recreation, or other reasonable uses made of such waters shall not be allowed;~~

~~(h) The development of fungi or other growths having a deleterious effect on stream bottoms, fish or other aquatic life, or which are injurious to health, recreation, or industry shall not be allowed;~~

~~(i) The creation of tastes or odors or toxic or other conditions that are deleterious to fish or other aquatic life or affect the potability of drinking water or the palatability of fish or shellfish shall not be allowed;~~

~~(j) The formation of appreciable bottom or sludge deposits or the formation of any organic or inorganic deposits deleterious to fish or other aquatic life or injurious to public health, recreation, or industry shall not be allowed;~~

~~(k) Objectionable discoloration, scum, oily sleek or floating solids, or coating of aquatic life with oil films shall not be allowed;~~

~~(l) Aesthetic conditions offensive to the human senses of sight, taste, smell, or touch shall not be allowed;~~

~~(m) Radioisotope concentrations shall not exceed maximum permissible concentrations (MPC's) in drinking water, edible fishes or shellfishes, wildlife, irrigated crops, livestock and dairy products, or pose an external radiation hazard;~~

~~(n)(A) The concentration of total dissolved gas relative to atmospheric pressure at the point of sample collection shall not exceed 110 percent of saturation, except when stream flow exceeds the ten-year, seven-day average flood. However, for Hatchery receiving waters and waters of less than two feet in depth, the concentration of total dissolved gas relative to atmospheric pressure at the point of sample collection shall not exceed 105 percent of saturation;~~

~~(B) The Commission may modify the total dissolved gas criteria in the Columbia River for the purpose of allowing increased spill for salmonid migration. The Commission must find that:~~

~~(i) Failure to act would result in greater harm to salmonid stock survival through in-river migration than would occur by increased spill;~~

~~(ii) The modified total dissolved gas criteria associated with the increased spill provides a reasonable balance of the risk of impairment due to elevated total dissolved gas to both resident biological communities and other migrating fish and to migrating adult and juvenile salmonids when compared to other options for in-river migration of salmon;~~

~~(iii) Adequate data will exist to determine compliance with the standards; and~~

~~(iv) Biological monitoring is occurring to document that the migratory salmonid and resident biological communities are being protected.~~

~~(C) The Commission will give public notice and notify all known interested parties and will make provision for opportunity to be heard and comment on the evidence presented by others, except that the Director may modify the total dissolved gas criteria for emergencies for a period not exceeding 48 hours;~~

~~(D) The Commission may, at its discretion, consider alternative modes of migration.~~

~~(o) Total Dissolved Solids: Guide concentrations listed below shall not be exceeded unless otherwise specifically authorized by DEQ upon such conditions as it may deem necessary to carry out the general intent of this plan and to protect the beneficial uses set forth in OAR 340-041-0482:~~

~~(A) Mainstem Columbia River (River Miles 120 to 147) -- 200.0 mg/l;~~

~~(B) All Other Basin Waters -- 100.0 mg/l.~~

~~(p) Toxic Substances:~~

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

~~(B) Levels of toxic substances shall not exceed the criteria listed in **Table 20** which were based on criteria established by EPA and published in **Quality Criteria for Water (1986),** unless otherwise noted;~~

~~(C) The criteria in paragraph (B) of this subsection shall apply unless data from scientifically valid studies demonstrate that the most sensitive designated beneficial uses will not be adversely affected by exceeding a criterion or that a more restrictive criterion is warranted to protect beneficial uses, as accepted by the Department on a site specific basis. Where no published EPA criteria exist for a toxic substance, public health advisories and other published scientific literature may be considered and used, if appropriate, to set guidance values;~~

~~(D) Bio-assessment studies such as laboratory bioassays or instream measurements of indigenous biological communities, shall be conducted, as the Department deems necessary, to monitor the toxicity of complex effluents, other suspected discharges or chemical substances without numeric criteria, to aquatic life. These studies, properly conducted in accordance with standard testing procedures, may be considered as scientifically valid data for the purposes of paragraph (C) of this subsection. If toxicity~~

~~occurs, the Department shall evaluate and implement measures necessary to reduce toxicity on a case-by-case basis.~~

~~(3) Where the naturally occurring quality parameters of waters of the Sandy Basin are outside the numerical limits of the above assigned water quality standards, the naturally occurring water quality shall be the standard. However, in such cases special restrictions, described in OAR 340-041-0026(3)(a)(C)(iii), apply to discharges that affect dissolved oxygen.~~

~~(4) Mixing Zones:~~

~~(a) The Department may allow a designated portion of a receiving water to serve as a zone of dilution for wastewaters and receiving waters to mix thoroughly and this zone will be defined as a mixing zone;~~

~~(b) The Department may suspend all or part of the water quality standards, or set less restrictive standards, in the defined mixing zone, provided that the following conditions are met:~~

~~(A) The water within the mixing zone shall be free of:~~

~~(i) Materials in concentrations that will cause acute toxicity to aquatic life as measured by a Department approved bioassay method. Acute toxicity is lethality to aquatic life as measured by a significant difference in lethal concentration between the control and 100 percent effluent in an acute bioassay test. Lethality in 100 percent effluent may be allowed due to ammonia and chlorine only when it is demonstrated on a case-by-case basis that immediate dilution of the effluent within the mixing zone reduces toxicity below lethal concentrations. The Department may on a case-by-case basis establish a zone of immediate dilution if appropriate for other parameters;~~

~~(ii) Materials that will settle to form objectionable deposits;~~

~~(iii) Floating debris, oil, scum, or other materials that cause nuisance conditions;~~

~~(iv) Substances in concentrations that produce deleterious amounts of fungal or bacterial growths.~~

~~(B) The water outside the boundary of the mixing zone shall:~~

~~(i) Be free of materials in concentrations that will cause chronic (sublethal) toxicity. Chronic toxicity is measured as the concentration that causes long-term sublethal effects, such as significantly impaired growth or reproduction in aquatic organisms, during a testing period based on test species life cycle. Procedures and end points will be specified by the Department in wastewater discharge permits;~~

~~(ii) Meet all other water quality standards under normal annual low flow conditions.~~

~~(c) The limits of the mixing zone shall be described in the wastewater discharge permit. In determining the location, surface area, and volume of a mixing zone area, the Department may use appropriate mixing zone guidelines to assess the biological, physical, and chemical character of receiving waters, and effluent, and the most appropriate placement of the outfall, to protect instream water quality, public health, and other beneficial uses. Based on receiving water and effluent characteristics, the Department shall define a mixing zone in the immediate area of a wastewater discharge to:~~

~~(A) Be as small as feasible;~~

~~(B) Avoid overlap with any other mixing zones to the extent possible and be less than the total stream width as necessary to allow passage of fish and other aquatic organisms;~~

~~(C) Minimize adverse effects on the indigenous biological community especially when species are present that warrant special protection for their economic importance, tribal significance, ecological uniqueness, or for other similar reasons as determined by the Department and does not block the free passage of aquatic life;~~

~~(D) Not threaten public health;~~

~~(E) Minimize adverse effects on other designated beneficial uses outside the mixing zone.~~

~~(d) The Department may request the applicant of a permitted discharge for which a mixing zone is required, to submit all information necessary to define a mixing zone, such as:~~

~~(A) Type of operation to be conducted;~~

~~(B) Characteristics of effluent flow rates and composition;~~

~~(C) Characteristics of low flows of receiving waters;~~

~~(D) Description of potential environmental effects;~~

~~(E) Proposed design for outfall structures.~~

~~(e) The Department may, as necessary, require mixing zone monitoring studies and/or bioassays to be conducted to evaluate water quality or biological status within and outside the mixing zone boundary;~~

~~(f) The Department may change mixing zone limits or require the relocation of an outfall if it determines that the water quality within the mixing zone adversely affects any existing beneficial uses in the receiving waters.~~

(g) **Alternate requirements for mixing zones**: For some existing or proposed discharges to some receiving streams, it may not be practicable to treat wastewater to meet instream water quality standards at the point of discharge or within a short distance from the point of discharge. Some of these discharges could be allowed without impairing the overall ecological integrity of the receiving streams, or may provide an overall benefit to the receiving stream. This section specifies the conditions and circumstances under which a mixing zone may be allowed by the Department that extends beyond the immediate area around a discharge point, or that extends across a stream width. An alternate mixing zone may be approved if the applicant demonstrates to the Department's satisfaction that the discharge (A) creates an overall environmental benefit, or (B) is to a constructed water course, or (C) is insignificant. The three circumstances under which alternate mixing zones may be established are described further below.

(A) **Overall environmental benefit**.

(i) Qualifying for alternate mixing zone based on overall environmental benefit: In order to qualify for an alternate mixing zone based on a finding of overall environmental benefit, the discharger must demonstrate to the Department's satisfaction the following:

(I) That all practical strategies have been or will be implemented to minimize the pollutant loads in the effluent; and

(II) For proposed increased discharges, the current actual discharge and mixing zone does not meet the requirements of a standard mixing zone; and

(III) Either that, on balance, an environmental benefit would be lost if the discharge did not occur, or that the discharger is prepared to undertake other actions that will mitigate the effect of the discharge to an extent resulting in a net environmental benefit to the receiving stream.

(IV) For the purposes of this rule, the term "practical" shall include environmental impact, availability of alternatives, cost of alternatives, and other relevant factors.

(ii) Studies required and evaluation of studies: In order to demonstrate that, on balance, an environmental benefit will result from the discharge, the following information shall be provided by the applicant:

(I) The effluent flow and pollutant loads that are detected or expected in the effluent, by month, both average and expected worst case discharges. The parameters to be evaluated include at a minimum temperature, biochemical oxygen demand, total suspended solids, total dissolved solids, pH, settleable solids, e. coli bacteria, oil and grease, any pollutants listed in Table 20 of this rule division, and any pollutant for which the receiving stream has been designated by the Department as water quality limited; and

(II) Receiving stream flow, by month; and

~~(III) The expected impact of the discharge, by month, on the receiving stream for the entire proposed mixing zone area for all of the pollutants listed above. Included in this analysis shall be a comparison of the receiving stream water quality with the discharge and without the discharge; and~~

~~(IV) A description of fish, other vertebrate populations, and macroinvertebrates that reside in or are likely to pass through the proposed mixing zone, including expected location (if known), species identification, stage of development, and time of year when their presence is expected. For existing discharges, the applicant shall provide the same information for similar nearby streams that are unaffected by wastewater discharges. In addition, any threatened or endangered species in the immediate vicinity of the receiving stream shall be identified; and~~

~~(V) The expected impact of the discharge on aquatic organisms and/or fish passage, including any expected negative impacts from the effluent attracting fish where that is not desirable; and~~

~~(VI) A description of the expected environmental benefits to be derived from the discharge or other mitigation measures proposed by the applicant, including but not limited to improvements in water quality, improvements in fish passage, and improvements in aquatic habitat. If the applicant proposes to undertake mitigation measures designed to provide environmental benefits (e.g., purchasing water or water conservation rights to increase stream flows or establishing stream cover to decrease temperature), the applicant shall describe the mitigation measures in detail, including a description of the steps it will take to ensure that the benefits of the mitigation measures are attained and are not lost or diminished over time.~~

~~(VII) Some or all of the above study requirements may be waived by the Department, if the Department determines that the information is not needed. In the event that the Department does waive some or all of the above study requirements, the basis for waiving the requirements will be included in the permit evaluation report upon the next permit renewal or modification relating to the mixing zone.~~

~~(VIII) Upon request of the Department, the applicant shall conduct additional studies to further evaluate the impact of the discharge, which may include whole effluent toxicity testing, stream surveys for water quality, stream surveys for fish and other aquatic organisms, or other studies as specified by the Department.~~

~~(IX) In evaluating whether an existing or proposed increase in an existing discharge would result in a net environmental benefit, the applicant shall use the native biological community in a nearby, similar stream that is unaffected by wastewater discharges. The Department shall consider all information generated as required in this rule and other relevant information. The evaluation shall consider benefits to the native aquatic biological community only.~~

~~(iii) Permit conditions: Upon determination by the Department that the discharge and mitigation measures (if any) will likely result in an overall environmental benefit, the Department shall include appropriate permit conditions to insure that the environmental benefits are attained and continue. Such permit conditions may include but not be limited to:~~

~~(I) Maximum allowed effluent flows and pollutant loads;~~

~~(II) Requirements to maintain land ownership, easements, contracts, or other legally binding measures necessary to assure that mitigation measures, if any, remain in place and effective;~~

~~(III) Special operating conditions;~~

~~(IV) Monitoring and reporting requirements; and~~

~~(V) Studies to evaluate the effectiveness of mitigation measures.~~

~~(B) **Constructed water course**: A mixing zone may be extended through a constructed water course and into a natural water course. For the purposes of this rule, a constructed water course is one that was constructed for irrigation, site drainage, or wastewater conveyance, and has the following characteristics:~~

~~(i) Irrigation flows, stormwater runoff, or wastewater flows have replaced natural streamflow regimes; and~~

~~(ii) The channel form is greatly simplified in lengthwise and cross sectional profiles; and~~

~~(iii) Physical and biological characteristics that differ significantly from nearby natural streams; and~~

~~(iv) A much lower diversity of aquatic species than found in nearby natural streams; and~~

~~(v) If the constructed water course is an irrigation canal, then it must have effective fish screens in place to qualify as a constructed water course.~~

~~(C) **Insignificant discharges**: Insignificant discharges are those that either by volume, pollutant characteristics, and/or temporary nature are expected to have little if any impact on beneficial uses in the receiving stream, and for which the extensive evaluations required for discharges to smaller streams are not warranted. For the purposes of this rule, only filter backwash discharges and underground storage tank cleanups are considered insignificant discharges.~~

~~(D) **Other requirements for alternate mixing zones**: The following are additional requirements for dischargers requesting an alternate mixing zone:~~

(i) Most discharges that qualify for an alternate mixing zone will extend through the receiving stream until a larger stream is reached, where thorough mixing of the effluent can occur and where the edge of the allowed mixing zone will be located. The portion of the mixing zone in the larger stream must meet all of the requirements of the standard mixing zone, including not blocking aquatic life passage; and

(ii) An alternate mixing zone shall not be granted if a municipal drinking water intake is located within the proposed mixing zone, and the discharge has a significant adverse impact on the drinking water source; and

(iii) The discharge will not pose an unreasonable hazard to the environment or pose a significant health risk, considering the likely pathways of exposure; and

(iv) The discharge shall not be acutely toxic to organisms passing through the mixing zone; and

(v) An alternate mixing zone shall not be granted if the substances discharged may accumulate in the sediments or bioaccumulate in aquatic life or wildlife to levels that adversely affect public health, safety, or welfare; aquatic life; wildlife; or other designated beneficial uses; and

(vi) In the event that the receiving stream is water quality limited, the requirements for discharges to water quality limited streams supersede this rule.

(5) Testing methods: The analytical testing methods for determining compliance with the water quality standards contained in this rule shall be in accordance with the most recent edition of **Standard Methods for the Examination of Water and Waste Water published jointly by the American Public Health Association, American Water Works Association, and Water Pollution Control Federation**, unless the Department has published an applicable superseding method, in which case testing shall be in accordance with the superseding method; provided, however, that testing in accordance with an alternative method shall comply with this rule if the Department has published the method or has approved the method in writing.

[ED. NOTE: The Table(s) referenced in this rule is not printed in the OAR Compilation. Copies are available from the agency.]

[Publications: The publication(s) referred to or incorporated by reference in this rule are available from the office of the agency.]

Stat. Auth.: ORS 468.735, ORS 468B.035 & ORS 468B.048
Stats. Implemented: ORS 468B.048
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 1-1980, f. & ef. 1-9-80; DEQ 18-1987, f. & ef. 9-4-87; DEQ 14-1991, f. & cert. ef. 8-13-91; DEQ 17-1992, f. & cert. ef. 8-7-97 (and corrected 8-13-92); DEQ 6-1995, f. & cert. ef. 2-28-95; DEQ 21-1995(Temp), f. & cert. ef. 9-21-95; DEQ 5-1996, f. & cert. ef. 3-7-96; DEQ 22-1997, f. & cert. ef. 10-24-97

~~340-041-0495~~

~~**Minimum Design Criteria for Treatment and Control of Wastes**~~

~~Subject to the implementation program set forth in OAR 340-041-0120, prior to discharge of any wastes from any new or modified facility to any waters of the Sandy River Basin, such wastes shall be treated and controlled in facilities designed in accordance with the following minimum criteria. (In designing treatment facilities, average conditions and a normal range of variability are generally used in establishing design criteria. A facility once completed and placed in operation should operate at or near the design limit most of the time but may operate below the design criteria limit at times due to variables which are unpredictable or uncontrollable. This is particularly true for biological treatment facilities. The actual operating limits are intended to be established by permit pursuant to ORS 468.740 and recognizes that the actual performance level may at times be less than the design criteria).~~

~~(1) Sewage wastes:~~

~~(a) Main Stem Columbia River (river miles 120 to 147):~~

~~(A) During periods of low stream flows (approximately July 1 to January 31): Treatment resulting in monthly average effluent concentrations not to exceed 20 mg/l of BOD and 20 mg/l of SS or equivalent control;~~

~~(B) During the period of high stream flows (approximately February 1 to June 30): A minimum of secondary treatment or equivalent control and unless otherwise specifically authorized by the Department, operation of all waste treatment and control facilities at maximum practicable efficiency and effectiveness so as to minimize waste discharges to public waters.~~

~~(b) All other Basin waters:~~

~~(A) During periods of low stream flows (approximately June 1 to October 31): Treatment resulting in monthly average effluent concentrations not to exceed 10 mg/l of BOD and 10 mg/l of SS or equivalent control;~~

~~(B) During the period of high stream flows (approximately November 1 to May 31): A minimum of secondary treatment or equivalent control and unless otherwise specifically authorized by the Department, operation of all waste treatment and control facilities at maximum practicable efficiency and effectiveness so as to minimize waste discharges to public waters.~~

~~(c) Effluent BOD concentrations in mg/l, divided by the dilution factor (ratio of receiving stream flow to effluent flow) shall not exceed one unless otherwise approved by the EQC;~~

~~(d) Sewage wastes shall be disinfected, after treatment, equivalent to thorough mixing with sufficient chlorine to provide a residual of at least one part per million after 60 minutes of contact time unless otherwise specifically authorized by permit;~~

~~(e) Positive protection shall be provided to prevent bypassing raw or inadequately treated sewage to public waters unless otherwise approved by the Department where elimination of inflow and infiltration would be necessary, but not presently practicable;~~

~~(f) More stringent waste treatment and control requirements may be imposed where special conditions may require.~~

~~(2) Industrial wastes:~~

~~(a) After maximum practicable inplant control, a minimum of secondary treatment or equivalent control (reduction of suspended solids and organic material where present in significant quantities, effective disinfection where bacterial organisms of public health significance are present, and control of toxic or other deleterious substances);~~

~~(b) Specific industrial waste treatment requirements shall be determined on an individual basis in accordance with the provisions of this plan, applicable federal requirements, and the following:~~

~~(A) The uses which are or may likely be made of the receiving stream;~~

~~(B) The size and nature of flow of the receiving stream;~~

~~(C) The quantity and quality of wastes to be treated; and~~

~~(D) The presence or absence of other sources of pollution on the same watershed.~~

~~(c) Where industrial, commercial, or agricultural effluents contain significant quantities of potentially toxic elements, treatment requirements shall be determined utilizing appropriate bioassays;~~

~~(d) Industrial cooling waters containing significant heat loads shall be subjected to offstream cooling or heat recovery prior to discharge to public waters;~~

~~(e) Positive protection shall be provided to prevent bypassing of raw or inadequately treated industrial wastes to any public waters;~~

~~(f) Facilities shall be provided to prevent and contain spills of potentially toxic or hazardous materials and a positive program for containment and cleanup of such spills should they occur, shall be developed and maintained.~~

Stat. Auth.: ORS 468
Stats. Implemented: ORS 468B.030
Hist.: DEQ 128, f. & ef. 1-21-77

Hood Basin

340-041-0522

Beneficial Water Uses to be Protected

Water quality in the Hood River Basin (see **Figures 1** and **9**) shall be managed to protect the recognized beneficial uses as indicated in **Table 8**.

[ED. NOTE: The Figure(s) and Table referenced in this rule are not printed in the OAR Compilation. Copies are available from the agency.]

Stat. Auth.: ORS 468
Stats. Implemented: ORS 468B.048
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 9-1985, f. & ef. 8-6-85

340-041-0525

Water Quality Standards Not to be Exceeded (To be Adopted Pursuant to ORS 468.735 and Enforceable Pursuant to ORS 468.720, 468.990, and 468.992)

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

(2) No wastes shall be discharged and no activities shall be conducted which either alone or in combination with other wastes or activities will cause violation of the following standards in the waters of the Hood River Basin:

(a) Dissolved oxygen (DO): The changes adopted by the Commission on January 11, 1996, become effective July 1, 1996. Until that time, the requirements of this rule that were in effect on January 10, 1996, apply:

(A) For waterbodies identified by the Department as providing salmonid spawning, during the periods from spawning until fry emergence from the gravels, the following criteria apply:

~~(i) The dissolved oxygen shall not be less than 11.0 mg/l. However, if the minimum intergravel dissolved oxygen, measured as a spatial median, is 8.0 mg/l or greater, then the DO criterion is 9.0 mg/l;~~

~~(ii) Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 11.0 mg/l or 9.0 mg/l criteria, dissolved oxygen levels shall not be less than 95 percent of saturation.~~

~~(B) For waterbodies identified by the Department as providing salmonid spawning during the period from spawning until fry emergence from the gravels, the spatial median intergravel dissolved oxygen concentration shall not fall below 6.0 mg/l;~~

~~(C) A spatial median of 8.0 mg/l intergravel dissolved oxygen level shall be used to identify areas where the recognized beneficial use of salmonid spawning, egg incubation and fry emergence from the egg and from the gravels may be impaired and therefore require action by the Department. Upon determination that the spatial median intergravel dissolved oxygen concentration is below 8.0 mg/l, the Department may, in accordance with priorities established by the Department for evaluating water quality impaired waterbodies, determine whether to list the waterbody as water quality limited under the Section 303(d) of the Clean Water Act, initiate pollution control strategies as warranted, and where needed cooperate with appropriate designated management agencies to evaluate and implement necessary best management practices for nonpoint source pollution control;~~

~~(D) For waterbodies identified by the Department as providing cold water aquatic life, the dissolved oxygen shall not be less than 8.0 mg/l as an absolute minimum. Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 8.0 mg/l, dissolved oxygen shall not be less than 90 percent of saturation. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 8.0 mg/l as a 30 day mean minimum, 6.5 mg/l as a seven day minimum mean, and shall not fall below 6.0 mg/l as an absolute minimum (**Table 21**);~~

~~(E) For waterbodies identified by the Department as providing cool water aquatic life, the dissolved oxygen shall not be less than 6.5 mg/l as an absolute minimum. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 6.5 mg/l as a 30 day mean minimum, 5.0 mg/l as a seven day minimum mean, and shall not fall below 4.0 mg/l as an absolute minimum (**Table 21**);~~

~~(F) For waterbodies identified by the Department as providing warm water aquatic life, the dissolved oxygen shall not be less than 5.5 mg/l as an absolute minimum. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 5.5 mg/l as a 30 day mean minimum, and shall not fall below 4.0 mg/l as an absolute minimum (**Table 21**);~~

~~(b) Temperature: The changes adopted by the Commission on January 11, 1996, become effective July 1, 1996. Until that time, the requirements of this rule that were in effect on January 10, 1996, apply. The method for measuring the numeric temperature criteria specified in this rule is defined in OAR 340-041-0006(54):~~

~~(A) To accomplish the goals identified in OAR 340-041-0120(11), unless specifically allowed under a Department-approved surface water temperature management plan as required under OAR 340-041-0026(3)(a)(D), no measurable surface water temperature increase resulting from anthropogenic activities is allowed:~~

~~(i) In a basin for which salmonid fish rearing is a designated beneficial use, and in which surface water temperatures exceed 64.0°F (17.8°C);~~

~~(ii) In the Columbia River or its associated sloughs and channels from the mouth to river mile 309 when surface water temperatures exceed 68.0°F (20.0°C);~~

~~(iii) In waters and periods of the year determined by the Department to support native salmonid spawning, egg incubation, and fry emergence from the egg and from the gravels in a basin which exceeds 55.0°F (12.8°C);~~

~~(iv) In waters determined by the Department to support or to be necessary to maintain the viability of native Oregon bull trout, when surface water temperatures exceed 50.0°F (10.0°C);~~

~~(v) In waters determined by the Department to be ecologically significant cold water refugia;~~

~~(vi) In stream segments containing federally listed Threatened and Endangered species if the increase would impair the biological integrity of the Threatened and Endangered population;~~

~~(vii) In Oregon waters when the dissolved oxygen (DO) levels are within 0.5 mg/l or 10 percent saturation of the water column or intergravel DO criterion for a given stream reach or subbasin;~~

~~(viii) In natural lakes.~~

~~(B) An exceedance of the numeric criteria identified in subparagraphs (A)(i) through (iv) of this subsection will not be deemed a temperature standard violation if it occurs when the air temperature during the warmest seven-day period of the year exceeds the 90th percentile of the seven-day average daily maximum air temperature calculated in a yearly series over the historic record. However, during such periods, the anthropogenic sources must still continue to comply with their surface water temperature management plans developed under OAR 340-041-0026(3)(a)(D);~~

(C) Any source may petition the Commission for an exception to subparagraphs (A)(i) through (viii) of this subsection for discharge above the identified criteria if:

(i) The source provides the necessary scientific information to describe how the designated beneficial uses would not be adversely impacted; or

(ii) A source is implementing all reasonable management practices or measures; its activity will not significantly affect the beneficial uses; and the environmental cost of treating the parameter to the level necessary to assure full protection would outweigh the risk to the resource.

(c) Turbidity (Nephelometric Turbidity Units, NTU): No more than a ten percent cumulative increase in natural stream turbidities shall be allowed, as measured relative to a control point immediately upstream of the turbidity causing activity. However, limited duration activities necessary to address an emergency or to accommodate essential dredging, construction or other legitimate activities and which cause the standard to be exceeded may be authorized provided all practicable turbidity control techniques have been applied and one of the following has been granted:

(A) Emergency activities: Approval coordinated by DEQ with the Department of Fish and Wildlife under conditions they may prescribe to accommodate response to emergencies or to protect public health and welfare;

(B) Dredging, Construction or other Legitimate activities: Permit or certification authorized under terms of Section 401 or 404 (Permits and Licenses, Federal Water Pollution Control Act) or OAR 141-085-0100 et seq. (Removal and Fill Permits, Division of State Lands), with limitations and conditions governing the activity set forth in the permit or certificate.

(d) pH (hydrogen ion concentration): pH values shall not fall outside the ranges identified in paragraphs (A), (B), and (C) of this subsection. The following exception applies: Waters impounded by dams existing on January 1, 1996, which have pHs that exceed the criteria shall not be considered in violation of the standard if the Department determines that the exceedance would not occur without the impoundment and that all practicable measures have been taken to bring the pH in the impounded waters into compliance with the criteria:

(A) Mainstem Columbia River (river miles 147 to 203): pH values shall not fall outside the range of 7.0 to 8.5;

(B) Other Hood River Basin streams (except Cascade lakes): pH values shall not fall outside the range of 6.5 to 8.5;

(C) Cascade lakes above 3,000 feet altitude: pH values shall not fall outside the range of 6.0 to 8.5.

~~(e) Bacteria standards:~~

~~(A) Numeric Criteria: Organisms of the coliform group commonly associated with fecal sources (MPN or equivalent membrane filtration using a representative number of samples) shall not exceed the criteria described in subparagraphs (i) and (ii) of this paragraph. Freshwaters:~~

~~(i) A 30-day log mean of 126 *E. coli* organisms per 100 ml, based on a minimum of five (5) samples;~~

~~(ii) No single sample shall exceed 406 *E. coli* organisms per 100 ml.~~

~~(B) Raw Sewage Prohibition: No sewage shall be discharged into or in any other manner be allowed to enter the waters of the State unless such sewage has been treated in a manner approved by the Department or otherwise allowed by these rules;~~

~~(C) Animal Waste: Runoff contaminated with domesticated animal wastes shall be minimized and treated to the maximum extent practicable before it is allowed to enter waters of the State;~~

~~(D) Effluent Limitations and Water Quality Limited Waterbodies: Effluent limitations to implement the criteria in this rule are found in OAR 340-041-0120(12) through (16). Implementation of the criteria in this rule in water quality limited waterbodies is described in OAR 340-041-0026(3)(a)(I) and OAR 340-041-0120(17).~~

~~(f) Bacterial pollution or other conditions deleterious to waters used for domestic purposes, livestock watering, irrigation, bathing, or shellfish propogation, or otherwise injurious to public health shall not be allowed;~~

~~(g) The liberation of dissolved gases, such as carbon dioxide hydrogen sulfide, or other gases, in sufficient quantities to cause objectionable odors or to be deleterious to fish or other aquatic life, navigation, recreation, or other reasonable uses made of such water shall not be allowed;~~

~~(h) The development of fungi or other growths having a deleterious effect on stream bottoms, fish or other aquatic life, or which are injurious to health, recreation, or industry shall not be allowed;~~

~~(i) The creation of tastes or odors or toxic or other conditions that are deleterious to fish or other aquatic life or affect the potability of drinking water or the palatability of fish or shellfish shall not be allowed;~~

~~(j) The formation of appreciable bottom or sludge deposits or the formation of any organic or inorganic deposits deleterious to fish or other aquatic life or injurious to public health, recreation, or industry shall not be allowed;~~

~~(k) Objectionable discoloration, scum, oily sleek or floating solids, or coating of aquatic life with oil films shall not be allowed;~~

~~(l) Aesthetic conditions offensive to the human senses of sight, taste, smell, or touch shall not be allowed;~~

~~(m) Radioisotope concentrations shall not exceed maximum permissible concentrations (MPC's) in drinking water, edible fishes or shellfishes, wildlife, irrigated crops, livestock and dairy products, or pose an external radiation hazard;~~

~~(n)(A) The concentration of total dissolved gas relative to atmospheric pressure at the point of sample collection shall not exceed 110 percent of saturation, except when stream flow exceeds the ten-year, seven-day average flood. However, for Hatchery receiving waters and waters of less than two feet in depth, the concentration of total dissolved gas relative to atmospheric pressure at the point of sample collection shall not exceed 105 percent of saturation;~~

~~(B) The Commission may modify the total dissolved gas criteria in the Columbia River for the purpose of allowing increased spill for salmonid migration. The Commission must find that:~~

~~(i) Failure to act would result in greater harm to salmonid stock survival through in-river migration than would occur by increased spill;~~

~~(ii) The modified total dissolved gas criteria associated with the increased spill provides a reasonable balance of the risk of impairment due to elevated total dissolved gas to both resident biological communities and other migrating fish and to migrating adult and juvenile salmonids when compared to other options for in-river migration of salmon;~~

~~(iii) Adequate data will exist to determine compliance with the standards; and~~

~~(iv) Biological monitoring is occurring to document that the migratory salmonid and resident biological communities are being protected.~~

~~(C) The Commission will give public notice and notify all known interested parties and will make provision for opportunity to be heard and comment on the evidence presented by others, except that the Director may modify the total dissolved gas criteria for emergencies for a period not exceeding 48 hours;~~

~~(D) The Commission may, at its discretion, consider alternative modes of migration.~~

~~(o) Total Dissolved Solids: Guide concentrations listed below shall not be exceeded unless otherwise specifically authorized by DEQ upon such conditions as it may deem necessary to carry out the general intent of this plan and to protect the beneficial uses set forth in OAR 340-041-0522: 500.0 mg/l;~~

~~(p) Toxic Substances:~~

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

~~(B) Levels of toxic substances shall not exceed the criteria listed in **Table 20** which were based on criteria established by EPA and published in **Quality Criteria for Water (1986)**, unless otherwise noted;~~

~~(C) The criteria in paragraph (B) of this subsection shall apply unless data from scientifically valid studies demonstrate that the most sensitive designated beneficial uses will not be adversely affected by exceeding a criterion or that a more restrictive criterion is warranted to protect beneficial uses, as accepted by the Department on a site specific basis. Where no published EPA criteria exist for a toxic substance, public health advisories and other published scientific literature may be considered and used, if appropriate, to set guidance values;~~

~~(D) Bio-assessment studies such as laboratory bioassays or instream measurements of indigenous biological communities, shall be conducted, as the Department deems necessary, to monitor the toxicity of complex effluents, other suspected discharges or chemical substances without numeric criteria, to aquatic life. These studies, properly conducted in accordance with standard testing procedures, may be considered as scientifically valid data for the purposes of paragraph (C) of this subsection. If toxicity occurs, the Department shall evaluate and implement measures necessary to reduce toxicity on a case-by-case basis.~~

~~(3) Where the naturally occurring quality parameters of waters of the Hood River Basin are outside the numerical limits of the above assigned water quality standards, the naturally occurring water quality shall be the standard. However, in such cases special restrictions, described in OAR 340-041-0026(3)(a)(C)(iii), apply to discharges that affect dissolved oxygen.~~

~~(4) Mixing zones:~~

~~(a) The Department may allow a designated portion of a receiving water to serve as a zone of dilution for wastewaters and receiving waters to mix thoroughly and this zone will be defined as a mixing zone;~~

~~(b) The Department may suspend all or part of the water quality standards, or set less restrictive standards, in the defined mixing zone, provided that the following conditions are met:~~

~~(A) The water within the mixing zone shall be free of:~~

~~(i) Materials in concentrations that will cause acute toxicity to aquatic life as measured by a Department approved bioassay method. Acute toxicity is lethality to aquatic life as measured by a significant difference in lethal concentration between the control and 100 percent effluent in an acute bioassay test. Lethality in 100 percent effluent may be allowed due to ammonia and chlorine only when it is demonstrated on a case-by-case basis that immediate dilution of the effluent within the mixing zone reduces toxicity below lethal concentrations. The Department may on a case-by-case basis establish a zone of immediate dilution if appropriate for other parameters;~~

~~(ii) Materials that will settle to form objectionable deposits;~~

~~(iii) Floating debris, oil, scum, or other materials that cause nuisance conditions;~~

~~(iv) Substances in concentrations that produce deleterious amounts of fungal or bacterial growths.~~

~~(B) The water outside the boundary of the mixing zone shall:~~

~~(i) Be free of materials in concentrations that will cause chronic (sublethal) toxicity. Chronic toxicity is measured as the concentration that causes long-term sublethal effects, such as significantly impaired growth or reproduction in aquatic organisms, during a testing period based on test species life cycle. Procedures and end points will be specified by the Department in wastewater discharge permits;~~

~~(ii) Meet all other water quality standards under normal annual low flow conditions.~~

~~(c) The limits of the mixing zone shall be described in the wastewater discharge permit. In determining the location, surface area, and volume of a mixing zone area, the Department may use appropriate mixing zone guidelines to assess the biological, physical, and chemical character of receiving waters, and effluent, and the most appropriate placement of the outfall, to protect instream water quality, public health, and other beneficial uses. Based on receiving water and effluent characteristics, the Department shall define a mixing zone in the immediate area of a wastewater discharge to:~~

~~(A) Be as small as feasible;~~

~~(B) Avoid overlap with any other mixing zones to the extent possible and be less than the total stream width as necessary to allow passage of fish and other aquatic organisms;~~

~~(C) Minimize adverse effects on the indigenous biological community especially when species are present that warrant special protection for their economic importance, tribal significance, ecological uniqueness, or for other similar reasons as determined by the Department and does not block the free passage of aquatic life;~~

~~(D) Not threaten public health;~~

(E) Minimize adverse effects on other designated beneficial uses outside the mixing zone.

(d) The Department may request the applicant of a permitted discharge for which a mixing zone is required, to submit all information necessary to define a mixing zone, such as:

(A) Type of operation to be conducted;

(B) Characteristics of effluent flow rates and composition;

(C) Characteristics of low flows of receiving waters;

(D) Description of potential environmental effects;

(E) Proposed design for outfall structures.

(e) The Department may, as necessary, require mixing zone monitoring studies and/or bioassays to be conducted to evaluate water quality or biological status within and outside the mixing zone boundary;

(f) The Department may change mixing zone limits or require the relocation of an outfall if it determines that the water quality within the mixing zone adversely affects any existing beneficial uses in the receiving waters.

(g) **Alternate requirements for mixing zones**: For some existing or proposed discharges to some receiving streams, it may not be practicable to treat wastewater to meet instream water quality standards at the point of discharge or within a short distance from the point of discharge. Some of these discharges could be allowed without impairing the overall ecological integrity of the receiving streams, or may provide an overall benefit to the receiving stream. This section specifies the conditions and circumstances under which a mixing zone may be allowed by the Department that extends beyond the immediate area around a discharge point, or that extends across a stream width. An alternate mixing zone may be approved if the applicant demonstrates to the Department's satisfaction that the discharge (A) creates an overall environmental benefit, or (B) is to a constructed water course, or (C) is insignificant. The three circumstances under which alternate mixing zones may be established are described further below.

(A) **Overall environmental benefit**.

(i) Qualifying for alternate mixing zone based on overall environmental benefit: In order to qualify for an alternate mixing zone based on a finding of overall environmental benefit, the discharger must demonstrate to the Department's satisfaction the following:

(I) That all practical strategies have been or will be implemented to minimize the pollutant loads in the effluent; and

~~(II) For proposed increased discharges, the current actual discharge and mixing zone does not meet the requirements of a standard mixing zone; and~~

~~(III) Either that, on balance, an environmental benefit would be lost if the discharge did not occur, or that the discharger is prepared to undertake other actions that will mitigate the effect of the discharge to an extent resulting in a net environmental benefit to the receiving stream.~~

~~(IV) For the purposes of this rule, the term "practical" shall include environmental impact, availability of alternatives, cost of alternatives, and other relevant factors.~~

~~(ii) Studies required and evaluation of studies: In order to demonstrate that, on balance, an environmental benefit will result from the discharge, the following information shall be provided by the applicant:~~

~~(I) The effluent flow and pollutant loads that are detected or expected in the effluent, by month, both average and expected worst case discharges. The parameters to be evaluated include at a minimum temperature, biochemical oxygen demand, total suspended solids, total dissolved solids, pH, settleable solids, e. coli bacteria, oil and grease, any pollutants listed in Table 20 of this rule division, and any pollutant for which the receiving stream has been designated by the Department as water quality limited; and~~

~~(II) Receiving stream flow, by month; and~~

~~(III) The expected impact of the discharge, by month, on the receiving stream for the entire proposed mixing zone area for all of the pollutants listed above. Included in this analysis shall be a comparison of the receiving stream water quality with the discharge and without the discharge; and~~

~~(IV) A description of fish, other vertebrate populations, and macroinvertebrates that reside in or are likely to pass through the proposed mixing zone, including expected location (if known), species identification, stage of development, and time of year when their presence is expected. For existing discharges, the applicant shall provide the same information for similar nearby streams that are unaffected by wastewater discharges. In addition, any threatened or endangered species in the immediate vicinity of the receiving stream shall be identified; and~~

~~(V) The expected impact of the discharge on aquatic organisms and/or fish passage, including any expected negative impacts from the effluent attracting fish where that is not desirable; and~~

~~(VI) A description of the expected environmental benefits to be derived from the discharge or other mitigation measures proposed by the applicant, including but not limited to improvements in water quality, improvements in fish passage, and improvements in aquatic habitat. If the applicant proposes to undertake mitigation measures designed to provide environmental benefits (e.g., purchasing water or water~~

~~conservation rights to increase stream flows or establishing stream cover to decrease temperature), the applicant shall describe the mitigation measures in detail, including a description of the steps it will take to ensure that the benefits of the mitigation measures are attained and are not lost or diminished over time.~~

~~(VII) Some or all of the above study requirements may be waived by the Department, if the Department determines that the information is not needed. In the event that the Department does waive some or all of the above study requirements, the basis for waiving the requirements will be included in the permit evaluation report upon the next permit renewal or modification relating to the mixing zone.~~

~~(VIII) Upon request of the Department, the applicant shall conduct additional studies to further evaluate the impact of the discharge, which may include whole effluent toxicity testing, stream surveys for water quality, stream surveys for fish and other aquatic organisms, or other studies as specified by the Department.~~

~~(IX) In evaluating whether an existing or proposed increase in an existing discharge would result in a net environmental benefit, the applicant shall use the native biological community in a nearby, similar stream that is unaffected by wastewater discharges. The Department shall consider all information generated as required in this rule and other relevant information. The evaluation shall consider benefits to the native aquatic biological community only.~~

~~(iii) Permit conditions: Upon determination by the Department that the discharge and mitigation measures (if any) will likely result in an overall environmental benefit, the Department shall include appropriate permit conditions to insure that the environmental benefits are attained and continue. Such permit conditions may include but not be limited to:~~

~~(I) Maximum allowed effluent flows and pollutant loads;~~

~~(II) Requirements to maintain land ownership, easements, contracts, or other legally binding measures necessary to assure that mitigation measures, if any, remain in place and effective;~~

~~(III) Special operating conditions;~~

~~(IV) Monitoring and reporting requirements; and~~

~~(V) Studies to evaluate the effectiveness of mitigation measures.~~

~~(B) **Constructed water course**: A mixing zone may be extended through a constructed water course and into a natural water course. For the purposes of this rule, a constructed water course is one that was constructed for irrigation, site drainage, or wastewater conveyance, and has the following characteristics:~~

(i) Irrigation flows, stormwater runoff, or wastewater flows have replaced natural streamflow regimes; and

(ii) The channel form is greatly simplified in lengthwise and cross sectional profiles; and

(iii) Physical and biological characteristics that differ significantly from nearby natural streams; and

(iv) A much lower diversity of aquatic species than found in nearby natural streams; and

(v) If the constructed water course is an irrigation canal, then it must have effective fish screens in place to qualify as a constructed water course.

(C) **Insignificant discharges**: Insignificant discharges are those that either by volume, pollutant characteristics, and/or temporary nature are expected to have little if any impact on beneficial uses in the receiving stream, and for which the extensive evaluations required for discharges to smaller streams are not warranted. For the purposes of this rule, only filter backwash discharges and underground storage tank cleanups are considered insignificant discharges.

(D) **Other requirements for alternate mixing zones**: The following are additional requirements for dischargers requesting an alternate mixing zone:

(i) Most discharges that qualify for an alternate mixing zone will extend through the receiving stream until a larger stream is reached, where thorough mixing of the effluent can occur and where the edge of the allowed mixing zone will be located. The portion of the mixing zone in the larger stream must meet all of the requirements of the standard mixing zone, including not blocking aquatic life passage; and

(ii) An alternate mixing zone shall not be granted if a municipal drinking water intake is located within the proposed mixing zone, and the discharge has a significant adverse impact on the drinking water source; and

(iii) The discharge will not pose an unreasonable hazard to the environment or pose a significant health risk, considering the likely pathways of exposure; and

(iv) The discharge shall not be acutely toxic to organisms passing through the mixing zone; and

(v) An alternate mixing zone shall not be granted if the substances discharged may accumulate in the sediments or bioaccumulate in aquatic life or wildlife to levels that adversely affect public health, safety, or welfare; aquatic life; wildlife; or other designated beneficial uses; and

(vi) In the event that the receiving stream is water quality limited, the requirements for discharges to water quality limited streams supersede this rule.

(5) Testing methods: The analytical testing methods for determining compliance with the water quality standards contained in this rule shall be in accordance with the most recent edition of **Standard Methods for the Examination of Water and Waste Water published jointly by the American Public Health Association, American Water Works Association, and Water Pollution Control Federation**, unless the Department has published an applicable superseding method, in which case testing shall be in accordance with the superseding method; provided, however, that testing in accordance with an alternative method shall comply with this rule if the Department has published the method or has approved the method in writing.

[ED. NOTE: The Table(s) referenced in this rule is not printed in the OAR Compilation. Copies are available from the agency.]

[Publications: The publication(s) referred to or incorporated by reference in this rule are available from the office of the agency.]

Stat. Auth.: ORS 468.735, ORS 468B.035 & ORS 468B.048
Stats. Implemented: ORS 468B.048
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 1-1980, f. & ef. 1-9-80; DEQ 18-1987, f. & ef. 9-4-87; DEQ 14-1991, f. & cert. ef. 8-13-91; DEQ 17-1992, f. & cert. ef. 8-7-92 (and corrected 8-13-92); DEQ 6-1995, f. & cert. ef. 2-28-95; DEQ 21-1995(Temp), f. & cert. ef. 9-21-95; DEQ 5-1996, f. & cert. ef. 3-7-96; DEQ 22-1997, f. & cert. ef. 10-24-97

340-041-0535

Minimum Design Criteria for Treatment and Control of Wastes

Subject to the implementation program set forth in OAR 340-041-0120, prior to discharge of any wastes from any new or modified facility to any waters of the Hood River Basin, such wastes shall be treated and controlled in facilities designed in accordance with the following minimum criteria. (In designing treatment facilities, average conditions and a normal range of variability are generally used in establishing design criteria. A facility once completed and placed in operation should operate at or near the design limit most of the time but may operate below the design criteria limit at times due to variables which are unpredictable or uncontrollable. This is particularly true for biological treatment facilities. The actual operating limits are intended to be established by permit pursuant to ORS 468.740 and recognize that the actual performance level may at times be less than the design criteria).

(1) Sewage wastes:

(a) During periods of low stream flows (approximately May 1 to October 31):

(A) Columbia River main stem (river miles 147 to 203): Treatment resulting in monthly average effluent concentrations not to exceed 20 mg/l of BOD and 20 mg/l of suspended solids or equivalent control;

~~(B) Other Hood River Basin streams: Treatment resulting in monthly average effluent concentrations not to exceed 10 mg/l of BOD and 10 mg/l of suspended solids or equivalent control.~~

~~(b) During the period of high stream flows (approximately November 1 to April 30): A minimum of secondary treatment or equivalent control and unless otherwise specifically authorized by the Department, operation of all waste treatment and control facilities at maximum practicable efficiency and effectiveness so as to minimize waste discharges to public waters;~~

~~(c) Effluent BOD concentrations in mg/l, divided by the dilution factor (ratio of receiving stream flow to effluent flow) shall not exceed one unless otherwise approved by the EQC;~~

~~(d) Sewage wastes shall be disinfected, after treatment, equivalent to thorough mixing with sufficient chlorine to provide a residual of at least one part per million after 60 minutes of contact time unless otherwise specifically authorized by permit;~~

~~(e) Positive protection shall be provided to prevent bypassing raw or inadequately treated sewage to public waters unless otherwise approved by the Department where elimination of inflow and infiltration would be necessary but not presently practicable;~~

~~(f) More stringent waste treatment and control requirements may be imposed where special conditions may require.~~

~~(2) Industrial wastes:~~

~~(a) After maximum practicable inplant control, a minimum of secondary treatment or equivalent control (reduction of suspended solids and organic material where present in significant quantities, effective disinfection where bacterial organisms of public health significance are present, and control of toxic or other deleterious substances);~~

~~(b) Specific industrial waste treatment requirements shall be determined on an individual basis in accordance with the provisions of this plan, applicable federal requirements, and the following:~~

~~(A) The uses which are or may likely be made of the receiving stream;~~

~~(B) The size and nature of flow of the receiving stream;~~

~~(C) The quantity and quality of wastes to be treated; and~~

~~(D) The presence or absence of other sources of pollution on the same watershed.~~

(c) Where industrial, commercial, or agricultural effluents contain significant quantities of potentially toxic elements, treatment requirements shall be determined utilizing appropriate bioassays;

(d) Industrial cooling waters containing significant heat loads shall be subjected to offstream cooling or heat recovery prior to discharge to public waters;

(e) Positive protection shall be provided to prevent bypassing of raw or inadequately treated industrial wastes to any public waters;

(f) Facilities shall be provided to prevent and contain spills of potentially toxic or hazardous materials and a positive program for containment and cleanup of such spills should they occur shall be developed and maintained.

Stat. Auth.: ORS 468
Stats. Implemented: ORS 468B.030
Hist.: DEQ 128, f. & ef. 1-21-77

Deschutes Basin

340-041-0562

Beneficial Water Uses to be Protected

Water quality in the Deschutes River Basin (see **Figures 1** and **10**) shall be managed to protect the recognized beneficial uses as indicated in **Table 9**.

[ED. NOTE: The Figure(s) and Table referenced in this rule are not printed in the OAR Compilation. Copies are available from the agency.]

Stat. Auth.: ORS 468
Stats. Implemented: ORS 468B.048
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 9-1985, f. & ef. 8-6-85

340-041-0565

Water Quality Standards Not to be Exceeded (To be Adopted Pursuant to ORS 468.735 and Enforceable Pursuant to ORS 468.720, 468.990, and 468.992)

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

~~(2) No wastes shall be discharged and no activities shall be conducted which either alone or in combination with other wastes or activities will cause violation of the following standards in the waters of the Deschutes River Basin:~~

~~(a) Dissolved oxygen (DO): The changes adopted by the Commission on January 11, 1996, become effective July 1, 1996. Until that time, the requirements of this rule that were in effect on January 10, 1996, apply:~~

~~(A) For waterbodies identified by the Department as providing salmonid spawning, during the periods from spawning until fry emergence from the gravels, the following criteria apply:~~

~~(i) The dissolved oxygen shall not be less than 11.0 mg/l. However, if the minimum intergravel dissolved oxygen, measured as a spatial median, is 8.0 mg/l or greater, then the DO criterion is 9.0 mg/l;~~

~~(ii) Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 11.0 mg/l or 9.0 mg/l criteria, dissolved oxygen levels shall not be less than 95 percent of saturation.~~

~~(B) For waterbodies identified by the Department as providing salmonid spawning during the period from spawning until fry emergence from the gravels, the spatial median intergravel dissolved oxygen concentration shall not fall below 6.0 mg/l;~~

~~(C) A spatial median of 8.0 mg/l intergravel dissolved oxygen level shall be used to identify areas where the recognized beneficial use of salmonid spawning, egg incubation and fry emergence from the egg and from the gravels may be impaired and therefore require action by the Department. Upon determi nation that the spatial median intergravel dissolved oxygen concentration is below 8.0 mg/l, the Department may, in accordance with priorities established by the Department for evaluating water quality impaired waterbodies, determine whether to list the waterbody as water quality limited under the Section 303(d) of the Clean Water Act, initiate pollution control strategies as warranted, and where needed cooperate with appropriate designated management agencies to evaluate and implement necessary best management practices for nonpoint source pollution control;~~

~~(D) For waterbodies identified by the Department as providing cold water aquatic life, the dissolved oxygen shall not be less than 8.0 mg/l as an absolute minimum. Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 8.0 mg/l, dissolved oxygen shall not be less than 90 percent of saturation. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 8.0 mg/l as a 30 day mean minimum, 6.5 mg/l as a seven day minimum mean, and shall not fall below 6.0 mg/l as an absolute minimum **(Table 21)**;~~

(E) For waterbodies identified by the Department as providing cool-water aquatic life, the dissolved oxygen shall not be less than 6.5 mg/l as an absolute minimum. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 6.5 mg/l as a 30-day mean minimum, 5.0 mg/l as a seven-day minimum mean, and shall not fall below 4.0 mg/l as an absolute minimum (**Table 21**);

(F) For waterbodies identified by the Department as providing warm-water aquatic life, the dissolved oxygen shall not be less than 5.5 mg/l as an absolute minimum. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 5.5 mg/l as a 30-day mean minimum, and shall not fall below 4.0 mg/l as an absolute minimum (**Table 21**);

(b) Temperature: The changes adopted by the Commission on January 11, 1996, become effective July 1, 1996. Until that time, the requirements of this rule that were in effect on January 10, 1996, apply. The method for measuring the numeric temperature criteria specified in this rule is defined in OAR 340-041-0006(54):

(A) To accomplish the goals identified in OAR 340-041-0120(11), unless specifically allowed under a Department-approved surface water temperature management plan as required under OAR 340-041-0026(3)(a)(D), no measurable surface water temperature increase resulting from anthropogenic activities is allowed:

(i) In a basin for which salmonid fish rearing is a designated beneficial use, and in which surface water temperatures exceed 64.0°F (17.8°C);

(ii) In the Columbia River or its associated sloughs and channels from the mouth to river mile 309 when surface water temperatures exceed 68.0°F (20.0°C);

(iii) In waters and periods of the year determined by the Department to support native salmonid spawning, egg incubation, and fry emergence from the egg and from the gravels in a basin which exceeds 55.0°F (12.8°C);

(iv) In waters determined by the Department to support or to be necessary to maintain the viability of native Oregon bull trout, when surface water temperatures exceed 50.0°F (10.0°C);

(v) In waters determined by the Department to be ecologically significant cold water refugia;

(vi) In stream segments containing federally listed Threatened and Endangered species if the increase would impair the biological integrity of the Threatened and Endangered population;

~~(vii) In Oregon waters when the dissolved oxygen (DO) levels are within 0.5 mg/l or 10 percent saturation of the water column or intergravel DO criterion for a given stream reach or subbasin;~~

~~(viii) In natural lakes.~~

~~(B) An exceedance of the numeric criteria identified in subparagraphs (A)(i) through (iv) of this subsection will not be deemed a temperature standard violation if it occurs when the air temperature during the warmest seven-day period of the year exceeds the 90th percentile of the seven-day average daily maximum air temperature calculated in a yearly series over the historic record. However, during such periods, the anthropogenic sources must still continue to comply with their surface water temperature management plans developed under OAR 340-041-0026(3)(a)(D);~~

~~(C) Any source may petition the Commission for an exception to subparagraphs (A)(i) through (viii) of this subsection for discharge above the identified criteria if:~~

~~(i) The source provides the necessary scientific information to describe how the designated beneficial uses would not be adversely impacted; or~~

~~(ii) A source is implementing all reasonable management practices or measures; its activity will not significantly affect the beneficial uses; and the environmental cost of treating the parameter to the level necessary to assure full protection would outweigh the risk to the resource.~~

~~(c) Turbidity (Nephelometric Turbidity Units, NTU): No more than a ten percent cumulative increase in natural stream turbidities shall be allowed, as measured relative to a control point immediately upstream of the turbidity causing activity. However, limited duration activities necessary to address an emergency or to accommodate essential dredging, construction or other legitimate activities and which cause the standard to be exceeded may be authorized provided all practicable turbidity control techniques have been applied and one of the following has been granted:~~

~~(A) Emergency activities: Approval coordinated by DEQ with the Department of Fish and Wildlife under conditions they may prescribe to accommodate response to emergencies or to protect public health and welfare;~~

~~(B) Dredging, Construction or other Legitimate Activities: Permit or certification authorized under terms of Section 401 or 404 (Permits and Licenses, Federal Water Pollution Control Act) or OAR 141-085-0100 et. seq. (Removal and Fill Permits, Division of State Lands), with limitations and conditions governing the activity set forth in the permit or certificate.~~

~~(d) pH (hydrogen ion concentration): pH values shall not fall outside the ranges identified in paragraphs (A), (B), and (C) of this subsection. The following exception applies: Waters impounded by dams existing on January 1, 1996, which have pHs that exceed the~~

~~criteria shall not be considered in violation of the standard if the Department determines that the exceedance would not occur without the impoundment and that all practicable measures have been taken to bring the pH in the impounded waters into compliance with the criteria:~~

~~(A) Columbia River (river miles 203 to 218): 7.0 – 8.5;~~

~~(B) All other Basin streams (except Cascade lakes): 6.5—8.5;~~

~~(C) Cascade lakes above 3,000 feet altitude: pH values shall not fall outside the range of 6.0 to 8.5.~~

~~(e) Bacteria standards:~~

~~(A) Numeric Criteria: Organisms of the coliform group commonly associated with fecal sources (MPN or equivalent membrane filtration using a representative number of samples) shall not exceed the criteria described in subparagraphs (i) and (ii) of this paragraph. Freshwaters:~~

~~(i) A 30-day log mean of 126 *E. coli* organisms per 100 ml, based on a minimum of five (5) samples;~~

~~(ii) No single sample shall exceed 406 *E. coli* organisms per 100 ml.~~

~~(B) Raw Sewage Prohibition: No sewage shall be discharged into or in any other manner be allowed to enter the waters of the State unless such sewage has been treated in a manner approved by the Department or otherwise allowed by these rules;~~

~~(C) Animal Waste: Runoff contaminated with domesticated animal wastes shall be minimized and treated to the maximum extent practicable before it is allowed to enter waters of the State;~~

~~(D) Effluent Limitations and Water Quality Limited Waterbodies: Effluent limitations to implement the criteria in this rule are found in OAR 340-041-0120(12) through (16). Implementation of the criteria in this rule in water quality limited waterbodies is described in OAR 340-041-0026(3)(a)(I) and OAR 340-041-0120(17).~~

~~(f) Bacterial pollution or other conditions deleterious to waters used for domestic purposes, livestock watering, irrigation, bathing, or shellfish propagation, or otherwise injurious to public health shall not be allowed;~~

~~(g) The liberation of dissolved gases, such as carbon dioxide, hydrogen sulfide, or other gases, in sufficient quantities to cause objectionable odors or to be deleterious to fish or other aquatic life, navigation, recreation, or other reasonable uses made of such waters shall not be allowed;~~

~~(h) The development of fungi or other growths having a deleterious effect on stream bottoms, fish or other aquatic life, or which are injurious to health, recreation, or industry shall not be allowed;~~

~~(i) The creation of tastes or odors or toxic or other conditions that are deleterious to fish or other aquatic life or affect the potability of drinking water or the palatability of fish or shellfish shall not be allowed;~~

~~(j) The formation of appreciable bottom or sludge deposits or the formation of any organic or inorganic deposits deleterious to fish or other aquatic life or injurious to public health, recreation, or industry shall not be allowed;~~

~~(k) Objectionable discoloration, scum, oily sleek or floating solids, or coating of aquatic life with oil films shall not be allowed;~~

~~(l) Aesthetic conditions offensive to the human senses of sight, taste, smell, or touch shall not be allowed;~~

~~(m) Radioisotope concentrations shall not exceed maximum permissible concentrations (MPC's) in drinking water, edible fishes or shellfishes, wildlife, irrigated crops, livestock and dairy products, or pose an external radiation hazard;~~

~~(n)(A) The concentration of total dissolved gas relative to atmospheric pressure at the point of sample collection shall not exceed 110 percent of saturation, except when stream flow exceeds the ten-year, seven-day average flood. However, for Hatchery receiving waters and waters of less than two feet in depth, the concentration of total dissolved gas relative to atmospheric pressure at the point of sample collection shall not exceed 105 percent of saturation;~~

~~(B) The Commission may modify the total dissolved gas criteria in the Columbia River for the purpose of allowing increased spill for salmonid migration. The Commission must find that:~~

~~(i) Failure to act would result in greater harm to salmonid stock survival through in-river migration than would occur by increased spill;~~

~~(ii) The modified total dissolved gas criteria associated with the increased spill provides a reasonable balance of the risk of impairment due to elevated total dissolved gas to both resident biological communities and other migrating fish and to migrating adult and juvenile salmonids when compared to other options for in-river migration of salmon;~~

~~(iii) Adequate data will exist to determine compliance with the standards; and~~

~~(iv) Biological monitoring is occurring to document that the migratory salmonid and resident biological communities are being protected.~~

~~(C) The Commission will give public notice and notify all known interested parties and will make provision for opportunity to be heard and comment on the evidence presented by others, except that the Director may modify the total dissolved gas criteria for emergencies for a period not exceeding 48 hours;~~

~~(D) The Commission may, at its discretion, consider alternative modes of migration.~~

~~(o) Total Dissolved Solids: Guide concentrations listed below shall not be exceeded unless otherwise specifically authorized by DEQ upon such conditions as it may deem necessary to carry out the general intent of this plan and to protect the beneficial uses set forth in OAR 340-041-0562: 500.0 mg/l;~~

~~(p) Toxic Substances:~~

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

~~(B) Levels of toxic substances shall not exceed the criteria listed in **Table 20** which were based on criteria established by EPA and published in **Quality Criteria for Water (1986)**, unless otherwise noted;~~

~~(C) The criteria in paragraph (B) of this subsection shall apply unless data from scientifically valid studies demonstrate that the most sensitive designated beneficial uses will not be adversely affected by exceeding a criterion or that a more restrictive criterion is warranted to protect beneficial uses, as accepted by the Department on a site specific basis. Where no published EPA criteria exist for a toxic substance, public health advisories and other published scientific literature may be considered and used, if appropriate, to set guidance values;~~

~~(D) Bio-assessment studies such as laboratory bioassays or instream measurements of indigenous biological communities, shall be conducted, as the Department deems necessary, to monitor the toxicity of complex effluents, other suspected discharges or chemical substances without numeric criteria, to aquatic life. These studies, properly conducted in accordance with standard testing procedures, may be considered as scientifically valid data for the purposes of paragraph (C) of this subsection. If toxicity occurs, the Department shall evaluate and implement measures necessary to reduce toxicity on a case-by-case basis.~~

~~(3) Where the naturally occurring quality parameters of waters of the Deschutes Basin are outside the numerical limits of the above assigned water quality standards, the naturally occurring water quality shall be the standard. However, in such cases special restrictions, described in OAR 340-041-0026(3)(a)(C)(iii), apply to discharges that affect dissolved oxygen.~~

~~(4) Mixing zones:~~

~~(a) The Department may allow a designated portion of a receiving water to serve as a zone of dilution for wastewaters and receiving waters to mix thoroughly and this zone will be defined as a mixing zone;~~

~~(b) The Department may suspend all or part of the water quality standards, or set less restrictive standards, in the defined mixing zone, provided that the following conditions are met:~~

~~(A) The water within the mixing zone shall be free of:~~

~~(i) Materials in concentrations that will cause acute toxicity to aquatic life as measured by a Department approved bioassay method. Acute toxicity is lethality to aquatic life as measured by a significant difference in lethal concentration between the control and 100 percent effluent in an acute bioassay test. Lethality in 100 percent effluent may be allowed due to ammonia and chlorine only when it is demonstrated on a case-by-case basis that immediate dilution of the effluent within the mixing zone reduces toxicity below lethal concentrations. The Department may on a case-by-case basis establish a zone of immediate dilution if appropriate for other parameters;~~

~~(ii) Materials that will settle to form objectionable deposits;~~

~~(iii) Floating debris, oil, scum, or other materials that cause nuisance conditions;~~

~~(iv) Substances in concentrations that produce deleterious amounts of fungal or bacterial growths.~~

~~(B) The water outside the boundary of the mixing zone shall:~~

~~(i) Be free of materials in concentrations that will cause chronic (sublethal) toxicity. Chronic toxicity is measured as the concentration that causes long-term sublethal effects, such as significantly impaired growth or reproduction in aquatic organisms, during a testing period based on test species life cycle. Procedures and end points will be specified by the Department in wastewater discharge permits;~~

~~(ii) Meet all other water quality standards under normal annual low flow conditions.~~

~~(c) The limits of the mixing zone shall be described in the wastewater discharge permit. In determining the location, surface area, and volume of a mixing zone area, the Department may use appropriate mixing zone guidelines to assess the biological, physical, and chemical character of receiving waters, and effluent, and the most appropriate placement of the outfall, to protect instream water quality, public health, and other beneficial uses. Based on receiving water and effluent characteristics, the Department shall define a mixing zone in the immediate area of a wastewater discharge to:~~

(A) Be as small as feasible;

(B) Avoid overlap with any other mixing zones to the extent possible and be less than the total stream width as necessary to allow passage of fish and other aquatic organisms;

(C) Minimize adverse effects on the indigenous biological community especially when species are present that warrant special protection for their economic importance, tribal significance, ecological uniqueness, or for other similar reasons as determined by the Department and does not block the free passage of aquatic life;

(D) Not threaten public health;

(E) Minimize adverse effects on other designated beneficial uses outside the mixing zone.

(d) The Department may request the applicant of a permitted discharge for which a mixing zone is required, to submit all information necessary to define a mixing zone, such as:

(A) Type of operation to be conducted;

(B) Characteristics of effluent flow rates and composition;

(C) Characteristics of low flows of receiving waters;

(D) Description of potential environmental effects;

(E) Proposed design for outfall structures.

(e) The Department may, as necessary, require mixing zone monitoring studies and/or bioassays to be conducted to evaluate water quality or biological status within and outside the mixing zone boundary;

(f) The Department may change mixing zone limits or require the relocation of an outfall if it determines that the water quality within the mixing zone adversely affects any existing beneficial uses in the receiving waters.

(g) **Alternate requirements for mixing zones**: For some existing or proposed discharges to some receiving streams, it may not be practicable to treat wastewater to meet instream water quality standards at the point of discharge or within a short distance from the point of discharge. Some of these discharges could be allowed without impairing the overall ecological integrity of the receiving streams, or may provide an overall benefit to the receiving stream. This section specifies the conditions and circumstances under which a mixing zone may be allowed by the Department that extends beyond the immediate area around a discharge point, or that extends across a stream width. An alternate mixing zone may be approved if the applicant demonstrates to the Department's satisfaction that the discharge (A) creates an overall environmental benefit, or (B) is to a constructed water

course, or (C) is insignificant. The three circumstances under which alternate mixing zones may be established are described further below.

(A) **Overall environmental benefit.**

(i) Qualifying for alternate mixing zone based on overall environmental benefit: In order to qualify for an alternate mixing zone based on a finding of overall environmental benefit, the discharger must demonstrate to the Department's satisfaction the following:

(I) That all practical strategies have been or will be implemented to minimize the pollutant loads in the effluent; and

(II) For proposed increased discharges, the current actual discharge and mixing zone does not meet the requirements of a standard mixing zone; and

(III) Either that, on balance, an environmental benefit would be lost if the discharge did not occur, or that the discharger is prepared to undertake other actions that will mitigate the effect of the discharge to an extent resulting in a net environmental benefit to the receiving stream.

(IV) For the purposes of this rule, the term "practical" shall include environmental impact, availability of alternatives, cost of alternatives, and other relevant factors.

(ii) Studies required and evaluation of studies: In order to demonstrate that, on balance, an environmental benefit will result from the discharge, the following information shall be provided by the applicant:

(I) The effluent flow and pollutant loads that are detected or expected in the effluent, by month, both average and expected worst case discharges. The parameters to be evaluated include at a minimum temperature, biochemical oxygen demand, total suspended solids, total dissolved solids, pH, settleable solids, e. coli bacteria, oil and grease, any pollutants listed in Table 20 of this rule division, and any pollutant for which the receiving stream has been designated by the Department as water quality limited; and

(II) Receiving stream flow, by month; and

(III) The expected impact of the discharge, by month, on the receiving stream for the entire proposed mixing zone area for all of the pollutants listed above. Included in this analysis shall be a comparison of the receiving stream water quality with the discharge and without the discharge; and

(IV) A description of fish, other vertebrate populations, and macroinvertebrates that reside in or are likely to pass through the proposed mixing zone, including expected location (if known), species identification, stage of development, and time of year when their presence is expected. For existing discharges, the applicant shall provide the same information for similar nearby streams that are unaffected by wastewater discharges. In

addition, any threatened or endangered species in the immediate vicinity of the receiving stream shall be identified; and

(V) The expected impact of the discharge on aquatic organisms and/or fish passage, including any expected negative impacts from the effluent attracting fish where that is not desirable; and

(VI) A description of the expected environmental benefits to be derived from the discharge or other mitigation measures proposed by the applicant, including but not limited to improvements in water quality, improvements in fish passage, and improvements in aquatic habitat. If the applicant proposes to undertake mitigation measures designed to provide environmental benefits (e.g., purchasing water or water conservation rights to increase stream flows or establishing stream cover to decrease temperature), the applicant shall describe the mitigation measures in detail, including a description of the steps it will take to ensure that the benefits of the mitigation measures are attained and are not lost or diminished over time.

(VII) Some or all of the above study requirements may be waived by the Department, if the Department determines that the information is not needed. In the event that the Department does waive some or all of the above study requirements, the basis for waiving the requirements will be included in the permit evaluation report upon the next permit renewal or modification relating to the mixing zone.

(VIII) Upon request of the Department, the applicant shall conduct additional studies to further evaluate the impact of the discharge, which may include whole effluent toxicity testing, stream surveys for water quality, stream surveys for fish and other aquatic organisms, or other studies as specified by the Department.

(IX) In evaluating whether an existing or proposed increase in an existing discharge would result in a net environmental benefit, the applicant shall use the native biological community in a nearby, similar stream that is unaffected by wastewater discharges. The Department shall consider all information generated as required in this rule and other relevant information. The evaluation shall consider benefits to the native aquatic biological community only.

(iii) Permit conditions: Upon determination by the Department that the discharge and mitigation measures (if any) will likely result in an overall environmental benefit, the Department shall include appropriate permit conditions to insure that the environmental benefits are attained and continue. Such permit conditions may include but not be limited to:

(I) Maximum allowed effluent flows and pollutant loads;

(II) Requirements to maintain land ownership, easements, contracts, or other legally binding measures necessary to assure that mitigation measures, if any, remain in place and effective;

(III) Special operating conditions;

(IV) Monitoring and reporting requirements; and

(V) Studies to evaluate the effectiveness of mitigation measures.

(B) **Constructed water course**: A mixing zone may be extended through a constructed water course and into a natural water course. For the purposes of this rule, a constructed water course is one that was constructed for irrigation, site drainage, or wastewater conveyance, and has the following characteristics:

(i) Irrigation flows, stormwater runoff, or wastewater flows have replaced natural streamflow regimes; and

(ii) The channel form is greatly simplified in lengthwise and cross sectional profiles; and

(iii) Physical and biological characteristics that differ significantly from nearby natural streams; and

(iv) A much lower diversity of aquatic species than found in nearby natural streams; and

(v) If the constructed water course is an irrigation canal, then it must have effective fish screens in place to qualify as a constructed water course.

(C) **Insignificant discharges**: Insignificant discharges are those that either by volume, pollutant characteristics, and/or temporary nature are expected to have little if any impact on beneficial uses in the receiving stream, and for which the extensive evaluations required for discharges to smaller streams are not warranted. For the purposes of this rule, only filter backwash discharges and underground storage tank cleanups are considered insignificant discharges.

(D) **Other requirements for alternate mixing zones**: The following are additional requirements for dischargers requesting an alternate mixing zone:

(i) Most discharges that qualify for an alternate mixing zone will extend through the receiving stream until a larger stream is reached, where thorough mixing of the effluent can occur and where the edge of the allowed mixing zone will be located. The portion of the mixing zone in the larger stream must meet all of the requirements of the standard mixing zone, including not blocking aquatic life passage; and

(ii) An alternate mixing zone shall not be granted if a municipal drinking water intake is located within the proposed mixing zone, and the discharge has a significant adverse impact on the drinking water source; and

(iii) The discharge will not pose an unreasonable hazard to the environment or pose a significant health risk, considering the likely pathways of exposure; and

(iv) The discharge shall not be acutely toxic to organisms passing through the mixing zone; and

(v) An alternate mixing zone shall not be granted if the substances discharged may accumulate in the sediments or bioaccumulate in aquatic life or wildlife to levels that adversely affect public health, safety, or welfare; aquatic life; wildlife; or other designated beneficial uses; and

(vi) In the event that the receiving stream is water quality limited, the requirements for discharges to water quality limited streams supersede this rule.

(5) Testing methods: The analytical testing methods for determining compliance with the water quality standards contained in this rule shall be in accordance with the most recent edition of **Standard Methods for the Examination of Water and Waste Water published jointly by the American Public Health Association, American Water Works Association, and Water Pollution Control Federation**, unless the Department has published an applicable superseding method, in which case testing shall be in accordance with the superseding method; provided, however, that testing in accordance with an alternative method shall comply with this rule if the Department has published the method or has approved the method in writing.

[ED. NOTE: The Table(s) referenced in this rule is not printed in the OAR Compilation. Copies are available from the agency.]

[Publications: The publication(s) referred to or incorporated by reference in this rule are available from the office of the agency.]

Stat. Auth.: ORS 468.735, ORS 468B.035 & ORS 468B.048
Stats. Implemented: ORS 468B.048
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 1-1980, f. & ef. 1-9-80; DEQ 18-1987, f. & ef. 9-4-87; DEQ 14-1991, f. & cert. ef. 8-13-91; DEQ 17-1992, f. & cert. ef. 8-7-92 (and corrected 8-13-92); DEQ 6-1995, f. & cert. ef. 2-28-95; DEQ 21-1995(Temp), f. & cert. ef. 9-21-95; DEQ 5-1996, f. & cert. ef. 3-7-96; DEQ 22-1997, f. & cert. ef. 10-24-97

340-041-0575

Minimum Design Criteria for Treatment and Control of Wastes

Subject to the implementation program set forth in OAR 340-041-0120, prior to discharge of any wastes from any new or modified facility to any waters of the Deschutes River Basin, such wastes shall be treated and controlled in facilities designed in accordance with the following minimum criteria. (In designing treatment facilities, average conditions and a normal range of variability are generally used in establishing design criteria. A facility once completed and placed in operation should operate at or near the design limit most of the time but may operate below the design criteria limit at times due to variables which are unpredictable or uncontrollable. This is particularly true

~~for biological treatment facilities. The actual operating limits are intended to be established by permit pursuant to ORS 468.740 and recognize that the actual performance level may at times be less than the design criteria.)~~

~~(1) Sewage wastes:~~

~~(a) Metolius River Subbasin and Deschutes River Basin above Bend Diversion Dam (river mile 165): Treatment resulting in monthly average effluent concentrations not to exceed 5 mg/l of BOD and 5 mg/l of SS or equivalent control;~~

~~(b) Deschutes River from the Bend Diversion Dam (river mile 165) downstream to the Pelton Reregulating Dam (river mile 100) and for the Crooked River Subbasin:~~

~~(A) During periods of low stream flows (approximately April 1 to October 31): Treatment resulting in monthly average effluent concentrations not to exceed 10 mg/l of BOD and 10 mg/l of SS or equivalent control;~~

~~(B) During the period of high stream flows (approximately November 1 to March 31): A minimum of secondary treatment or equivalent and unless otherwise specifically authorized by the Department, operation of all waste treatment and control facilities at maximum practicable efficiency and effectiveness so as to minimize waste discharges to public waters.~~

~~(c) Deschutes from the Pelton Reregulating Dam (river mile 100) downstream to the mouth:~~

~~(A) During periods of low stream flows (approximately April 1 to October 31): Treatment resulting in monthly average effluent concentrations not to exceed 20 mg/l of BOD and 20 mg/l of SS or equivalent control;~~

~~(B) During the period of high stream flows (approximately November 1 to March 31): A minimum of secondary treatment or equivalent and unless otherwise specifically authorized by the Department, operation of all waste treatment and control facilities at maximum practicable efficiency and effectiveness so as to minimize waste discharges to public waters.~~

~~(d) Columbia River (river miles 203 to 218):~~

~~(A) From approximately May 1 to October 31: Treatment resulting in monthly average effluent concentrations not to exceed 20 mg/l of BOD and 20 mg/l of suspended solids or equivalent control;~~

~~(B) From approximately November 1 to April 30: A minimum of secondary treatment or equivalent control and unless otherwise specifically authorized by the Department, operation of all waste treatment and control facilities at maximum practicable efficiency and effectiveness so as to minimize waste discharges to public waters.~~

~~(e) Effluent BOD concentrations in mg/l, divided by the dilution factor (ratio of receiving stream flow to effluent flow) shall not exceed one unless otherwise approved by the EQC;~~

~~(f) Sewage wastes shall be disinfected, after treatment, equivalent to thorough mixing with sufficient chlorine to provide a residual of at least 1 part per million after 60 minutes of contact time unless otherwise specifically authorized by permit;~~

~~(g) Positive protection shall be provided to prevent bypassing raw or inadequately treated sewage to public waters unless otherwise approved by the Department where elimination of inflow and infiltration would be necessary but not presently practicable;~~

~~(h) More stringent waste treatment and control requirements may be imposed where special conditions may require.~~

~~(2) Industrial wastes:~~

~~(a) After maximum practicable inplant control, a minimum of secondary treatment or equivalent control (reduction of suspended solids and organic materials where present in significant quantities, effective disinfection where bacterial organisms of public health significance are present, and control of toxic or other deleterious substances);~~

~~(b) Specific industrial waste treatment requirements shall be determined on an individual basis in accordance with the provisions of this plan, applicable federal requirements, and the following:~~

~~(A) The uses which are or may likely be made of the receiving stream;~~

~~(B) The size and nature of flow of the receiving stream;~~

~~(C) The quantity and quality of wastes to be treated; and~~

~~(D) The presence or absence of other sources of pollution on the same watershed.~~

~~(c) Where industrial, commercial, or agricultural effluents contain significant quantities of potentially toxic elements, treatment requirements shall be determined utilizing appropriate bioassays;~~

~~(d) Industrial cooling waters containing significant heat loads shall be subjected to offstream cooling or heat recovery prior to discharge to public waters;~~

~~(e) Positive protection shall be provided to prevent bypassing or raw or inadequately treated industrial wastes to any public waters;~~

(f) Facilities shall be provided to prevent and contain spills of potentially toxic or hazardous materials and a positive program for containment and cleanup of such spills should they occur shall be developed and maintained.

Stat. Auth.: ORS 468
Stats. Implemented: ORS 468B.030
Hist.: DEQ 128, f. & ef. 1-21-77

340-041-0580

Special Policies and Guidelines

(1) In order to protect the shallow aquifer located in the vicinity of the community of LaPine in Deschutes County for present and future use as a drinking water source, it is the policy of the Environmental Quality Commission to support the implementation of the LaPine Aquifer Management Plan adopted by the Deschutes County Board of Commissioners on September 28, 1982, by requiring the following:

(a) The Environmental Quality Commission finds that existing on-site sewage disposal systems inside the core area of the community of LaPine are causing groundwater pollution. By January 1, 1987, the waste water generated within this core area shall be collected, treated and disposed according to the regional sewerage plan approved by the Department:

(A) The core area of the community of LaPine shall be that area defined as follows: Located in a portion of Sections 10, 11, 14, and 15, Township 22 South, Range 10 East, Willamette Meridian, Deschutes County, Oregon, more particularly described as follows: Beginning at the northwest corner of the intersection of U.S. Highway 97 and First Street (aka Reed Road); thence in a northeasterly direction along the westerly right-of-way line of said U.S. Highway 97 a distance of 1,480 feet, more or less, to the intersection of said U.S. Highway 97 and the northerly line of the south one-half of the southwest one-quarter of said Section 11; thence in a westerly direction along the northerly line of the south one-half of the southwest one-quarter of said Section 11 a distance of 1,950 feet, more or less, to the south one-sixteenth corner between said Sections 10 and 11; thence in a northerly direction along the section line between Sections 10 and 11, 990 feet, more or less, to the northeast corner of the south one-half of the north one-half of the northeast one-quarter of the southeast one-quarter of said Section 10 being the northeast corner of the Bend-LaPine School District property; thence in a westerly direction along the north line of the said south one-half of the north one-half of the northeast one-quarter of the southeast one-quarter, being the north line of the said Bend-LaPine School District property, 1,320 feet, more or less, to the northwest corner of the south one-half of the north one-half of the southeast one-quarter of the southeast one-quarter of said Section 10, said point further being the northwest corner of the Bend-LaPine School District property; thence in a southerly direction along the westerly line of the east one-half of the southeast one-quarter of said Section 10, 2, 310 feet, more or less, to a point at the intersection of the westerly line of the southeast one-quarter of the southeast one-quarter

of said Section 10 and the northerly right-of-way line of said First Street, said point further being the southwest corner of the Bend-LaPine School District property; thence in an easterly direction along the northerly right-of-way line of said First Street, 350 feet, more or less, to a point on the northerly right-of-way line of said First Street due north of the northwest corner of the alley in Block 16 of the Plat of LaPine Subdivision; thence in a southerly direction along the westerly side of said alley 550 feet, more or less, to a point along the southerly right-of-way of 2nd Street due south of the southwest corner of the alley in Block 16 of the Plat of LaPine Subdivision; thence in an easterly direction along the southerly right-of-way of 2nd Street, 390 feet, more or less, to the southwest corner of the intersection of Stillwell Street and 2nd Street; thence in a southerly direction along the westerly right-of-way line of said Stillwell Street, 950 feet, more or less, to the northwest corner of the intersection of said Stillwell Street and 4th Street; thence in a southerly direction along the west right-of-way line of Stillwell Street approximately 1,186 feet to the northwest corner of the intersection of Stillwell Street and Hill Street; thence in a southwesterly direction along the west right-of-way line of Hill Street approximately 340 feet to the intersection of the west line of Hill Street with the north line of 8th Street; thence westerly along the north line of 8th Street, 41 feet, more or less to the northeast corner of the intersection of 8th Street and Stearns Street; thence in a southerly direction along the east right-of-way line of Stearns Street approximately 387 feet to the northeast corner of the intersection of Stearns Street and 9th Street; thence in an easterly direction along the north right-of-way line of 9th Street and the easterly extension of the north line of said 9th Street, 1,093 feet to its intersection with the east right-of-way line of Pengra Huntington Road; thence in a northerly direction along the east right-of-way line of Pengra Huntington Road approximately 1,166 feet to the southwest corner of Lot 31, Government Homesite Tracts; thence in an easterly direction along the south boundary of said Lot 31 approximately 263 feet to the southeast corner of said Lot 31; thence in a northerly direction along the east boundary of said Lot 31 approximately 200 feet to the south right-of-way line of Finley Butte Road; thence in an easterly direction along the south right-of-way line of Finley Butte Road approximately 675 feet to the southeast corner of the intersection of Finley Butte Road and Bonnie Road; thence in a northerly direction along the east right-of-way line of Bonnie Road approximately 1,075 feet to the southeast corner of the intersection of Bonnie Road and William Foss Road; thence in an easterly direction along the southerly right-of-way line of said William Foss Road, 1,640 feet, more or less, to the north-south center section line of said Section 14 thence in a northerly direction along the north-south center line of said Section 14, 1,635 feet, more or less, to the north right-of-way line of said First Street (aka Reed Road); thence in a westerly direction along the north right-of-way line of said First Street, 1,432 feet, more or less, to the point of beginning;

(B) All dwellings and buildings that contain plumbing fixtures inside this core area boundary shall eliminate the discharge of inadequately treated sewage, abandon existing on-site sewage disposal systems and connect to the regional sewerage facility. This shall be done within 90 days following notification by the approved regional sewerage agency that sewer service is available.

(b) The waste water generated outside the core area of the community of LaPine but within the study area described in the LaPine Aquifer Management Plan, will be subjected to regulation under the Department's on-site waste disposal rules (OAR Chapter 340, Division 71);

(c) Waste disposal systems for new developments within the LaPine Aquifer Management Plan Boundary where development density exceeds two single family equivalent dwelling units per acre or which have an aggregate waste flow in excess of 5,000 gallons per day shall only be approved if a study is conducted by the applicant which convinces the department that the aquifer will not be unreasonably degraded.

(2) In addition to the requirements set forth in section (1) of this rule, the following actions are encouraged:

(a) Since the aquifer is presently degraded to the point where it does not meet Federal Drinking Water Standards, and the installation of sewer facilities will not immediately restore the quality to safe levels, Deschutes County should notify the citizens of the LaPine core area of the need to develop a safe drinking water supply for the community as soon as possible;

(b) Residents of the LaPine area are encouraged to test their drinking water frequently;

(c) Owners of underground liquid storage tanks are encouraged to periodically test the storage tanks to assure prompt detection and repair of leaks;

(d) Data on the quality of the shallow aquifer in and around LaPine should be obtained on a periodic basis to assess the effect of the above waste water management decisions on the quality of the groundwater.

Stat. Auth.: ORS 468
Stats. Implemented: ORS 468B.030
Hist.: DEQ 10-1983, f. & ef. 5-25-83; DEQ 13-1985, f. & ef. 10-11-85

John Day Basin

340-041-0602

Beneficial Water Uses to be Protected

Water quality in the John Day River Basin (see **Figures 1 and 11**) shall be managed to protect the recognized beneficial uses as indicated in **Table 10**.

[ED. NOTE: The Figure(s) and Table referenced in this rule are not printed in the OAR Compilation. Copies are available from the agency.]

Stat. Auth.: ORS 468
Stats. Implemented: ORS 468B.048
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 9-1985, f. & ef. 8-6-85

340-041-0605

Water Quality Standards Not to be Exceeded (To be Adopted Pursuant to ORS 468.735 and Enforceable Pursuant to ORS 468.720, 468.990, and 468.992)

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

(2) No wastes shall be discharged and no activities shall be conducted which either alone or in combination with other wastes or activities will cause violation of the following standards in the waters of the John Day River Basin:

(a) Dissolved oxygen (DO): The changes adopted by the Commission on January 11, 1996, become effective July 1, 1996. Until that time, the requirements of this rule that were in effect on January 10, 1996, apply:

(A) For waterbodies identified by the Department as providing salmonid spawning, during the periods from spawning until fry emergence from the gravels, the following criteria apply:

(i) The dissolved oxygen shall not be less than 11.0 mg/l. However, if the minimum intergravel dissolved oxygen, measured as a spatial median, is 8.0 mg/l or greater, then the DO criterion is 9.0 mg/l;

(ii) Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 11.0 mg/l or 9.0 mg/l criteria, dissolved oxygen levels shall not be less than 95 percent of saturation.

(B) For waterbodies identified by the Department as providing salmonid spawning during the period from spawning until fry emergence from the gravels, the spatial median intergravel dissolved oxygen concentration shall not fall below 6.0 mg/l;

(C) A spatial median of 8.0 mg/l intergravel dissolved oxygen level shall be used to identify areas where the recognized beneficial use of salmonid spawning, egg incubation and fry emergence from the egg and from the gravels may be impaired and therefore require action by the Department. Upon determination that the spatial median intergravel dissolved oxygen concentration is below 8.0 mg/l, the Department may, in accordance with priorities established by the Department for evaluating water quality impaired

~~waterbodies, determine whether to list the waterbody as water quality limited under the Section 303(d) of the Clean Water Act, initiate pollution control strategies as warranted, and where needed cooperate with appropriate designated management agencies to evaluate and implement necessary best management practices for nonpoint source pollution control;~~

~~(D) For waterbodies identified by the Department as providing cold water aquatic life, the dissolved oxygen shall not be less than 8.0 mg/l as an absolute minimum. Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 8.0 mg/l, dissolved oxygen shall not be less than 90 percent of saturation. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 8.0 mg/l as a 30 day mean minimum, 6.5 mg/l as a seven day minimum mean, and shall not fall below 6.0 mg/l as an absolute minimum (**Table 21**);~~

~~(E) For waterbodies identified by the Department as providing cool water aquatic life, the dissolved oxygen shall not be less than 6.5 mg/l as an absolute minimum. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 6.5 mg/l as a 30 day mean minimum, 5.0 mg/l as a seven day minimum mean, and shall not fall below 4.0 mg/l as an absolute minimum (**Table 21**);~~

~~(F) For waterbodies identified by the Department as providing warm water aquatic life, the dissolved oxygen shall not be less than 5.5 mg/l as an absolute minimum. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 5.5 mg/l as a 30 day mean minimum, and shall not fall below 4.0 mg/l as an absolute minimum (**Table 21**);~~

~~(b) Temperature: The changes adopted by the Commission on January 11, 1996, become effective July 1, 1996. Until that time, the requirements of this rule that were in effect on January 10, 1996, apply. The method for measuring the numeric temperature criteria specified in this rule is defined in OAR 340 041 0006(54):~~

~~(A) To accomplish the goals identified in OAR 340 041 0120(11), unless specifically allowed under a Department approved surface water temperature management plan as required under OAR 340 041 0026(3)(a)(D), no measurable surface water temperature increase resulting from anthropogenic activities is allowed:~~

~~(i) In a basin for which salmonid fish rearing is a designated beneficial use, and in which surface water temperatures exceed 64.0°F (17.8°C);~~

~~(ii) In the Columbia River or its associated sloughs and channels from the mouth to river mile 309 when surface water temperatures exceed 68.0°F (20.0°C);~~

~~(iii) In waters and periods of the year determined by the Department to support native salmonid spawning, egg incubation, and fry emergence from the egg and from the gravels in a basin which exceeds 55.0°F (12.8°C);~~

~~(iv) In waters determined by the Department to support or to be necessary to maintain the viability of native Oregon bull trout, when surface water temperatures exceed 50.0°F (10.0°C);~~

~~(v) In waters determined by the Department to be ecologically significant cold water refugia;~~

~~(vi) In stream segments containing federally listed Threatened and Endangered species if the increase would impair the biological integrity of the Threatened and Endangered population;~~

~~(vii) In Oregon waters when the dissolved oxygen (DO) levels are within 0.5 mg/l or 10 percent saturation of the water column or intergravel DO criterion for a given stream reach or subbasin;~~

~~(viii) In natural lakes.~~

~~(B) An exceedance of the numeric criteria identified in subparagraphs (A)(i) through (iv) of this subsection will not be deemed a temperature standard violation if it occurs when the air temperature during the warmest seven-day period of the year exceeds the 90th percentile of the seven-day average daily maximum air temperature calculated in a yearly series over the historic record. However, during such periods, the anthropogenic sources must still continue to comply with their surface water temperature management plans developed under OAR 340-041-0026(3)(a)(D);~~

~~(C) Any source may petition the Commission for an exception to subparagraphs (A)(i) through (viii) of this subsection for discharge above the identified criteria if:~~

~~(i) The source provides the necessary scientific information to describe how the designated beneficial uses would not be adversely impacted; or~~

~~(ii) A source is implementing all reasonable management practices or measures; its activity will not significantly affect the beneficial uses; and the environmental cost of treating the parameter to the level necessary to assure full protection would outweigh the risk to the resource.~~

~~(c) Turbidity (Nephelometric Turbidity Units, NTU): No more than a ten percent cumulative increase in natural stream turbidities shall be allowed, as measured relative to a control point immediately upstream of the turbidity causing activity. However, limited duration activities necessary to address an emergency or to accommodate essential dredging, construction or other legitimate activities and which cause the standard to be~~

~~exceeded may be authorized provided all practicable turbidity control techniques have been applied and one of the following has been granted:~~

~~(A) Emergency activities: Approval coordinated by DEQ with the Department of Fish and Wildlife under conditions they may prescribe to accommodate response to emergencies or to protect public health and welfare;~~

~~(B) Dredging, Construction or other Legitimate Activities: Permit or certification authorized under terms of Section 401 or 404 (Permits and Licenses, Federal Water Pollution Control Act) or OAR 141-085-0100 et seq. (Removal and Fill Permits, Division of State Lands), with limitations and conditions governing the activity set forth in the permit or certificate.~~

~~(d) pH (hydrogen ion concentration): pH values shall not fall outside the ranges identified in paragraphs (A) and (B) of this subsection. The following exception applies: Waters impounded by dams existing on January 1, 1996, which have pHs that exceed the criteria shall not be considered in violation of the standard if the Department determines that the exceedance would not occur without the impoundment and that all practicable measures have been taken to bring the pH in the impounded waters into compliance with the criteria:~~

~~(A) Columbia River (river miles 218 to 247): 7.0 – 8.5;~~

~~(B) All other Basin streams: 6.5 – 9.0. When greater than 25 percent of ambient measurements taken between June and September are greater than pH 8.7, and as resources are available according to priorities set by the Department, the Department shall determine whether the values higher than 8.7 are anthropogenic or natural in origin.~~

~~(e) Bacteria standards:~~

~~(A) Numeric Criteria: Organisms of the coliform group commonly associated with fecal sources (MPN or equivalent membrane filtration using a representative number of samples) shall not exceed the criteria described in subparagraphs (i) and (ii) of this paragraph. Freshwaters:~~

~~(i) A 30 day log mean of 126 *E. coli* organisms per 100 ml, based on a minimum of five (5) samples;~~

~~(ii) No single sample shall exceed 406 *E. coli* organisms per 100 ml.~~

~~(B) Raw Sewage Prohibition: No sewage shall be discharged into or in any other manner be allowed to enter the waters of the State unless such sewage has been treated in a manner approved by the Department or otherwise allowed by these rules;~~

~~(C) Animal Waste: Runoff contaminated with domesticated animal wastes shall be minimized and treated to the maximum extent practicable before it is allowed to enter waters of the State;~~

~~(D) Effluent Limitations and Water Quality Limited Waterbodies: Effluent limitations to implement the criteria in this rule are found in OAR 340-041-0120(12) through (16). Implementation of the criteria in this rule in water quality limited waterbodies is described in OAR 340-041-0026(3)(a)(I) and OAR 340-041-0120(17).~~

~~(f) Bacterial pollution or other conditions deleterious to waters used for domestic purposes, livestock watering, irrigation, bathing, or shellfish propogation or otherwise injurious to public health shall not be allowed;~~

~~(g) The liberation of dissolved gases, such as carbon dioxide hydrogen sulfide, or other gases, in sufficient quantities to cause objectionable odors or to be deleterious to fish or other aquatic life, navigation, recreation, or other reasonable uses made of such water shall not be allowed;~~

~~(h) The development of fungi or other growths having a deleterious effect on stream bottoms, fish or other aquatic life, or which are injurious to health, recreation, or industry shall not be allowed;~~

~~(i) The creation of tastes or odors or toxic or other conditions that are deleterious to fish or other aquatic life or affect the potability of drinking water or the palatability of fish or shellfish shall not be allowed;~~

~~(j) The formation of appreciable bottom or sludge deposits or the formation of any organic or inorganic deposits deleterious to fish or other aquatic life or injurious to public health, recreation, or industry shall not be allowed;~~

~~(k) Objectionable discoloration, scum, oily sleek or floating solids, or coating of aquatic life with oil films shall not be allowed;~~

~~(l) Aesthetic conditions offensive to the human senses of sight, taste, smell, or touch shall not be allowed;~~

~~(m) Radioisotope concentrations shall not exceed maximum permissible concentrations (MPC's) in drinking water, edible fishes or shellfishes, wildlife, irrigated crops, livestock and dairy products, or pose an external radiation hazard;~~

~~(n)(A) The concentration of total dissolved gas relative to atmospheric pressure at the point of sample collection shall not exceed 110 percent of saturation, except when stream flow exceeds the ten-year, seven-day average flood. However, for Hatchery receiving waters and waters of less than two feet in depth, the concentration of total dissolved gas relative to atmospheric pressure at the point of sample collection shall not exceed 105 percent of saturation;~~

~~(B) The Commission may modify the total dissolved gas criteria in the Columbia River for the purpose of allowing increased spill for salmonid migration. The Commission must find that:~~

~~(i) Failure to act would result in greater harm to salmonid stock survival through in-river migration than would occur by increased spill;~~

~~(ii) The modified total dissolved gas criteria associated with the increased spill provides a reasonable balance of the risk of impairment due to elevated total dissolved gas to both resident biological communities and other migrating fish and to migrating adult and juvenile salmonids when compared to other options for in-river migration of salmon;~~

~~(iii) Adequate data will exist to determine compliance with the standards; and~~

~~(iv) Biological monitoring is occurring to document that the migratory salmonid and resident biological communities are being protected.~~

~~(C) The Commission will give public notice and notify all known interested parties and will make provision for opportunity to be heard and comment on the evidence presented by others, except that the Director may modify the total dissolved gas criteria for emergencies for a period not exceeding 48 hours;~~

~~(D) The Commission may, at its discretion, consider alternative modes of migration.~~

~~(o) Total Dissolved Solids: Guide concentrations listed below shall not be exceeded unless otherwise specifically authorized by DEQ upon such conditions as it may deem necessary to carry out the general intent of this plan and to protect the beneficial uses set forth in OAR 340-041-0602:~~

~~(A) Columbia River — 200.0 mg/l;~~

~~(B) John Day River and Tributaries — 500.0 mg/l.~~

~~(p) Toxic Substances:~~

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

~~(B) Levels of toxic substances shall not exceed the criteria listed in **Table 20** which were based on criteria established by EPA and published in **Quality Criteria for Water (1986)**, unless otherwise noted;~~

~~(C) The criteria in paragraph (B) of this subsection shall apply unless data from scientifically valid studies demonstrate that the most sensitive designated beneficial uses will not be adversely affected by exceeding a criterion or that a more restrictive criterion is warranted to protect beneficial uses, as accepted by the Department on a site specific basis. Where no published EPA criteria exist for a toxic substance, public health advisories and other published scientific literature may be considered and used, if appropriate, to set guidance values;~~

~~(D) Bio-assessment studies such as laboratory bioassays or instream measurements of indigenous biological communities, shall be conducted, as the Department deems necessary, to monitor the toxicity of complex effluents, other suspected discharges or chemical substances without numeric criteria, to aquatic life. These studies, properly conducted in accordance with standard testing procedures, may be considered as scientifically valid data for the purposes of paragraph (C) of this subsection. If toxicity occurs, the Department shall evaluate and implement measures necessary to reduce toxicity on a case-by-case basis.~~

~~(3) Where the naturally occurring quality parameters of waters of the John Day Basin are outside the numerical limits of the above assigned water quality standards, the naturally occurring water quality shall be the standard. However, in such cases special restrictions, described in OAR 340-041-0026(3)(a)(C)(iii), apply to discharges that affect dissolved oxygen.~~

~~(4) Mixing zones:~~

~~(a) The Department may allow a designated portion of a receiving water to serve as a zone of dilution for wastewaters and receiving waters to mix thoroughly and this zone will be defined as a mixing zone;~~

~~(b) The Department may suspend all or part of the water quality standards, or set less restrictive standards, in the defined mixing zone, provided that the following conditions are met:~~

~~(A) The water within the mixing zone shall be free of:~~

~~(i) Materials in concentrations that will cause acute toxicity to aquatic life as measured by a Department approved bioassay method. Acute toxicity is lethality to aquatic life as measured by a significant difference in lethal concentration between the control and 100 percent effluent in an acute bioassay test. Lethality in 100 percent effluent may be allowed due to ammonia and chlorine only when it is demonstrated on a case-by-case basis that immediate dilution of the effluent within the mixing zone reduces toxicity below lethal concentrations. The Department may on a case-by-case basis establish a zone of immediate dilution if appropriate for other parameters;~~

~~(ii) Materials that will settle to form objectionable deposits;~~

~~(iii) Floating debris, oil, scum, or other materials that cause nuisance conditions;~~

~~(iv) Substances in concentrations that produce deleterious amounts of fungal or bacterial growths.~~

~~(B) The water outside the boundary of the mixing zone shall:~~

~~(i) Be free of materials in concentrations that will cause chronic (sublethal) toxicity. Chronic toxicity is measured as the concentration that causes long-term sublethal effects, such as significantly impaired growth or reproduction in aquatic organisms, during a testing period based on test species life cycle. Procedures and end points will be specified by the Department in wastewater discharge permits;~~

~~(ii) Meet all other water quality standards under normal annual low flow conditions.~~

~~(c) The limits of the mixing zone shall be described in the wastewater discharge permit. In determining the location, surface area, and volume of a mixing zone area, the Department may use appropriate mixing zone guidelines to assess the biological, physical, and chemical character of receiving waters, and effluent, and the most appropriate placement of the outfall, to protect instream water quality, public health, and other beneficial uses. Based on receiving water and effluent characteristics, the Department shall define a mixing zone in the immediate area of a wastewater discharge to:~~

~~(A) Be as small as feasible;~~

~~(B) Avoid overlap with any other mixing zones to the extent possible and be less than the total stream width as necessary to allow passage of fish and other aquatic organisms;~~

~~(C) Minimize adverse effects on the indigenous biological community especially when species are present that warrant special protection for their economic importance, tribal significance, ecological uniqueness, or for other similar reasons as determined by the Department and does not block the free passage of aqutic life;~~

~~(D) Not threaten public health;~~

~~(E) Minimize adverse effects on other designated beneficial uses outside the mixing zone.~~

~~(d) The Department may request the applicant of a permitted discharge for which a mixing zone is required, to submit all information necessary to define a mixing zone, such as:~~

~~(A) Type of operation to be conducted;~~

~~(B) Characteristics of effluent flow rates and composition;~~

(C) Characteristics of low flows of receiving waters;

(D) Description of potential environmental effects;

(E) Proposed design for outfall structures.

(e) The Department may, as necessary, require mixing zone monitoring studies and/or bioassays to be conducted to evaluate water quality or biological status within and outside the mixing zone boundary.

(f) The Department may change mixing zone limits or require the relocation of an outfall if it determines that the water quality within the mixing zone adversely affects any existing beneficial uses in the receiving waters.

(g) **Alternate requirements for mixing zones**: For some existing or proposed discharges to some receiving streams, it may not be practicable to treat wastewater to meet instream water quality standards at the point of discharge or within a short distance from the point of discharge. Some of these discharges could be allowed without impairing the overall ecological integrity of the receiving streams, or may provide an overall benefit to the receiving stream. This section specifies the conditions and circumstances under which a mixing zone may be allowed by the Department that extends beyond the immediate area around a discharge point, or that extends across a stream width. An alternate mixing zone may be approved if the applicant demonstrates to the Department's satisfaction that the discharge (A) creates an overall environmental benefit, or (B) is to a constructed water course, or (C) is insignificant. The three circumstances under which alternate mixing zones may be established are described further below.

(A) **Overall environmental benefit**.

(i) Qualifying for alternate mixing zone based on overall environmental benefit: In order to qualify for an alternate mixing zone based on a finding of overall environmental benefit, the discharger must demonstrate to the Department's satisfaction the following:

(I) That all practical strategies have been or will be implemented to minimize the pollutant loads in the effluent; and

(II) For proposed increased discharges, the current actual discharge and mixing zone does not meet the requirements of a standard mixing zone; and

(III) Either that, on balance, an environmental benefit would be lost if the discharge did not occur, or that the discharger is prepared to undertake other actions that will mitigate the effect of the discharge to an extent resulting in a net environmental benefit to the receiving stream.

(IV) For the purposes of this rule, the term "practical" shall include environmental impact, availability of alternatives, cost of alternatives, and other relevant factors.

~~(ii) Studies required and evaluation of studies: In order to demonstrate that, on balance, an environmental benefit will result from the discharge, the following information shall be provided by the applicant:~~

~~(I) The effluent flow and pollutant loads that are detected or expected in the effluent, by month, both average and expected worst case discharges. The parameters to be evaluated include at a minimum temperature, biochemical oxygen demand, total suspended solids, total dissolved solids, pH, settleable solids, e. coli bacteria, oil and grease, any pollutants listed in Table 20 of this rule division, and any pollutant for which the receiving stream has been designated by the Department as water quality limited; and~~

~~(II) Receiving stream flow, by month; and~~

~~(III) The expected impact of the discharge, by month, on the receiving stream for the entire proposed mixing zone area for all of the pollutants listed above. Included in this analysis shall be a comparison of the receiving stream water quality with the discharge and without the discharge; and~~

~~(IV) A description of fish, other vertebrate populations, and macroinvertebrates that reside in or are likely to pass through the proposed mixing zone, including expected location (if known), species identification, stage of development, and time of year when their presence is expected. For existing discharges, the applicant shall provide the same information for similar nearby streams that are unaffected by wastewater discharges. In addition, any threatened or endangered species in the immediate vicinity of the receiving stream shall be identified; and~~

~~(V) The expected impact of the discharge on aquatic organisms and/or fish passage, including any expected negative impacts from the effluent attracting fish where that is not desirable; and~~

~~(VI) A description of the expected environmental benefits to be derived from the discharge or other mitigation measures proposed by the applicant, including but not limited to improvements in water quality, improvements in fish passage, and improvements in aquatic habitat. If the applicant proposes to undertake mitigation measures designed to provide environmental benefits (e.g., purchasing water or water conservation rights to increase stream flows or establishing stream cover to decrease temperature), the applicant shall describe the mitigation measures in detail, including a description of the steps it will take to ensure that the benefits of the mitigation measures are attained and are not lost or diminished over time.~~

~~(VII) Some or all of the above study requirements may be waived by the Department, if the Department determines that the information is not needed. In the event that the Department does waive some or all of the above study requirements, the basis for waiving the requirements will be included in the permit evaluation report upon the next permit renewal or modification relating to the mixing zone.~~

~~(VIII) Upon request of the Department, the applicant shall conduct additional studies to further evaluate the impact of the discharge, which may include whole effluent toxicity testing, stream surveys for water quality, stream surveys for fish and other aquatic organisms, or other studies as specified by the Department.~~

~~(IX) In evaluating whether an existing or proposed increase in an existing discharge would result in a net environmental benefit, the applicant shall use the native biological community in a nearby, similar stream that is unaffected by wastewater discharges. The Department shall consider all information generated as required in this rule and other relevant information. The evaluation shall consider benefits to the native aquatic biological community only.~~

~~(iii) Permit conditions: Upon determination by the Department that the discharge and mitigation measures (if any) will likely result in an overall environmental benefit, the Department shall include appropriate permit conditions to insure that the environmental benefits are attained and continue. Such permit conditions may include but not be limited to:~~

~~(I) Maximum allowed effluent flows and pollutant loads;~~

~~(II) Requirements to maintain land ownership, easements, contracts, or other legally binding measures necessary to assure that mitigation measures, if any, remain in place and effective;~~

~~(III) Special operating conditions;~~

~~(IV) Monitoring and reporting requirements; and~~

~~(V) Studies to evaluate the effectiveness of mitigation measures.~~

~~(B) **Constructed water course**: A mixing zone may be extended through a constructed water course and into a natural water course. For the purposes of this rule, a constructed water course is one that was constructed for irrigation, site drainage, or wastewater conveyance, and has the following characteristics:~~

~~(i) Irrigation flows, stormwater runoff, or wastewater flows have replaced natural streamflow regimes; and~~

~~(ii) The channel form is greatly simplified in lengthwise and cross sectional profiles; and~~

~~(iii) Physical and biological characteristics that differ significantly from nearby natural streams; and~~

~~(iv) A much lower diversity of aquatic species than found in nearby natural streams; and~~

(v) If the constructed water course is an irrigation canal, then it must have effective fish screens in place to qualify as a constructed water course.

(C) **Insignificant discharges**: Insignificant discharges are those that either by volume, pollutant characteristics, and/or temporary nature are expected to have little if any impact on beneficial uses in the receiving stream, and for which the extensive evaluations required for discharges to smaller streams are not warranted. For the purposes of this rule, only filter backwash discharges and underground storage tank cleanups are considered insignificant discharges.

(D) **Other requirements for alternate mixing zones**: The following are additional requirements for dischargers requesting an alternate mixing zone:

(i) Most discharges that qualify for an alternate mixing zone will extend through the receiving stream until a larger stream is reached, where thorough mixing of the effluent can occur and where the edge of the allowed mixing zone will be located. The portion of the mixing zone in the larger stream must meet all of the requirements of the standard mixing zone, including not blocking aquatic life passage; and

(ii) An alternate mixing zone shall not be granted if a municipal drinking water intake is located within the proposed mixing zone, and the discharge has a significant adverse impact on the drinking water source; and

(iii) The discharge will not pose an unreasonable hazard to the environment or pose a significant health risk, considering the likely pathways of exposure; and

(iv) The discharge shall not be acutely toxic to organisms passing through the mixing zone; and

(v) An alternate mixing zone shall not be granted if the substances discharged may accumulate in the sediments or bioaccumulate in aquatic life or wildlife to levels that adversely affect public health, safety, or welfare; aquatic life; wildlife; or other designated beneficial uses; and

(vi) In the event that the receiving stream is water quality limited, the requirements for discharges to water quality limited streams supersede this rule.

(5) Testing methods: The analytical testing methods for determining compliance with the water quality standards contained in this rule shall be in accordance with the most recent edition of **Standard Methods for the Examination of Water and Waste Water published jointly by the American Public Health Association, American Water Works Association, and Water Pollution Control Federation,** unless the Department has published an applicable superseding method, in which case testing shall be in accordance with the superseding method; provided, however, that testing in accordance with an alternative method shall comply with this rule if the Department has published the method or has approved the method in writing.

[ED. NOTE: The Table(s) referenced in this rule is not printed in the OAR Compilation. Copies are available from the agency.]

[Publications: The publication(s) referred to or incorporated by reference in this rule are available from the office of the agency.]

Stat. Auth.: ORS 468.735, ORS 468B.035 & ORS 468B.048
Stats. Implemented: ORS 468B.048
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 1-1980, f. & ef. 1-9-80; DEQ 18-1987, f. & ef. 9-4-87; DEQ 14-1991, f. & cert. ef. 8-13-91; DEQ 17-1992, f. & cert. ef. 8-7-92 (and corrected 8-13-92); DEQ 6-1995, f. & cert. ef. 2-28-95; DEQ 21-1995(Temp), f. & cert. ef. 9-21-95; DEQ 5-1996, f. & cert. ef. 3-7-96; DEQ 22-1997, f. & cert. ef. 10-24-97

340-041-0615

Minimum Design Criteria for Treatment and Control of Wastes

Subject to the implementation program set forth in OAR 340-041-0120, prior to discharge of any wastes from any new or modified facility to any waters of the John Day River Basin, such wastes shall be treated and controlled in facilities designed in accordance with the following minimum criteria. (In designing treatment facilities, average conditions and a normal range of variability are generally used in establishing design criteria. A facility once completed and placed in operation should operate at or near the design limit most of the time but may operate below the design criteria limit at times due to variables which are unpredictable or uncontrollable. This is particularly true for biological treatment facilities. The actual operating limits are intended to be established by permit pursuant to ORS 468.740 and recognize that the actual performance level may at times be less than the design criteria).

(1) Sewage wastes:

(a) During periods of low stream flows (approximately May 1 to October 31): Treatment resulting in monthly average effluent concentrations not to exceed 20 mg/l of BOD and 20 mg/l of SS or equivalent control;

(b) During the period of high stream flows (approximately November 1 to April 30): A minimum of secondary treatment or equivalent control and unless otherwise specifically authorized by the Department, operation of all waste treatment and control facilities at maximum practicable efficiency and effectiveness so as to minimize waste discharges to public waters;

(c) Effluent BOD concentrations in mg/l, divided by the dilution factor (ratio of receiving stream flow to effluent flow) shall not exceed one unless otherwise approved by the EQC;

(d) Sewage wastes shall be disinfected, after treatment, equivalent to thorough mixing with sufficient chlorine to provide a residual of at least one part per million after 60 minutes of contact time unless otherwise specifically authorized by permit;

(e) Positive protection shall be provided to prevent bypassing raw or inadequately treated sewage to public waters unless otherwise approved by the Department where elimination of inflow and infiltration would be necessary but not presently practicable;

(f) More stringent waste treatment and control requirements may be imposed where special conditions may require.

(2) Industrial wastes:

(a) After maximum practicable inplant control, a minimum of secondary treatment or equivalent control (reduction of suspended solids and organic material where present in significant quantities, effective disinfection where bacterial organisms of public health significance are present, and control of toxic or other deleterious substances);

(b) Specific industrial waste treatment requirements shall be determined on an individual basis in accordance with the provisions of this plan, applicable federal requirements, and the following:

(A) The uses which are or may likely be made of the receiving stream;

(B) The size and nature of flow of the receiving stream;

(C) The quantity and quality of wastes to be treated; and

(D) The presence or absence of other sources of pollution on the same watershed.

(c) Where industrial, commercial, or agricultural effluents contain significant quantities of potentially toxic elements, treatment requirements shall be determined utilizing appropriate bioassays;

(d) Industrial cooling waters containing significant heat loads shall be subjected to offstream cooling or heat recovery prior to discharge to public waters;

(e) Positive protection shall be provided to prevent bypassing of raw or inadequately treated industrial wastes to any public waters;

(f) Facilities shall be provided to prevent and contain spills of potentially toxic or hazardous materials and a positive program for containment and cleanup of such spills should they occur shall be developed and maintained.

Stat. Auth.: ORS 468
Stats. Implemented: ORS 468B.030
Hist.: DEQ 128, f. & ef. 1-21-77

Umatilla Basin

340-041-0642

Beneficial Water Uses to be Protected

Water quality in the Umatilla River Basin (see **Figures 1** and **12**) shall be managed to protect the recognized beneficial uses as indicated in **Table 11**.

[ED. NOTE: The Figure(s) and Table referenced in this rule are not printed in the OAR Compilation. Copies are available from the agency.]

Stat. Auth.: ORS 468
Stats. Implemented: ORS 468B.048
Hist.: DEQ 128, f. & ef. 1-21-77

340-041-0645

Water Quality Standards Not to be Exceeded (To be Adopted Pursuant to ORS 468.735 and Enforceable Pursuant to ORS 468.720, 468.990, and 468.992)

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

(2) No wastes shall be discharged and no activities shall be conducted which either alone or in combination with other wastes or activities will cause violation of the following standards in the waters of the Umatilla River Basin:

(a) Dissolved oxygen (DO): The changes adopted by the Commission on January 11, 1996, become effective July 1, 1996. Until that time, the requirements of this rule that were in effect on January 10, 1996, apply:

(A) For waterbodies identified by the Department as providing salmonid spawning, during the periods from spawning until fry emergence from the gravels, the following criteria apply:

~~(i) The dissolved oxygen shall not be less than 11.0 mg/l. However, if the minimum intergravel dissolved oxygen, measured as a spatial median, is 8.0 mg/l or greater, then the DO criterion is 9.0 mg/l;~~

~~(ii) Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 11.0 mg/l or 9.0 mg/l criteria, dissolved oxygen levels shall not be less than 95 percent of saturation.~~

~~(B) For waterbodies identified by the Department as providing salmonid spawning during the period from spawning until fry emergence from the gravels, the spatial median intergravel dissolved oxygen concentration shall not fall below 6.0 mg/l;~~

~~(C) A spatial median of 8.0 mg/l intergravel dissolved oxygen level shall be used to identify areas where the recognized beneficial use of salmonid spawning, egg incubation and fry emergence from the egg and from the gravels may be impaired and therefore require action by the Department. Upon determination that the spatial median intergravel dissolved oxygen concentration is below 8.0 mg/l, the Department may, in accordance with priorities established by the Department for evaluating water quality impaired waterbodies, determine whether to list the waterbody as water quality limited under the Section 303(d) of the Clean Water Act, initiate pollution control strategies as warranted, and where needed cooperate with appropriate designated management agencies to evaluate and implement necessary best management practices for nonpoint source pollution control;~~

~~(D) For waterbodies identified by the Department as providing cold water aquatic life, the dissolved oxygen shall not be less than 8.0 mg/l as an absolute minimum. Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 8.0 mg/l, dissolved oxygen shall not be less than 90 percent of saturation. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 8.0 mg/l as a 30-day mean minimum, 6.5 mg/l as a seven-day minimum mean, and shall not fall below 6.0 mg/l as an absolute minimum (**Table 21**);~~

~~(E) For waterbodies identified by the Department as providing cool water aquatic life, the dissolved oxygen shall not be less than 6.5 mg/l as an absolute minimum. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 6.5 mg/l as a 30-day mean minimum, 5.0 mg/l as a seven-day minimum mean, and shall not fall below 4.0 mg/l as an absolute minimum (**Table 21**);~~

~~(F) For waterbodies identified by the Department as providing warm water aquatic life, the dissolved oxygen shall not be less than 5.5 mg/l as an absolute minimum. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 5.5 mg/l as a 30-day mean minimum, and shall not fall below 4.0 mg/l as an absolute minimum (**Table 21**);~~

~~(b) Temperature: The changes adopted by the Commission on January 11, 1996, become effective July 1, 1996. Until that time, the requirements of this rule that were in effect on January 10, 1996, apply. The method for measuring the numeric temperature criteria specified in this rule is defined in OAR 340-041-0006(54):~~

~~(A) To accomplish the goals identified in OAR 340-041-0120(11), unless specifically allowed under a Department approved surface water temperature management plan as required under OAR 340-041-0026(3)(a)(D), no measurable surface water temperature increase resulting from anthropogenic activities is allowed:~~

~~(i) In a basin for which salmonid fish rearing is a designated beneficial use, and in which surface water temperatures exceed 64.0°F (17.8°C);~~

~~(ii) In the Columbia River or its associated sloughs and channels from the mouth to river mile 309 when surface water temperatures exceed 68.0°F (20.0°C);~~

~~(iii) In waters and periods of the year determined by the Department to support native salmonid spawning, egg incubation, and fry emergence from the egg and from the gravels in a basin which exceeds 55.0°F (12.8°C);~~

~~(iv) In waters determined by the Department to support or to be necessary to maintain the viability of native Oregon bull trout, when surface water temperatures exceed 50.0°F (10.0°C);~~

~~(v) In waters determined by the Department to be ecologically significant cold water refugia;~~

~~(vi) In stream segments containing federally listed Threatened and Endangered species if the increase would impair the biological integrity of the Threatened and Endangered population;~~

~~(vii) In Oregon waters when the dissolved oxygen (DO) levels are within 0.5 mg/l or 10 percent saturation of the water column or intergravel DO criterion for a given stream reach or subbasin;~~

~~(viii) In natural lakes.~~

~~(B) An exceedance of the numeric criteria identified in subparagraphs (A)(i) through (iv) of this subsection will not be deemed a temperature standard violation if it occurs when the air temperature during the warmest seven-day period of the year exceeds the 90th percentile of the seven-day average daily maximum air temperature calculated in a yearly series over the historic record. However, during such periods, the anthropogenic sources must still continue to comply with their surface water temperature management plans developed under OAR 340-041-0026(3)(a)(D);~~

~~(C) Any source may petition the Commission for an exception to subparagraphs (A)(i) through (viii) of this subsection for discharge above the identified criteria if:~~

~~(i) The source provides the necessary scientific information to describe how the designated beneficial uses would not be adversely impacted; or~~

~~(ii) A source is implementing all reasonable management practices or measures; its activity will not significantly affect the beneficial uses; and the environmental cost of treating the parameter to the level necessary to assure full protection would outweigh the risk to the resource.~~

~~(c) Turbidity (Nephelometric Turbidity Units, NTU): No more than a ten percent cumulative increase in natural stream turbidities shall be allowed, as measured relative to a control point immediately upstream of the turbidity causing activity. However, limited duration activities necessary to address an emergency or to accommodate essential dredging, construction or other legitimate activities and which cause the standard to be exceeded may be authorized provided all practicable turbidity control techniques have been applied and one of the following has been granted:~~

~~(A) Emergency activities: Approval coordinated by DEQ with the Department of Fish and Wildlife under conditions they may prescribe to accommodate response to emergencies or to protect public health and welfare;~~

~~(B) Dredging, Construction or other Legitimate Activities: Permit or certification authorized under terms of Section 401 or 404 (Permits and Licenses, Federal Water Pollution Control Act) or OAR 141-085-0100 et. seq. (Removal and Fill Permits, Division of State Lands), with limitations and conditions governing the activity set forth in the permit or certificate.~~

~~(d) pH (hydrogen ion concentration): pH values shall not fall outside the ranges identified in paragraphs (A) and (B) of this subsection. The following exception applies: Waters impounded by dams existing on January 1, 1996, which have pHs that exceed the criteria shall not be considered in violation of the standard if the Department determines that the exceedance would not occur without the impoundment and that all practicable measures have been taken to bring the pH in the impounded waters into compliance with the criteria:~~

~~(A) Columbia River (river miles 247 to 309): 7.0 – 8.5;~~

~~(B) All other Basin streams: 6.5 – 9.0. When greater than 25 percent of ambient measurements taken between June and September are greater than pH 8.7, and as resources are available according to priorities set by the Department, the Department shall determine whether the values higher than 8.7 are anthropogenic or natural in origin.~~

~~(e) Bacteria standards:~~

~~(A) Numeric Criteria: Organisms of the coliform group commonly associated with fecal sources (MPN or equivalent membrane filtration using a representative number of samples) shall not exceed the criteria described in subparagraphs (i) and (ii) of this paragraph. Freshwaters:~~

~~(i) A 30-day log mean of 126 *E. coli* organisms per 100 ml, based on a minimum of five (5) samples;~~

~~(ii) No single sample shall exceed 406 *E. coli* organisms per 100 ml.~~

~~(B) Raw Sewage Prohibition: No sewage shall be discharged into or in any other manner be allowed to enter the waters of the State unless such sewage has been treated in a manner approved by the Department or otherwise allowed by these rules;~~

~~(C) Animal Waste: Runoff contaminated with domesticated animal wastes shall be minimized and treated to the maximum extent practicable before it is allowed to enter waters of the State;~~

~~(D) Effluent Limitations and Water Quality Limited Waterbodies: Effluent limitations to implement the criteria in this rule are found in OAR 340-041-0120(12) through (16). Implementation of the criteria in this rule in water quality limited waterbodies is described in OAR 340-041-0026(3)(a)(I) and OAR 340-041-0120(17).~~

~~(f) Bacterial pollution or other conditions deleterious to waters used to domestic purposes, livestock watering, irrigation, or bathing, or otherwise injurious to public health shall not be allowed;~~

~~(g) The liberation of dissolved gases, such as carbon dioxide, hydrogen sulfide, or other gases, in sufficient quantities to cause objectionable odors or to be deleterious to fish or other aquatic life, navigation, recreation, or other reasonable uses made of such waters shall not be allowed;~~

~~(h) The development of fungi or other growths having a deleterious effect on stream bottoms, fish or other aquatic life, or which are injurious to health, recreation, or industry shall not be allowed;~~

~~(i) The creation of tastes or odors or toxic or other conditions that are deleterious to fish or other aquatic life or affect the potability of drinking water or the palatability of fish or shellfish shall not be allowed;~~

~~(j) The formation of appreciable bottom or sludge deposits or the formation of any organic or inorganic deposits deleterious to fish or other aquatic life or injurious to public health, recreation, or industry shall not be allowed;~~

~~(k) Objectionable discoloration, scum, oily sleek or floating solids, or coating of aquatic life with oil films shall not be allowed;~~

~~(l) Aesthetic conditions offensive to the human senses of sight, taste, smell, or touch shall not be allowed;~~

~~(m) Radioisotope concentrations shall not exceed maximum permissible concentrations (MPC's) in drinking water, edible fishes or shellfishes, wildlife, irrigated crops, livestock and dairy products, or pose an external radiation hazard;~~

~~(n)(A) The concentration of total dissolved gas relative to atmospheric pressure at the point of sample collection shall not exceed 110 percent of saturation, except when stream flow exceeds the ten year, seven day average flood. However, for Hatchery receiving waters and waters of less than two feet in depth, the concentration of total dissolved gas relative to atmospheric pressure at the point of sample collection shall not exceed 105 percent of saturation;~~

~~(B) The Commission may modify the total dissolved gas criteria in the Columbia River for the purpose of allowing increased spill for salmonid migration. The Commission must find that:~~

~~(i) Failure to act would result in greater harm to salmonid stock survival through in-river migration than would occur by increased spill;~~

~~(ii) The modified total dissolved gas criteria associated with the increased spill provides a reasonable balance of the risk of impairment due to elevated total dissolved gas to both resident biological communities and other migrating fish and to migrating adult and juvenile salmonids when compared to other options for in-river migration of salmon;~~

~~(iii) Adequate data will exist to determine compliance with the standards; and~~

~~(iv) Biological monitoring is occurring to document that the migratory salmonid and resident biological communities are being protected.~~

~~(C) The Commission will give public notice and notify all known interested parties and will make provision for opportunity to be heard and comment on the evidence presented by others, except that the Director may modify the total dissolved gas criteria for emergencies for a period not exceeding 48 hours;~~

~~(D) The Commission may, at its discretion, consider alternative modes of migration.~~

~~(o) Total Dissolved Solids: Guide concentrations listed below shall not be exceeded unless otherwise specifically authorized by DEQ upon such conditions as it may deem necessary to carry out the general intent of this plan and to protect the beneficial uses set forth in OAR 340-041-0642: Columbia River -- 200.0 mg/l;~~

~~(p) Toxic Substances:~~

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

~~(B) Levels of toxic substances shall not exceed the criteria listed in **Table 20** which were based on criteria established by EPA and published in **Quality Criteria for Water (1986)**, unless otherwise noted;~~

~~(C) The criteria in paragraph (B) of this subsection shall apply unless data from scientifically valid studies demonstrate that the most sensitive designated beneficial uses will not be adversely affected by exceeding a criterion or that a more restrictive criterion is warranted to protect beneficial uses, as accepted by the Department on a site specific basis. Where no published EPA criteria exist for a toxic substance, public health advisories and other published scientific literature may be considered and used, if appropriate, to set guidance values;~~

~~(D) Bio-assessment studies such as laboratory bioassays or instream measurements of indigenous biological communities, shall be conducted, as the Department deems necessary, to monitor the toxicity of complex effluents, other suspected discharges or chemical substances without numeric criteria, to aquatic life. These studies, properly conducted in accordance with standard testing procedures, may be considered as scientifically valid data for the purposes of paragraph (C) of this subsection. If toxicity occurs, the Department shall evaluate and implement measures necessary to reduce toxicity on a case-by-case basis.~~

~~(3) Where the naturally occurring quality parameters of waters of the Umatilla River Basin are outside the numerical limits of the above assigned water quality standards, the naturally occurring water quality shall be the standard. However, in such cases special restrictions, described in OAR 340-041-0026(3)(a)(C)(iii), apply to discharges that affect dissolved oxygen.~~

~~(4) Mixing zones:~~

~~(a) The Department may allow a designated portion of a receiving water to serve as a zone of dilution for wastewaters and receiving waters to mix thoroughly and this zone will be defined as a mixing zone;~~

~~(b) The Department may suspend all or part of the water quality standards, or set less restrictive standards, in the defined mixing zone, provided that the following conditions are met:~~

~~(A) The water within the mixing zone shall be free of:~~

(i) Materials in concentrations that will cause acute toxicity to aquatic life as measured by a Department approved bioassay method. Acute toxicity is lethality to aquatic life as measured by a significant difference in lethal concentration between the control and 100 percent effluent in an acute bioassay test. Lethality in 100 percent effluent may be allowed due to ammonia and chlorine only when it is demonstrated on a case by case basis that immediate dilution of the effluent within the mixing zone reduces toxicity below lethal concentrations. The Department may on a case by case basis establish a zone of immediate dilution if appropriate for other parameters;

(ii) Materials that will settle to form objectionable deposits;

(iii) Floating debris, oil, scum, or other materials that cause nuisance conditions;

(iv) Substances in concentrations that produce deleterious amounts of fungal or bacterial growths.

(B) The water outside the boundary of the mixing zone shall:

(i) Be free of materials in concentrations that will cause chronic (sublethal) toxicity. Chronic toxicity is measured as the concentration that causes long-term sublethal effects, such as significantly impaired growth or reproduction in aquatic organisms, during a testing period based on test species life cycle. Procedures and end points will be specified by the Department in wastewater discharge permits;

(ii) Meet all other water quality standards under normal annual low flow conditions.

(c) The limits of the mixing zone shall be described in the wastewater discharge permit. In determining the location, surface area, and volume of a mixing zone area, the Department may use appropriate mixing zone guidelines to assess the biological, physical, and chemical character of receiving waters, and effluent, and the most appropriate placement of the outfall, to protect instream water quality, public health, and other beneficial uses. Based on receiving water and effluent characteristics, the Department shall define a mixing zone in the immediate area of a wastewater discharge to:

(A) Be as small as feasible;

(B) Avoid overlap with any other mixing zones to the extent possible and be less than the total stream width as necessary to allow passage of fish and other aquatic organisms;

(C) Minimize adverse effects on the indigenous biological community especially when species are present that warrant special protection for their economic importance, tribal significance, ecological uniqueness, or for other similar reasons as determined by the Department and does not block the free passage of aquatic life;

(D) Not threaten public health;

(E) Minimize adverse effects on other designated beneficial uses outside the mixing zone.

(d) The Department may request the applicant of a permitted discharge for which a mixing zone is required, to submit all information necessary to define a mixing zone, such as:

(A) Type of operation to be conducted;

(B) Characteristics of effluent flow rates and composition;

(C) Characteristics of low flows of receiving waters;

(D) Description of potential environmental effects;

(E) Proposed design for outfall structures.

(e) The Department may, as necessary, require mixing zone monitoring studies and/or bioassays to be conducted to evaluate water quality or biological status within and outside the mixing zone boundary;

(f) The Department may change mixing zone limits or require the relocation of an outfall if it determines that the water quality within the mixing zone adversely affects any existing beneficial uses in the receiving waters.

(g) **Alternate requirements for mixing zones:** For some existing or proposed discharges to some receiving streams, it may not be practicable to treat wastewater to meet instream water quality standards at the point of discharge or within a short distance from the point of discharge. Some of these discharges could be allowed without impairing the overall ecological integrity of the receiving streams, or may provide an overall benefit to the receiving stream. This section specifies the conditions and circumstances under which a mixing zone may be allowed by the Department that extends beyond the immediate area around a discharge point, or that extends across a stream width. An alternate mixing zone may be approved if the applicant demonstrates to the Department's satisfaction that the discharge (A) creates an overall environmental benefit, or (B) is to a constructed water course, or (C) is insignificant. The three circumstances under which alternate mixing zones may be established are described further below.

(A) **Overall environmental benefit.**

(i) Qualifying for alternate mixing zone based on overall environmental benefit: In order to qualify for an alternate mixing zone based on a finding of overall environmental benefit, the discharger must demonstrate to the Department's satisfaction the following:

(I) That all practical strategies have been or will be implemented to minimize the pollutant loads in the effluent; and

(II) For proposed increased discharges, the current actual discharge and mixing zone does not meet the requirements of a standard mixing zone; and

(III) Either that, on balance, an environmental benefit would be lost if the discharge did not occur, or that the discharger is prepared to undertake other actions that will mitigate the effect of the discharge to an extent resulting in a net environmental benefit to the receiving stream.

(IV) For the purposes of this rule, the term "practical" shall include environmental impact, availability of alternatives, cost of alternatives, and other relevant factors.

(ii) Studies required and evaluation of studies: In order to demonstrate that, on balance, an environmental benefit will result from the discharge, the following information shall be provided by the applicant:

(I) The effluent flow and pollutant loads that are detected or expected in the effluent, by month, both average and expected worst case discharges. The parameters to be evaluated include at a minimum temperature, biochemical oxygen demand, total suspended solids, total dissolved solids, pH, settleable solids, e. coli bacteria, oil and grease, any pollutants listed in Table 20 of this rule division, and any pollutant for which the receiving stream has been designated by the Department as water quality limited; and

(II) Receiving stream flow, by month; and

(III) The expected impact of the discharge, by month, on the receiving stream for the entire proposed mixing zone area for all of the pollutants listed above. Included in this analysis shall be a comparison of the receiving stream water quality with the discharge and without the discharge; and

(IV) A description of fish, other vertebrate populations, and macroinvertebrates that reside in or are likely to pass through the proposed mixing zone, including expected location (if known), species identification, stage of development, and time of year when their presence is expected. For existing discharges, the applicant shall provide the same information for similar nearby streams that are unaffected by wastewater discharges. In addition, any threatened or endangered species in the immediate vicinity of the receiving stream shall be identified; and

(V) The expected impact of the discharge on aquatic organisms and/or fish passage, including any expected negative impacts from the effluent attracting fish where that is not desirable; and

(VI) A description of the expected environmental benefits to be derived from the discharge or other mitigation measures proposed by the applicant, including but not limited to improvements in water quality, improvements in fish passage, and improvements in aquatic habitat. If the applicant proposes to undertake mitigation measures designed to provide environmental benefits (e.g., purchasing water or water

~~conservation rights to increase stream flows or establishing stream cover to decrease temperature), the applicant shall describe the mitigation measures in detail, including a description of the steps it will take to ensure that the benefits of the mitigation measures are attained and are not lost or diminished over time.~~

~~(VII) Some or all of the above study requirements may be waived by the Department, if the Department determines that the information is not needed. In the event that the Department does waive some or all of the above study requirements, the basis for waiving the requirements will be included in the permit evaluation report upon the next permit renewal or modification relating to the mixing zone.~~

~~(VIII) Upon request of the Department, the applicant shall conduct additional studies to further evaluate the impact of the discharge, which may include whole effluent toxicity testing, stream surveys for water quality, stream surveys for fish and other aquatic organisms, or other studies as specified by the Department.~~

~~(IX) In evaluating whether an existing or proposed increase in an existing discharge would result in a net environmental benefit, the applicant shall use the native biological community in a nearby, similar stream that is unaffected by wastewater discharges. The Department shall consider all information generated as required in this rule and other relevant information. The evaluation shall consider benefits to the native aquatic biological community only.~~

~~(iii) Permit conditions: Upon determination by the Department that the discharge and mitigation measures (if any) will likely result in an overall environmental benefit, the Department shall include appropriate permit conditions to insure that the environmental benefits are attained and continue. Such permit conditions may include but not be limited to:~~

~~(I) Maximum allowed effluent flows and pollutant loads;~~

~~(II) Requirements to maintain land ownership, easements, contracts, or other legally binding measures necessary to assure that mitigation measures, if any, remain in place and effective;~~

~~(III) Special operating conditions;~~

~~(IV) Monitoring and reporting requirements; and~~

~~(V) Studies to evaluate the effectiveness of mitigation measures.~~

~~(B) **Constructed water course**: A mixing zone may be extended through a constructed water course and into a natural water course. For the purposes of this rule, a constructed water course is one that was constructed for irrigation, site drainage, or wastewater conveyance, and has the following characteristics:~~

~~(i) Irrigation flows, stormwater runoff, or wastewater flows have replaced natural streamflow regimes; and~~

~~(ii) The channel form is greatly simplified in lengthwise and cross sectional profiles; and~~

~~(iii) Physical and biological characteristics that differ significantly from nearby natural streams; and~~

~~(iv) A much lower diversity of aquatic species than found in nearby natural streams; and~~

~~(v) If the constructed water course is an irrigation canal, then it must have effective fish screens in place to qualify as a constructed water course.~~

~~(C) **Insignificant discharges**: Insignificant discharges are those that either by volume, pollutant characteristics, and/or temporary nature are expected to have little if any impact on beneficial uses in the receiving stream, and for which the extensive evaluations required for discharges to smaller streams are not warranted. For the purposes of this rule, only filter backwash discharges and underground storage tank cleanups are considered insignificant discharges.~~

~~(D) **Other requirements for alternate mixing zones**: The following are additional requirements for dischargers requesting an alternate mixing zone:~~

~~(i) Most discharges that qualify for an alternate mixing zone will extend through the receiving stream until a larger stream is reached, where thorough mixing of the effluent can occur and where the edge of the allowed mixing zone will be located. The portion of the mixing zone in the larger stream must meet all of the requirements of the standard mixing zone, including not blocking aquatic life passage; and~~

~~(ii) An alternate mixing zone shall not be granted if a municipal drinking water intake is located within the proposed mixing zone, and the discharge has a significant adverse impact on the drinking water source; and~~

~~(iii) The discharge will not pose an unreasonable hazard to the environment or pose a significant health risk, considering the likely pathways of exposure; and~~

~~(iv) The discharge shall not be acutely toxic to organisms passing through the mixing zone; and~~

~~(v) An alternate mixing zone shall not be granted if the substances discharged may accumulate in the sediments or bioaccumulate in aquatic life or wildlife to levels that adversely affect public health, safety, or welfare; aquatic life; wildlife; or other designated beneficial uses; and~~

~~(vi) In the event that the receiving stream is water quality limited, the requirements for discharges to water quality limited streams supersede this rule.~~

(5) Testing methods: The analytical testing methods for determining compliance with the water quality standards contained in this rule shall be in accordance with the most recent edition of **Standard Methods for the Examination of Water and Waste Water published jointly by the American Public Health Association, American Water Works Association, and Water Pollution Control Federation**, unless the Department has published an applicable superseding method, in which case testing shall be in accordance with the superseding method; provided, however, that testing in accordance with an alternative method shall comply with this rule if the Department has published the method or has approved the method in writing.

[ED. NOTE: The Table(s) referenced in this rule is not printed in the OAR Compilation. Copies are available from the agency.]

[Publications: The publication(s) referred to or incorporated by reference in this rule are available from the office of the agency.]

Stat. Auth.: ORS 468.735, ORS 468B.035 & ORS 468B.048
Stats. Implemented: ORS 468B.048
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 1-1980, f. & ef. 1-9-80; DEQ 18-1987, f. & ef. 9-4-87; DEQ 14-1991, f. & cert. ef. 8-13-91; DEQ 17-1992, f. & cert. ef. 8-7-92 (and corrected 8-13-92); DEQ 6-1995, f. & cert. ef. 2-28-95; DEQ 21-1995(Temp), f. & cert. ef. 9-21-95; DEQ 5-1996, f. & cert. ef. 3-7-96; DEQ 22-1997, f. & cert. ef. 10-24-97

340-041-0655

Minimum Design Criteria for Treatment and Control of Wastes

Subject to the implementation program set forth in OAR 340-041-0120, prior to discharge of any wastes from any new or modified facility to any waters of the Umatilla River Basin, such wastes shall be treated and controlled in facilities designed in accordance with the following minimum criteria. (In designing treatment facilities, average conditions and a normal range of variability are generally used in establishing design criteria. A facility once completed and placed in operation should operate at or near the design limit most of the time but may operate below the design criteria limit at times due to variables which are unpredictable or uncontrollable. This is particularly true for biological treatment facilities. The actual operating limits are intended to be established by permit pursuant to ORS 468.740 and recognize that the actual performance level may at times be less than the design criteria).

(1) Sewage wastes:

(a) During periods of low stream flows (approximately May 1 to October 31): Treatment resulting in monthly average effluent concentrations not to exceed 20 mg/l of BOD and 20 mg/l of SS or equivalent control;

~~(b) During the period of high stream flows (approximately November 1 to April 30): A minimum of secondary treatment or equivalent control and unless otherwise specifically authorized by the Department, operation of all waste treatment and control facilities at maximum practicable efficiency and effectiveness so as to minimize waste discharges to public waters;~~

~~(c) Effluent BOD concentrations in mg/l, divided by the dilution factor (ratio of receiving stream flow to effluent flow) shall not exceed one (1) unless otherwise approved by the EQC;~~

~~(d) Sewage wastes shall be disinfected, after treatment, equivalent to thorough mixing with sufficient chlorine to provide a residual of at least 1 part per million after 60 minutes of contact time unless otherwise specifically authorized by permit;~~

~~(e) Positive protection shall be provided to prevent bypassing raw or inadequately treated sewage to public waters unless otherwise approved by the Department where elimination of inflow and infiltration would be necessary but not presently practicable;~~

~~(f) More stringent waste treatment and control requirements may be imposed where special conditions may require.~~

~~(2) Industrial wastes:~~

~~(a) After maximum practicable inplant control, a minimum of secondary treatment or equivalent control (reduction of suspended solids and organic material where present in significant quantities, effective disinfection where bacterial organisms of public health significance are present, and control of toxic or other deleterious substances);~~

~~(b) Specific industrial waste treatment requirements shall be determined on an individual basis in accordance with the provisions of this plan, applicable federal requirements, and the following:~~

~~(A) The uses which are or may likely be made of the receiving stream;~~

~~(B) The size and nature of flow of the receiving stream;~~

~~(C) The quantity and quality of wastes to be treated; and~~

~~(D) The presence or absence of other sources of pollution on the same watershed.~~

~~(c) Where industrial, commercial, or agricultural effluents contain significant quantities of potentially toxic elements, treatment requirements shall be determined utilizing appropriate bioassays;~~

~~(d) Industrial cooling waters containing significant heat loads shall be subjected to offstream cooling or heat recovery prior to discharge to public waters;~~

(e) Positive protection shall be provided to prevent bypassing of raw or inadequately treated industrial wastes to any public waters;

(f) Facilities shall be provided to prevent and contain spills of potentially toxic or hazardous materials and a positive program for containment and cleanup of such spills should they occur shall be developed and maintained.

Stat. Auth.: ORS 468
Stats. Implemented: ORS 468B.030
Hist.: DEQ 128, f. & ef. 1-21-77

Walla Walla Basin

340-041-0682

Beneficial Water Uses to be Protected

Water quality in the Walla Walla River Basin (see **Figures 1** and **13**) shall be managed to protect the recognized beneficial uses as indicated in **Table 12**.

[ED. NOTE: The Figure(s) and Table referenced in this rule are not printed in the OAR Compilation. Copies are available from the agency.]

Stat. Auth.: ORS 468
Stats. Implemented: ORS 468B.048
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 9-1985, f. & ef. 8-6-85

340-041-0685

Water Quality Standards Not to be Exceeded (To be Adopted Pursuant to ORS 468.735 and Enforceable Pursuant to ORS 468.720, 468.990, and 468.992)

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

(2) No wastes shall be discharged and no activities shall be conducted which either alone or in combination with other wastes or activities will cause violation of the following standards in the waters of the Walla Walla River Basin:

(a) Dissolved oxygen (DO): The changes adopted by the Commission on January 11, 1996, become effective July 1, 1996. Until that time, the requirements of this rule that were in effect on January 10, 1996, apply:

~~(A) For waterbodies identified by the Department as providing salmonid spawning, during the periods from spawning until fry emergence from the gravels, the following criteria apply:~~

~~(i) The dissolved oxygen shall not be less than 11.0 mg/l. However, if the minimum intergravel dissolved oxygen, measured as a spatial median, is 8.0 mg/l or greater, then the DO criterion is 9.0 mg/l;~~

~~(ii) Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 11.0 mg/l or 9.0 mg/l criteria, dissolved oxygen levels shall not be less than 95 percent of saturation.~~

~~(B) For waterbodies identified by the Department as providing salmonid spawning during the period from spawning until fry emergence from the gravels, the spatial median intergravel dissolved oxygen concentration shall not fall below 6.0 mg/l;~~

~~(C) A spatial median of 8.0 mg/l intergravel dissolved oxygen level shall be used to identify areas where the recognized beneficial use of salmonid spawning, egg incubation and fry emergence from the egg and from the gravels may be impaired and therefore require action by the Department. Upon determination that the spatial median intergravel dissolved oxygen concentration is below 8.0 mg/l, the Department may, in accordance with priorities established by the Department for evaluating water quality impaired waterbodies, determine whether to list the waterbody as water quality limited under the Section 303(d) of the Clean Water Act, initiate pollution control strategies as warranted, and where needed cooperate with appropriate designated management agencies to evaluate and implement necessary best management practices for nonpoint source pollution control;~~

~~(D) For waterbodies identified by the Department as providing cold water aquatic life, the dissolved oxygen shall not be less than 8.0 mg/l as an absolute minimum. Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 8.0 mg/l, dissolved oxygen shall not be less than 90 percent of saturation. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 8.0 mg/l as a 30 day mean minimum, 6.5 mg/l as a seven day minimum mean, and shall not fall below 6.0 mg/l as an absolute minimum (**Table 21**);~~

~~(E) For waterbodies identified by the Department as providing cool water aquatic life, the dissolved oxygen shall not be less than 6.5 mg/l as an absolute minimum. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 6.5 mg/l as a 30 day mean minimum, 5.0 mg/l as a seven day minimum mean, and shall not fall below 4.0 mg/l as an absolute minimum (**Table 21**);~~

~~(F) For waterbodies identified by the Department as providing warm water aquatic life, the dissolved oxygen shall not be less than 5.5 mg/l as an absolute minimum. At the~~

discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 5.5 mg/l as a 30-day mean minimum, and shall not fall below 4.0 mg/l as an absolute minimum (**Table 21**);

(b) Turbidity (Nephelometric Turbidity Units, NTU): No more than a ten percent cumulative increase in natural stream turbidities shall be allowed, as measured relative to a control point immediately upstream of the turbidity causing activity. However, limited duration activities necessary to address an emergency or to accommodate essential dredging, construction or other legitimate activities and which cause the standard to be exceeded may be authorized provided all practicable turbidity control techniques have been applied and one of the following has been granted:

(A) Emergency activities: Approval coordinated by DEQ with the Department of Fish and Wildlife under conditions they may prescribe to accommodate response to emergencies or to protect public health and welfare;

(B) Dredging, Construction or other Legitimate Activities: Permit or certification authorized under terms of Section 401 or 404 (Permits and Licenses, Federal Water Pollution Control Act) or OAR 141-085-0100 et. seq. (Removal and Fill Permits, Division of State Lands), with limitations and conditions governing the activity set forth in the permit or certificate.

(c) pH (hydrogen ion concentration): pH values shall not fall outside the range of 6.5 to 9.0. When greater than 25 percent of ambient measurements taken between June and September are greater than pH 8.7, and as resources are available according to priorities set by the Department, the Department shall determine whether the values higher than 8.7 are anthropogenic or natural in origin. The following exception applies: Waters impounded by dams existing on January 1, 1996, which have pHs that exceed the criteria shall not be considered in violation of the standard if the Department determines that the exceedance would not occur without the impoundment and that all practicable measures have been taken to bring the pH in the impounded waters into compliance with the criteria;

(d) Bacteria standards:

(A) Numeric Criteria: Organisms of the coliform group commonly associated with fecal sources (MPN or equivalent membrane filtration using a representative number of samples) shall not exceed the criteria described in subparagraphs (i) and (ii) of this paragraph. Freshwaters:

(i) A 30-day log mean of 126 *E. coli* organisms per 100 ml, based on a minimum of five (5) samples;

(ii) No single sample shall exceed 406 *E. coli* organisms per 100 ml.

~~(B) Raw Sewage Prohibition: No sewage shall be discharged into or in any other manner be allowed to enter the waters of the State unless such sewage has been treated in a manner approved by the Department or otherwise allowed by these rules;~~

~~(C) Animal Waste: Runoff contaminated with domesticated animal wastes shall be minimized and treated to the maximum extent practicable before it is allowed to enter waters of the State;~~

~~(D) Effluent Limitations and Water Quality Limited Waterbodies: Effluent limitations to implement the criteria in this rule are found in OAR 340-041-0120(12) through (16). Implementation of the criteria in this rule in water quality limited waterbodies is described in OAR 340-041-0026(3)(a)(I) and OAR 340-041-0120(17).~~

~~(e) Bacterial pollution or other conditions deleterious to waters used for domestic purposes, livestock watering, irrigation, bathing, or shellfish propagation, or otherwise injurious to public health shall not be allowed;~~

~~(f) The liberation of dissolved gases, such as carbon dioxide, hydrogen sulfide, or other gases in sufficient quantities to cause objectionable odors or to be deleterious to fish or other aquatic life, navigation, recreation, or other reasonable uses made of such waters shall not be allowed;~~

~~(g) The development of fungi or other growths having a deleterious effect on stream bottoms, fish or other aquatic life, or which are injurious to health, recreation, or industry shall not be allowed;~~

~~(h) The creation of tastes or odors or toxic or other conditions that are deleterious to fish or other aquatic life or affect the potability of drinking water or the palatability of fish or shellfish shall not be allowed;~~

~~(i) The formation of appreciable bottom or sludge deposits or the formation of any organic or inorganic deposits deleterious to fish or other aquatic life or injurious to public health, recreation, or industry shall not be allowed;~~

~~(j) Objectionable discoloration, scum, oily sleek or floating solids, or coating of aquatic life with oil films shall not be allowed;~~

~~(k) Aesthetic conditions offensive to the human senses of sight, taste, smell, or touch shall not be allowed;~~

~~(l) Radioisotope concentrations shall not exceed maximum permissible concentrations (MPC's) in drinking water, edible fishes or shellfishes, wildlife, irrigated crops, livestock and dairy products, or pose an external radiation hazard;~~

~~(m) The concentration of total dissolved gas relative to atmospheric pressure at the point of sample collection shall not exceed 110 percent of saturation, except when stream flow~~

~~exceeds the ten-year, seven-day average flood. However, for Hatchery receiving waters and waters of less than two feet in depth, the concentration of total dissolved gas relative to atmospheric pressure at the point of sample collection shall not exceed 105 percent of saturation;~~

~~(n) Total Dissolved Solids: Guide concentrations listed below shall not be exceeded unless otherwise specifically authorized by DEQ upon such conditions as it may deem necessary to carry out the general intent of this plan and to protect the beneficial uses set forth in OAR 340-041-0682: 200.0 mg/l;~~

~~(o) Temperature: The changes adopted by the Commission on January 11, 1996, become effective July 1, 1996. Until that time, the requirements of this rule that were in effect on January 10, 1996, apply. The method for measuring the numeric temperature criteria specified in this rule is defined in OAR 340-041-0006(54):~~

~~(A) To accomplish the goals identified in OAR 340-041-0120(11), unless specifically allowed under a Department-approved surface water temperature management plan as required under OAR 340-041-0026(3)(a)(D), no measurable surface water temperature increase resulting from anthropogenic activities is allowed:~~

~~(i) In a basin for which salmonid fish rearing is a designated beneficial use, and in which surface water temperatures exceed 64.0°F (17.8°C);~~

~~(ii) In waters and periods of the year determined by the Department to support native salmonid spawning, egg incubation, and fry emergence from the egg and from the gravels in a basin which exceeds 55.0°F (12.8°C);~~

~~(iii) In waters determined by the Department to support or to be necessary to maintain the viability of native Oregon bull trout, when surface water temperatures exceed 50.0°F (10.0°C);~~

~~(iv) In waters determined by the Department to be ecologically significant cold-water refugia;~~

~~(v) In stream segments containing federally listed Threatened and Endangered species if the increase would impair the biological integrity of the Threatened and Endangered population;~~

~~(vi) In Oregon waters when the dissolved oxygen (DO) levels are within 0.5 mg/l or 10 percent saturation of the water column or intergravel DO criterion for a given stream reach or subbasin;~~

~~(vii) In natural lakes.~~

~~(B) An exceedance of the numeric criteria identified in subparagraphs (A)(i) through (iii) of this subsection will not be deemed a temperature standard violation if it occurs when~~

~~the air temperature during the warmest seven-day period of the year exceeds the 90th percentile of the seven-day average daily maximum air temperature calculated in a yearly series over the historic record. However, during such periods, the anthropogenic sources must still continue to comply with their surface water temperature management plans developed under OAR 340-041-0026(3)(a)(D);~~

~~(C) Any source may petition the Commission for an exception to subparagraphs (A)(i) through (vii) of this subsection for discharge above the identified criteria if:~~

~~(i) The source provides the necessary scientific information to describe how the designated beneficial uses would not be adversely impacted; or~~

~~(ii) A source is implementing all reasonable management practices or measures; its activity will not significantly affect the beneficial uses; and the environmental cost of treating the parameter to the level necessary to assure full protection would outweigh the risk to the resource.~~

~~(p) Toxic Substances:~~

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

~~(B) Levels of toxic substances shall not exceed the criteria listed in **Table 20** which were based on criteria established by EPA and published in **Quality Criteria for Water (1986),** unless otherwise noted;~~

~~(C) The criteria in paragraph (B) of this subsection shall apply unless data from scientifically valid studies demonstrate that the most sensitive designated beneficial uses will not be adversely affected by exceeding a criterion or that a more restrictive criterion is warranted to protect beneficial uses, as accepted by the Department on a site specific basis. Where no published EPA criteria exist for a toxic substance, public health advisories and other published scientific literature may be considered and used, if appropriate, to set guidance values;~~

~~(D) Bio-assessment studies such as laboratory bioassays or instream measurements of indigenous biological communities, shall be conducted, as the Department deems necessary, to monitor the toxicity of complex effluents, other suspected discharges or chemical substances without numeric criteria, to aquatic life. These studies, properly conducted in accordance with standard testing procedures, may be considered as scientifically valid data for the purposes of paragraph (C) of this subsection. If toxicity occurs, the Department shall evaluate and implement measures necessary to reduce toxicity on a case-by-case basis.~~

~~(3) Where the naturally occurring quality parameters of waters of the Walla Walla River Basin are outside the numerical limits of the above assigned water quality standards, the naturally occurring water quality shall be the standard. However, in such cases special restrictions, described in OAR 340-041-0026 (3)(a)(C)(iii), apply to discharges that affect dissolved oxygen.~~

~~(4) Mixing zones:~~

~~(a) The Department may allow a designated portion of a receiving water to serve as a zone of dilution for wastewaters and receiving waters to mix thoroughly and this zone will be defined as a mixing zone;~~

~~(b) The Department may suspend all or part of the water quality standards, or set less restrictive standards, in the defined mixing zone, provided that the following conditions are met:~~

~~(A) The water within the mixing zone shall be free of:~~

~~(i) Materials in concentrations that will cause acute toxicity to aquatic life as measured by a Department approved bioassay method. Acute toxicity is lethality to aquatic life as measured by a significant difference in lethal concentration between the control and 100 percent effluent in an acute bioassay test. Lethality in 100 percent effluent may be allowed due to ammonia and chlorine only when it is demonstrated on a case by case basis that immediate dilution of the effluent within the mixing zone reduces toxicity below lethal concentrations. The Department may on a case by case basis establish a zone of immediate dilution if appropriate for other parameters;~~

~~(ii) Materials that will settle to form objectionable deposits;~~

~~(iii) Floating debris, oil, scum, or other materials that cause nuisance conditions;~~

~~(iv) Substances in concentrations that produce deleterious amounts of fungal or bacterial growths.~~

~~(B) The water outside the boundary of the mixing zone shall:~~

~~(i) Be free of materials in concentrations that will cause chronic (sublethal) toxicity. Chronic toxicity is measured as the concentration that causes long term sublethal effects, such as significantly impaired growth or reproduction in aquatic organisms, during a testing period based on test species life cycle. Procedures and end points will be specified by the Department in wastewater discharge permits;~~

~~(ii) Meet all other water quality standards under normal annual low flow conditions.~~

~~(c) The limits of the mixing zone shall be described in the wastewater discharge permit. In determining the location, surface area, and volume of a mixing zone area, the~~

Department may use appropriate mixing zone guidelines to assess the biological, physical, and chemical character of receiving waters, and effluent, and the most appropriate placement of the outfall, to protect instream water quality, public health, and other beneficial uses. Based on receiving water and effluent characteristics, the Department shall define a mixing zone in the immediate area of a wastewater discharge to:

(A) Be as small as feasible;

(B) Avoid overlap with any other mixing zones to the extent possible and be less than the total stream width as necessary to allow passage of fish and other aquatic organisms;

(C) Minimize adverse effects on the indigenous biological community especially when species are present that warrant special protection for their economic importance, tribal significance, ecological uniqueness, or for other similar reasons as determined by the Department and does not block the free passage of aquatic life;

(D) Not threaten public health;

(E) Minimize adverse effects on other designated beneficial uses outside the mixing zone.

(d) The Department may request the applicant of a permitted discharge for which a mixing zone is required, to submit all information necessary to define a mixing zone, such as:

(A) Type of operation to be conducted;

(B) Characteristics of effluent flow rates and composition;

(C) Characteristics of low flows of receiving waters;

(D) Description of potential environmental effects;

(E) Proposed design for outfall structures.

(e) The Department may, as necessary, require mixing zone monitoring studies and/or bioassays to be conducted to evaluate water quality or biological status within and outside the mixing zone boundary;

(f) The Department may change mixing zone limits or require there location of an outfall if it determines that the water quality within the mixing zone adversely affects any existing beneficial uses in the receiving waters.

(g) **Alternate requirements for mixing zones**: For some existing or proposed discharges to some receiving streams, it may not be practicable to treat wastewater to meet instream water quality standards at the point of discharge or within a short distance from the point

~~of discharge. Some of these discharges could be allowed without impairing the overall ecological integrity of the receiving streams, or may provide an overall benefit to the receiving stream. This section specifies the conditions and circumstances under which a mixing zone may be allowed by the Department that extends beyond the immediate area around a discharge point, or that extends across a stream width. An alternate mixing zone may be approved if the applicant demonstrates to the Department's satisfaction that the discharge (A) creates an overall environmental benefit, or (B) is to a constructed water course, or (C) is insignificant. The three circumstances under which alternate mixing zones may be established are described further below.~~

~~(A) **Overall environmental benefit**.~~

~~(i) Qualifying for alternate mixing zone based on overall environmental benefit: In order to qualify for an alternate mixing zone based on a finding of overall environmental benefit, the discharger must demonstrate to the Department's satisfaction the following:~~

~~(I) That all practical strategies have been or will be implemented to minimize the pollutant loads in the effluent; and~~

~~(II) For proposed increased discharges, the current actual discharge and mixing zone does not meet the requirements of a standard mixing zone; and~~

~~(III) Either that, on balance, an environmental benefit would be lost if the discharge did not occur, or that the discharger is prepared to undertake other actions that will mitigate the effect of the discharge to an extent resulting in a net environmental benefit to the receiving stream.~~

~~(IV) For the purposes of this rule, the term "practical" shall include environmental impact, availability of alternatives, cost of alternatives, and other relevant factors.~~

~~(ii) Studies required and evaluation of studies: In order to demonstrate that, on balance, an environmental benefit will result from the discharge, the following information shall be provided by the applicant:~~

~~(I) The effluent flow and pollutant loads that are detected or expected in the effluent, by month, both average and expected worst case discharges. The parameters to be evaluated include at a minimum temperature, biochemical oxygen demand, total suspended solids, total dissolved solids, pH, settleable solids, e. coli bacteria, oil and grease, any pollutants listed in Table 20 of this rule division, and any pollutant for which the receiving stream has been designated by the Department as water quality limited; and~~

~~(II) Receiving stream flow, by month; and~~

~~(III) The expected impact of the discharge, by month, on the receiving stream for the entire proposed mixing zone area for all of the pollutants listed above. Included in this~~

~~analysis shall be a comparison of the receiving stream water quality with the discharge and without the discharge; and~~

~~(IV) A description of fish, other vertebrate populations, and macroinvertebrates that reside in or are likely to pass through the proposed mixing zone, including expected location (if known), species identification, stage of development, and time of year when their presence is expected. For existing discharges, the applicant shall provide the same information for similar nearby streams that are unaffected by wastewater discharges. In addition, any threatened or endangered species in the immediate vicinity of the receiving stream shall be identified; and~~

~~(V) The expected impact of the discharge on aquatic organisms and/or fish passage, including any expected negative impacts from the effluent attracting fish where that is not desirable; and~~

~~(VI) A description of the expected environmental benefits to be derived from the discharge or other mitigation measures proposed by the applicant, including but not limited to improvements in water quality, improvements in fish passage, and improvements in aquatic habitat. If the applicant proposes to undertake mitigation measures designed to provide environmental benefits (e.g., purchasing water or water conservation rights to increase stream flows or establishing stream cover to decrease temperature), the applicant shall describe the mitigation measures in detail, including a description of the steps it will take to ensure that the benefits of the mitigation measures are attained and are not lost or diminished over time.~~

~~(VII) Some or all of the above study requirements may be waived by the Department, if the Department determines that the information is not needed. In the event that the Department does waive some or all of the above study requirements, the basis for waiving the requirements will be included in the permit evaluation report upon the next permit renewal or modification relating to the mixing zone.~~

~~(VIII) Upon request of the Department, the applicant shall conduct additional studies to further evaluate the impact of the discharge, which may include whole effluent toxicity testing, stream surveys for water quality, stream surveys for fish and other aquatic organisms, or other studies as specified by the Depart ment.~~

~~(IX) In evaluating whether an existing or proposed increase in an existing discharge would result in a net environmental benefit, the applicant shall use the native biological community in a nearby, similar stream that is unaffected by wastewater discharges. The Department shall consider all information generated as required in this rule and other relevant information. The evaluation shall consider benefits to the native aquatic biological community only.~~

~~(iii) Permit conditions: Upon determination by the Depart ment that the discharge and mitigation measures (if any) will likely result in an overall environmental benefit, the Department shall include appropriate permit conditions to insure that the environmental~~

~~benefits are attained and continue. Such permit conditions may include but not be limited to:~~

~~(I) Maximum allowed effluent flows and pollutant loads;~~

~~(II) Requirements to maintain land ownership, easements, contracts, or other legally binding measures necessary to assure that mitigation measures, if any, remain in place and effective;~~

~~(III) Special operating conditions;~~

~~(IV) Monitoring and reporting requirements; and~~

~~(V) Studies to evaluate the effectiveness of mitigation measures.~~

~~(B) **Constructed water course**: A mixing zone may be extended through a constructed water course and into a natural water course. For the purposes of this rule, a constructed water course is one that was constructed for irrigation, site drainage, or wastewater conveyance, and has the following characteristics:~~

~~(i) Irrigation flows, stormwater runoff, or wastewater flows have replaced natural streamflow regimes; and~~

~~(ii) The channel form is greatly simplified in lengthwise and cross sectional profiles; and~~

~~(iii) Physical and biological characteristics that differ significantly from nearby natural streams; and~~

~~(iv) A much lower diversity of aquatic species than found in nearby natural streams; and~~

~~(v) If the constructed water course is an irrigation canal, then it must have effective fish screens in place to qualify as a constructed water course.~~

~~(C) **Insignificant discharges**: Insignificant discharges are those that either by volume, pollutant characteristics, and/or temporary nature are expected to have little if any impact on beneficial uses in the receiving stream, and for which the extensive evaluations required for discharges to smaller streams are not warranted. For the purposes of this rule, only filter backwash discharges and underground storage tank cleanups are considered insignificant discharges.~~

~~(D) **Other requirements for alternate mixing zones**: The following are additional requirements for dischargers requesting an alternate mixing zone:~~

~~(i) Most discharges that qualify for an alternate mixing zone will extend through the receiving stream until a larger stream is reached, where thorough mixing of the effluent can occur and where the edge of the allowed mixing zone will be located. The portion of~~

the mixing zone in the larger stream must meet all of the requirements of the standard mixing zone, including not blocking aquatic life passage; and

(ii) An alternate mixing zone shall not be granted if a municipal drinking water intake is located within the proposed mixing zone, and the discharge has a significant adverse impact on the drinking water source; and

(iii) The discharge will not pose an unreasonable hazard to the environment or pose a significant health risk, considering the likely pathways of exposure; and

(iv) The discharge shall not be acutely toxic to organisms passing through the mixing zone; and

(v) An alternate mixing zone shall not be granted if the substances discharged may accumulate in the sediments or bioaccumulate in aquatic life or wildlife to levels that adversely affect public health, safety, or welfare; aquatic life; wildlife; or other designated beneficial uses; and

(vi) In the event that the receiving stream is water quality limited, the requirements for discharges to water quality limited streams supersede this rule.

(5) Testing methods: The analytical testing methods for determining compliance with the water quality standards contained in this rule shall be in accordance with the most recent edition of **Standard Methods for the Examination of Water and Waste Water published jointly by the American Public Health Association, American Water Works Association, and Water Pollution Control Federation**, unless the Department has published an applicable superseding method, in which case testing shall be in accordance with the superseding method; provided, however, that testing in accordance with an alternative method shall comply with this rule if the Department has published the method or has approved the method in writing.

[ED. NOTE: The Table(s) referenced in this rule is not printed in the OAR Compilation. Copies are available from the agency.]

[Publications: The publication(s) referred to or incorporated by reference in this rule are available from the office of the agency.]

Stat. Auth.: ORS 468.735, ORS 468B.035 & ORS 468B.048
Stats. Implemented: ORS 468B.048
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 1-1980, f. & ef. 1-9-80; DEQ 18-1987, f. & ef. 9-4-87; DEQ 14-1991, f. & cert. ef. 8-13-91; DEQ 17-1992, f. & cert. ef. 8-7-92 (and corrected 8-13-92); DEQ 21-1995(Temp), f. & cert. ef. 9-21-95; DEQ 5-1996, f. & cert. ef. 3-7-96; DEQ 22-1997, f. & cert. ef. 10-24-97

340-041-0695

Minimum Design Criteria for Treatment and Control of Wastes

Subject to the implementation program set forth in OAR 340-041-0120, prior to discharge of any wastes from any new or modified facility to any waters of the Walla Walla River Basin, such wastes shall be treated and controlled in facilities designed in accordance with the following minimum criteria. (In designing treatment facilities, average conditions and a normal range of variability are generally used in establishing design criteria. A facility once completed and placed in operation should operate at or near the design limit most of the time but may operate below the design criteria limit at times due to variables which are unpredictable or uncontrollable. This is particularly true for biological treatment facilities. The actual operating limits are intended to be established by permit pursuant to ORS 468.740 and recognize that the actual performance level may at times be less than the design criteria).

(1) Sewage wastes:

(a) During periods of low stream flows (approximately April 1 to October 31): Treatment resulting in monthly average effluent concentrations not to exceed 20 mg/l of BOD and 20 mg/l of suspended solids or equivalent control;

(b) During the period of high stream flows (approximately November 1 to March 31): A minimum of secondary treatment or equivalent control and unless otherwise specifically authorized by the Department, operation of all waste treatment and control facilities at maximum practicable efficiency and effectiveness so as to minimize waste discharges to public waters;

(c) Effluent BOD concentrations in mg/l, divided by the dilution factor (ratio of receiving stream flow to effluent flow) shall not exceed one unless otherwise approved by the EQC;

(d) Sewage wastes shall be disinfected, after treatment, equivalent to thorough mixing with sufficient chlorine to provide a residual of at least 1 part per million after 60 minutes of contact time unless otherwise specifically authorized by permit;

(e) Positive protection shall be provided to prevent bypassing raw or inadequately treated sewage to public waters unless otherwise approved by the Department where elimination of inflow and infiltration would be necessary but not presently practicable;

(f) More stringent waste treatment and control requirements may be imposed where special conditions may require.

(2) Industrial wastes:

(a) After maximum practicable inplant control, a minimum of secondary treatment or equivalent control (reduction of suspended solids and organic material where present in

~~significant quantities, effective disinfection where bacterial organisms of public health significance are present, and control of toxic or other deleterious substances);~~

~~(b) Specific industrial waste treatment requirements shall be determined on an individual basis in accordance with the provisions of this plan, applicable federal requirements, and the following:~~

~~(A) The uses which are or may likely be made of the receiving stream;~~

~~(B) The size and nature of flow of the receiving stream;~~

~~(C) The quantity and quality of wastes to be treated; and~~

~~(D) The presence or absence of other sources of pollution on the same watershed.~~

~~(c) Where industrial, commercial, or agricultural effluents contain significant quantities of potentially toxic elements, treatment requirements shall be determined utilizing appropriate bioassays;~~

~~(d) Industrial cooling waters containing significant heat loads shall be subjected to offstream cooling or heat recovery prior to discharge to public waters;~~

~~(e) Positive protection shall be provided to prevent bypassing of raw or inadequately treated industrial wastes to any public waters;~~

~~(f) Facilities shall be provided to prevent and contain spills of potentially toxic or hazardous materials and a positive program for containment and cleanup of such spills should they occur shall be developed and maintained.~~

~~Stat. Auth.: ORS 468~~
~~Stats. Implemented: ORS 468B.030~~
~~Hist.: DEQ 128, f. & ef. 1-21-77~~

~~Grande Ronde Basin~~

~~340-041-0722~~

~~Beneficial Water Uses to be Protected~~

~~Water quality in the Grande Ronde River Basin (see **Figures 1** and **14**) shall be managed to protect the recognized beneficial uses as indicated in **Table 13**.~~

~~[ED. NOTE: The Figure(s) and Table referenced in this rule are not printed in the OAR Compilation. Copies are available from the agency.]~~

Stat. Auth.: ORS 468
Stats. Implemented: ORS 468B.048
Hist.: DEQ 128, f. & ef. 1-21-77

340-041-0725

Water Quality Standards Not to be Exceeded (To be Adopted Pursuant to ORS 468.735 and Enforceable Pursuant to ORS 468.720, 468.990, and 468.992)

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

(2) No wastes shall be discharged and no activities shall be conducted which either alone or in combination with other wastes or activities will cause violation of the following standards in the waters of the Grande Ronde River Basin:

(a) Dissolved oxygen (DO): The changes adopted by the Commission on January 11, 1996, become effective July 1, 1996. Until that time, the requirements of this rule that were in effect on January 10, 1996, apply:

(A) For waterbodies identified by the Department as providing salmonid spawning, during the periods from spawning until fry emergence from the gravels, the following criteria apply:

(i) The dissolved oxygen shall not be less than 11.0 mg/l. However, if the minimum intergravel dissolved oxygen, measured as a spatial median, is 8.0 mg/l or greater, then the DO criterion is 9.0 mg/l;

(ii) Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 11.0 mg/l or 9.0 mg/l criteria, dissolved oxygen levels shall not be less than 95 percent of saturation.

(B) For waterbodies identified by the Department as providing salmonid spawning during the period from spawning until fry emergence from the gravels, the spatial median intergravel dissolved oxygen concentration shall not fall below 6.0 mg/l;

(C) A spatial median of 8.0 mg/l intergravel dissolved oxygen level shall be used to identify areas where the recognized beneficial use of salmonid spawning, egg incubation and fry emergence from the egg and from the gravels may be impaired and therefore require action by the Department. Upon determination that the spatial median intergravel dissolved oxygen concentration is below 8.0 mg/l, the Department may, in accordance with priorities established by the Department for evaluating water quality impaired

~~waterbodies, determine whether to list the waterbody as water quality limited under the Section 303(d) of the Clean Water Act, initiate pollution control strategies as warranted, and where needed cooperate with appropriate designated management agencies to evaluate and implement necessary best management practices for nonpoint source pollution control;~~

~~(D) For waterbodies identified by the Department as providing cold water aquatic life, the dissolved oxygen shall not be less than 8.0 mg/l as an absolute minimum. Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 8.0 mg/l, dissolved oxygen shall not be less than 90 percent of saturation. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 8.0 mg/l as a 30 day mean minimum, 6.5 mg/l as a seven day minimum mean, and shall not fall below 6.0 mg/l as an absolute minimum (**Table 21**);~~

~~(E) For waterbodies identified by the Department as providing cool water aquatic life, the dissolved oxygen shall not be less than 6.5 mg/l as an absolute minimum. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 6.5 mg/l as a 30 day mean minimum, 5.0 mg/l as a seven day minimum mean, and shall not fall below 4.0 mg/l as an absolute minimum (**Table 21**);~~

~~(F) For waterbodies identified by the Department as providing warm water aquatic life, the dissolved oxygen shall not be less than 5.5 mg/l as an absolute minimum. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 5.5 mg/l as a 30 day mean minimum, and shall not fall below 4.0 mg/l as an absolute minimum (**Table 21**);~~

~~(b) Temperature: The changes adopted by the Commission on January 11, 1996, become effective July 1, 1996. Until that time, the requirements of this rule that were in effect on January 10, 1996, apply. The method for measuring the numeric temperature criteria specified in this rule is defined in OAR 340 041 0006(54):~~

~~(A) To accomplish the goals identified in OAR 340 041 0120(11), unless specifically allowed under a Department approved surface water temperature management plan as required under OAR 340 041 0026(3)(a)(D), no measurable surface water temperature increase resulting from anthropogenic activities is allowed:~~

~~(i) In a basin for which salmonid fish rearing is a designated beneficial use, and in which surface water temperatures exceed 64.0°F (17.8°C);~~

~~(ii) In waters and periods of the year determined by the Department to support native salmonid spawning, egg incubation, and fry emergence from the egg and from the gravels in a basin which exceeds 55.0°F (12.8°C);~~

~~(iii) In waters determined by the Department to support or to be necessary to maintain the viability of native Oregon bull trout, when surface water temperatures exceed 50.0°F (10.0°C);~~

~~(iv) In waters determined by the Department to be ecologically significant cold-water refugia;~~

~~(v) In stream segments containing federally listed Threatened and Endangered species if the increase would impair the biological integrity of the Threatened and Endangered population;~~

~~(vi) In Oregon waters when the dissolved oxygen (DO) levels are within 0.5 mg/l or 10 percent saturation of the water column or intergravel DO criterion for a given stream reach or subbasin;~~

~~(vii) In natural lakes.~~

~~(B) An exceedance of the numeric criteria identified in subparagraphs (A)(i) through (iii) of this subsection will not be deemed a temperature standard violation if it occurs when the air temperature during the warmest seven-day period of the year exceeds the 90th percentile of the seven-day average daily maximum air temperature calculated in a yearly series over the historic record. However, during such periods, the anthropogenic sources must still continue to comply with their surface water temperature management plans developed under OAR 340-041-0026(3)(a)(D);~~

~~(C) Any source may petition the Commission for an exception to subparagraphs (A)(i) through (vii) of this subsection for discharge above the identified criteria if:~~

~~(i) The source provides the necessary scientific information to describe how the designated beneficial uses would not be adversely impacted; or~~

~~(ii) A source is implementing all reasonable management practices or measures; its activity will not significantly affect the beneficial uses; and the environmental cost of treating the parameter to the level necessary to assure full protection would outweigh the risk to the resource.~~

~~(c) Turbidity (Nephelometric Turbidity Units, NTU): No more than a ten percent cumulative increase in natural stream turbidities shall be allowed, as measured relative to a control point immediately upstream of the turbidity causing activity. However, limited duration activities necessary to address an emergency or to accommodate essential dredging, construction or other legitimate activities and which cause the standard to be exceeded may be authorized provided all practicable turbidity control techniques have been applied and one of the following has been granted:~~

~~(A) Emergency activities: Approval coordinated by DEQ with the Department of Fish and Wildlife under conditions they may prescribe to accommodate response to emergencies or to protect public health and welfare;~~

~~(B) Dredging, Construction or other Legitimate Activities: Permit or certification authorized under terms of Section 401 or 404 (Permits and Licenses, Federal Water Pollution Control Act) or OAR 141-085-0100 et seq. (Removal and Fill Permits, Division of State Lands), with limitations and conditions governing the activity set forth in the permit or certificate.~~

~~(d) pH (hydrogen ion concentration): pH values shall not fall outside the ranges identified in paragraphs (A) and (B) of this subsection. The following exception applies: Waters impounded by dams existing on January 1, 1996, which have pHs that exceed the criteria shall not be considered in violation of the standard if the Department determines that the exceedance would not occur without the impoundment and that all practicable measures have been taken to bring the pH in the impounded waters into compliance with the criteria:~~

~~(A) Mainstem Snake River (river miles 176 to 260): 7.0 – 9.0;~~

~~(B) All other Basin streams: 6.5 – 9.0. When greater than 25 percent of ambient measurements taken between June and September are greater than pH 8.7, and as resources are available according to priorities set by the Department, the Department shall determine whether the values higher than 8.7 are anthropogenic or natural in origin.~~

~~(e) Bacteria standards:~~

~~(A) Numeric Criteria: Organisms of the coliform group commonly associated with fecal sources (MPN or equivalent membrane filtration using a representative number of samples) shall not exceed the criteria described in subparagraphs (i) and (ii) of this paragraph. Freshwaters:~~

~~(i) A 30-day log mean of 126 *E. coli* organisms per 100 ml, based on a minimum of five (5) samples;~~

~~(ii) No single sample shall exceed 406 *E. coli* organisms per 100 ml.~~

~~(B) Raw Sewage Prohibition: No sewage shall be discharged into or in any other manner be allowed to enter the waters of the State unless such sewage has been treated in a manner approved by the Department or otherwise allowed by these rules;~~

~~(C) Animal Waste: Runoff contaminated with domesticated animal wastes shall be minimized and treated to the maximum extent practicable before it is allowed to enter waters of the State;~~

~~(D) Effluent Limitations and Water Quality Limited Waterbodies: Effluent limitations to implement the criteria in this rule are found in OAR 340-041-0120(12) through (16). Implementation of the criteria in this rule in water quality limited waterbodies is described in OAR 340-041-0026(3)(a)(I) and OAR 340-041-0120(17).~~

~~(f) Bacterial pollution or other conditions deleterious to waters used for domestic purposes, livestock watering, irrigation, bathing, or otherwise injurious to public health shall not be allowed;~~

~~(g) The liberation of dissolved gases, such as carbon dioxide, hydrogen sulfide, or other gases, in sufficient quantities to cause objectionable odors or to be deleterious to fish or other aquatic life, navigation, recreation, or other reasonable uses made of such waters shall not be allowed;~~

~~(h) The development of fungi or other growths having a deleterious effect on stream bottoms, fish or other aquatic life, or which are injurious to health, recreation, or industry shall not be allowed;~~

~~(i) The creation of tastes or odors or toxic or other conditions that are deleterious to fish or other aquatic life or affect the potability of drinking water or the palatability of fish or shellfish shall not be allowed;~~

~~(j) The formation of appreciable bottom or sludge deposits or the formation of any organic or inorganic deposits deleterious to fish or other aquatic life or injurious to public health, recreation, or industry shall not be allowed;~~

~~(k) Objectionable discoloration, scum, oily sleek or floating solids, or coating of aquatic life with oil films shall not be allowed;~~

~~(l) Aesthetic conditions offensive to the human senses of sight, taste, smell, or touch shall not be allowed;~~

~~(m) Radioisotope concentrations shall not exceed maximum permissible concentrations (MPC's) in drinking water, edible fishes or shellfishes, wildlife, irrigated crops, livestock and dairy products, or pose an external radiation hazard;~~

~~(n) The concentration of total dissolved gas relative to atmospheric pressure at the point of sample collection shall not exceed 110 percent of saturation, except when stream flow exceeds the ten-year, seven-day average flood. However, for Hatchery receiving waters and waters of less than two feet in depth, the concentration of total dissolved gas relative to atmospheric pressure at the point of sample collection shall not exceed 105 percent of saturation;~~

~~(o) Total Dissolved Solids: Guide concentrations listed below shall not be exceeded unless otherwise specifically authorized by DEQ upon such conditions as it may deem~~

~~necessary to carry out the general intent of this plan and to protect the beneficial uses set forth in OAR 340-041-0722:~~

~~(A) Mainstem Grande Ronde River—200.0 mg/l;~~

~~(B) Mainstem Snake River—750.0 mg/l.~~

~~(p) Toxic Substances:~~

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

~~(B) Levels of toxic substances shall not exceed the criteria listed in **Table 20** which were based on criteria established by EPA and published in **Quality Criteria for Water (1986)**, unless otherwise noted;~~

~~(C) The criteria in paragraph (B) of this subsection shall apply unless data from scientifically valid studies demonstrate that the most sensitive designated beneficial uses will not be adversely affected by exceeding a criterion or that a more restrictive criterion is warranted to protect beneficial uses, as accepted by the Department on a site specific basis. Where no published EPA criteria exist for a toxic substance, public health advisories and other published scientific literature may be considered and used, if appropriate, to set guidance values;~~

~~(D) Bio-assessment studies such as laboratory bioassays or instream measurements of indigenous biological communities, shall be conducted, as the Department deems necessary, to monitor the toxicity of complex effluents, other suspected discharges or chemical substances without numeric criteria, to aquatic life. These studies, properly conducted in accordance with standard testing procedures, may be considered as scientifically valid data for the purposes of paragraph (C) of this subsection. If toxicity occurs, the Department shall evaluate and implement measures necessary to reduce toxicity on a case-by-case basis.~~

~~(3) Where the naturally occurring quality parameters of waters of the Grande Ronde River Basin are outside the numerical limits of the above assigned water quality standards, the naturally occurring water quality shall be the standard. However, in such cases special restrictions, described in OAR 340-041-0026(3)(a)(C)(iii), apply to discharges that affect dissolved oxygen.~~

~~(4) Mixing zones:~~

~~(a) The Department may allow a designated portion of a receiving water to serve as a zone of dilution for wastewaters and receiving waters to mix thoroughly and this zone will be defined as a mixing zone;~~

~~(b) The Department may suspend all or part of the water quality standards, or set less restrictive standards, in the defined mixing zone, provided that the following conditions are met:~~

~~(A) The water within the mixing zone shall be free of:~~

~~(i) Materials in concentrations that will cause acute toxicity to aquatic life as measured by a Department approved bioassay method. Acute toxicity is lethality to aquatic life as measured by a significant difference in lethal concentration between the control and 100 percent effluent in an acute bioassay test. Lethality in 100 percent effluent may be allowed due to ammonia and chlorine only when it is demonstrated on a case-by-case basis that immediate dilution of the effluent within the mixing zone reduces toxicity below lethal concentrations. The Department may on a case-by-case basis establish a zone of immediate dilution if appropriate for other parameters;~~

~~(ii) Materials that will settle to form objectionable deposits;~~

~~(iii) Floating debris, oil, scum, or other materials that cause nuisance conditions;~~

~~(iv) Substances in concentrations that produce deleterious amounts of fungal or bacterial growths.~~

~~(B) The water outside the boundary of the mixing zone shall:~~

~~(i) Be free of materials in concentrations that will cause chronic (sublethal) toxicity. Chronic toxicity is measured as the concentration that causes long-term sublethal effects, such as significantly impaired growth or reproduction in aquatic organisms, during a testing period based on test species life cycle. Procedures and end points will be specified by the Department in wastewater discharge permits;~~

~~(ii) Meet all other water quality standards under normal annual low flow conditions.~~

~~(c) The limits of the mixing zone shall be described in the wastewater discharge permit. In determining the location, surface area, and volume of a mixing zone area, the Department may use appropriate mixing zone guidelines to assess the biological, physical, and chemical character of receiving waters, and effluent, and the most appropriate placement of the outfall, to protect instream water quality, public health, and other beneficial uses. Based on receiving water and effluent characteristics, the Department shall define a mixing zone in the immediate area of a wastewater discharge to:~~

~~(A) Be as small as feasible;~~

~~(B) Avoid overlap with any other mixing zones to the extent possible and be less than the total stream width as necessary to allow passage of fish and other aquatic organisms;~~

~~(C) Minimize adverse effects on the indigenous biological community especially when species are present that warrant special protection for their economic importance, tribal significance, ecological uniqueness, or for other similar reasons as determined by the Department and does not block the free passage of aquatic life;~~

~~(D) Not threaten public health;~~

~~(E) Minimize adverse effects on other designated beneficial uses outside the mixing zone.~~

~~(d) The Department may request the applicant of a permitted discharge for which a mixing zone is required, to submit all information necessary to define a mixing zone, such as:~~

~~(A) Type of operation to be conducted;~~

~~(B) Characteristics of effluent flow rates and composition;~~

~~(C) Characteristics of low flows of receiving waters;~~

~~(D) Description of potential environmental effects;~~

~~(E) Proposed design for outfall structures.~~

~~(e) The Department may, as necessary, require mixing zone monitoring studies and/or bioassays to be conducted to evaluate water quality or biological status within and outside the mixing zone boundary;~~

~~(f) The Department may change mixing zone limits or require the relocation of an outfall if it determines that the water quality within the mixing zone adversely affects any existing beneficial uses in the receiving waters.~~

~~(g) **Alternate requirements for mixing zones**: For some existing or proposed discharges to some receiving streams, it may not be practicable to treat wastewater to meet instream water quality standards at the point of discharge or within a short distance from the point of discharge. Some of these discharges could be allowed without impairing the overall ecological integrity of the receiving streams, or may provide an overall benefit to the receiving stream. This section specifies the conditions and circumstances under which a mixing zone may be allowed by the Department that extends beyond the immediate area around a discharge point, or that extends across a stream width. An alternate mixing zone may be approved if the applicant demonstrates to the Department's satisfaction that the discharge (A) creates an overall environmental benefit, or (B) is to a constructed water course, or (C) is insignificant. The three circumstances under which alternate mixing zones may be established are described further below.~~

~~(A) **Overall environmental benefit**.~~

~~(i) Qualifying for alternate mixing zone based on overall environmental benefit: In order to qualify for an alternate mixing zone based on a finding of overall environmental benefit, the discharger must demonstrate to the Department's satisfaction the following:~~

~~(I) That all practical strategies have been or will be implemented to minimize the pollutant loads in the effluent; and~~

~~(II) For proposed increased discharges, the current actual discharge and mixing zone does not meet the requirements of a standard mixing zone; and~~

~~(III) Either that, on balance, an environmental benefit would be lost if the discharge did not occur, or that the discharger is prepared to undertake other actions that will mitigate the effect of the discharge to an extent resulting in a net environmental benefit to the receiving stream.~~

~~(IV) For the purposes of this rule, the term "practical" shall include environmental impact, availability of alternatives, cost of alternatives, and other relevant factors.~~

~~(ii) Studies required and evaluation of studies: In order to demonstrate that, on balance, an environmental benefit will result from the discharge, the following information shall be provided by the applicant:~~

~~(I) The effluent flow and pollutant loads that are detected or expected in the effluent, by month, both average and expected worst case discharges. The parameters to be evaluated include at a minimum temperature, biochemical oxygen demand, total suspended solids, total dissolved solids, pH, settleable solids, e. coli bacteria, oil and grease, any pollutants listed in Table 20 of this rule division, and any pollutant for which the receiving stream has been designated by the Department as water quality limited; and~~

~~(II) Receiving stream flow, by month; and~~

~~(III) The expected impact of the discharge, by month, on the receiving stream for the entire proposed mixing zone area for all of the pollutants listed above. Included in this analysis shall be a comparison of the receiving stream water quality with the discharge and without the discharge; and~~

~~(IV) A description of fish, other vertebrate populations, and macroinvertebrates that reside in or are likely to pass through the proposed mixing zone, including expected location (if known), species identification, stage of development, and time of year when their presence is expected. For existing discharges, the applicant shall provide the same information for similar nearby streams that are unaffected by wastewater discharges. In addition, any threatened or endangered species in the immediate vicinity of the receiving stream shall be identified; and~~

(V) The expected impact of the discharge on aquatic organisms and/or fish passage, including any expected negative impacts from the effluent attracting fish where that is not desirable; and

(VI) A description of the expected environmental benefits to be derived from the discharge or other mitigation measures proposed by the applicant, including but not limited to improvements in water quality, improvements in fish passage, and improvements in aquatic habitat. If the applicant proposes to undertake mitigation measures designed to provide environmental benefits (e.g., purchasing water or water conservation rights to increase stream flows or establishing stream cover to decrease temperature), the applicant shall describe the mitigation measures in detail, including a description of the steps it will take to ensure that the benefits of the mitigation measures are attained and are not lost or diminished over time.

(VII) Some or all of the above study requirements may be waived by the Department, if the Department determines that the information is not needed. In the event that the Department does waive some or all of the above study requirements, the basis for waiving the requirements will be included in the permit evaluation report upon the next permit renewal or modification relating to the mixing zone.

(VIII) Upon request of the Department, the applicant shall conduct additional studies to further evaluate the impact of the discharge, which may include whole effluent toxicity testing, stream surveys for water quality, stream surveys for fish and other aquatic organisms, or other studies as specified by the Department.

(IX) In evaluating whether an existing or proposed increase in an existing discharge would result in a net environmental benefit, the applicant shall use the native biological community in a nearby, similar stream that is unaffected by wastewater discharges. The Department shall consider all information generated as required in this rule and other relevant information. The evaluation shall consider benefits to the native aquatic biological community only.

(iii) Permit conditions: Upon determination by the Department that the discharge and mitigation measures (if any) will likely result in an overall environmental benefit, the Department shall include appropriate permit conditions to insure that the environmental benefits are attained and continue. Such permit conditions may include but not be limited to:

(I) Maximum allowed effluent flows and pollutant loads;

(II) Requirements to maintain land ownership, easements, contracts, or other legally binding measures necessary to assure that mitigation measures, if any, remain in place and effective;

(III) Special operating conditions;

(IV) Monitoring and reporting requirements; and

(V) Studies to evaluate the effectiveness of mitigation measures.

(B) **Constructed water course**: A mixing zone may be extended through a constructed water course and into a natural water course. For the purposes of this rule, a constructed water course is one that was constructed for irrigation, site drainage, or wastewater conveyance, and has the following characteristics:

(i) Irrigation flows, stormwater runoff, or wastewater flows have replaced natural streamflow regimes; and

(ii) The channel form is greatly simplified in lengthwise and cross-sectional profiles; and

(iii) Physical and biological characteristics that differ significantly from nearby natural streams; and

(iv) A much lower diversity of aquatic species than found in nearby natural streams; and

(v) If the constructed water course is an irrigation canal, then it must have effective fish screens in place to qualify as a constructed water course.

(C) **Insignificant discharges**: Insignificant discharges are those that either by volume, pollutant characteristics, and/or temporary nature are expected to have little if any impact on beneficial uses in the receiving stream, and for which the extensive evaluations required for discharges to smaller streams are not warranted. For the purposes of this rule, only filter backwash discharges and underground storage tank cleanups are considered insignificant discharges.

(D) **Other requirements for alternate mixing zones**: The following are additional requirements for dischargers requesting an alternate mixing zone:

(i) Most discharges that qualify for an alternate mixing zone will extend through the receiving stream until a larger stream is reached, where thorough mixing of the effluent can occur and where the edge of the allowed mixing zone will be located. The portion of the mixing zone in the larger stream must meet all of the requirements of the standard mixing zone, including not blocking aquatic life passage; and

(ii) An alternate mixing zone shall not be granted if a municipal drinking water intake is located within the proposed mixing zone, and the discharge has a significant adverse impact on the drinking water source; and

(iii) The discharge will not pose an unreasonable hazard to the environment or pose a significant health risk, considering the likely pathways of exposure; and

(iv) The discharge shall not be acutely toxic to organisms passing through the mixing zone; and

(v) An alternate mixing zone shall not be granted if the substances discharged may accumulate in the sediments or bioaccumulate in aquatic life or wildlife to levels that adversely affect public health, safety, or welfare; aquatic life; wildlife; or other designated beneficial uses; and

(vi) In the event that the receiving stream is water quality limited, the requirements for discharges to water quality limited streams supersede this rule.

(5) Testing methods: The analytical testing methods for determining compliance with the water quality standards contained in this rule shall be in accordance with the most recent edition of **Standard Methods for the Examination of Water and Waste Water published jointly by the American Public Health Association, American Water Works Association, and Water Pollution Control Federation,** unless the Department has published an applicable superseding method, in which case testing shall be in accordance with the superseding method; provided, however, that testing in accordance with an alternative method shall comply with this rule if the Department has published the method or has approved the method in writing.

[ED. NOTE: The Table(s) referenced in this rule is not printed in the OAR Compilation. Copies are available from the agency.]

[Publications: The publication(s) referred to or incorporated by reference in this rule are available from the office of the agency.]

Stat. Auth.: ORS 468.735, ORS 468B.035 & ORS 468B.048
Stats. Implemented: ORS 468B.048
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 1-1980, f. & ef. 1-9-80; DEQ 18-1987, f. & ef. 9-4-87; DEQ 14-1991, f. & cert. ef. 8-13-91; DEQ 17-1992, f. & cert. ef. 8-7-92 (and corrected 8-13-92); DEQ 21-1995(Temp), f. & cert. ef. 9-21-95; DEQ 5-1996, f. & cert. ef. 3-7-96; DEQ 22-1997, f. & cert. ef. 10-24-97

340-041-0735

Minimum Design Criteria for Treatment and Control of Wastes

Subject to the implementation program set forth in OAR 340-041-0120, prior to discharge of any wastes from any new or modified facility to any waters of the Grande Ronde River Basin, such wastes shall be treated and controlled in facilities designed in accordance with the following minimum criteria (In designing treatment facilities, average conditions and a normal range of variability are generally used in establishing design criteria. A facility once completed and placed in operation should operate at or near the design limit most of the time but may operate below the design criteria limit at times due to variables which are unpredictable or uncontrollable. This is particularly true

~~for biological treatment facilities. The actual operating limits are intended to be established by permit pursuant to ORS 468.740 and recognize that the actual performance level may at times be less than the design criteria).~~

~~(1) Sewage wastes:~~

~~(a) During periods of low stream flows (approximately June 1 to October 31): Treatment resulting in monthly average effluent concentrations not to exceed 20 mg/l of BOD and 20 mg/l of suspended solids or equivalent control;~~

~~(b) During the period of high stream flows (approximately November 1 to May 31): A minimum of secondary treatment or equivalent control and unless otherwise specifically authorized by the Department, operation of all waste treatment and control facilities at maximum practicable efficiency and effectiveness so as to minimize waste discharges to public waters;~~

~~(c) Effluent BOD concentrations in mg/l, divided by the dilution factor (ratio of receiving stream flow to effluent flow) shall not exceed one unless otherwise approved by the EQC;~~

~~(d) Sewage wastes shall be disinfected, after treatment, equivalent to thorough mixing with sufficient chlorine to provide a residual of at least 1 part per million after 60 minutes of contact time unless otherwise specifically authorized by permit;~~

~~(e) Positive protection shall be provided to prevent bypassing raw or inadequately treated sewage to public waters unless otherwise approved by the Department where elimination of inflow and infiltration would be necessary but not presently practicable;~~

~~(f) More stringent waste treatment and control requirements may be imposed where special conditions may require.~~

~~(2) Industrial wastes:~~

~~(a) After maximum practicable inplant control, a minimum of secondary treatment or equivalent control (reduction of suspended solids and organic material where present in significant quantities, effective disinfection where bacterial organisms of public health significance are present, and control of toxic or other deleterious substances);~~

~~(b) Specific industrial waste treatment requirements shall be determined on an individual basis in accordance with the provisions of this plan, applicable federal requirements, and the following:~~

~~(A) The uses which are or may likely be made of the receiving stream;~~

~~(B) The size and nature of flow of the receiving stream;~~

(C) The quantity and quality of wastes to be treated; and

(D) The presence or absence of other sources of pollution on the same watershed.

(c) Where industrial, commercial, or agricultural effluents contain significant quantities of potentially toxic elements, treatment requirements shall be determined utilizing appropriate bioassays;

(d) Industrial cooling waters containing significant heat loads shall be subjected to offstream cooling or heat recovery prior to discharge to public waters;

(e) Positive protection shall be provided to prevent bypassing of raw or inadequately treated industrial wastes to any public waters;

(f) Facilities shall be provided to prevent and contain spills of potentially toxic or hazardous materials and a positive program for containment and cleanup of such spills should they occur shall be developed and maintained.

Stat. Auth.: ORS 468
Stats. Implemented: ORS 468B.030
Hist.: DEQ 128, f. & ef. 1-21-77

340-041-0745

Special Policies and Guidelines

(1) This rule establishes special policies and requirements for portions of Catherine Creek and the Grande Ronde River. These waterbodies are currently listed as water quality limited and these rules are intended to bring the waterbodies into compliance with standards for dissolved oxygen, pH, temperature, and bacteria. The rule provides for modification of waste water control facility plans, development of water quality management plans, and establishment of instream concentration limits. These measures are intended to control the growth of periphyton that is contributing to exceedances of the instream water quality standards for pH and dissolved oxygen. The growth of periphyton is also affected by other factors such as flow, temperature and sunlight.

(2) This rule applies to Catherine Creek from the City of Union to the Grande Ronde River (and all tributaries that enter this segment of the creek) and the Grande Ronde River from Five Points Creek to its confluence with the Wallowa River (and all tributaries that enter this segment of the river).

(b) Except as provided below, no wastewater discharge or other activity is allowed if the discharge or other activity will cause the following nutrient concentrations to be exceeded:

* Orthophosphate Phosphorus (as P) 5ug/L;

~~* Dissolved Inorganic Nitrogen (ammonia + nitrite + nitrate, as N) 40ug/L.~~

~~(A) The concentrations do not become effective until Department-approved wastewater control facility plans and water quality management plans are fully implemented or December 31, 2002, unless otherwise extended by the Environmental Quality Commission for good cause.~~

~~(B) The Department can waive these nutrient concentration limits when the Department determines conditions are such that higher nutrient concentrations will not result in violations of Water Quality Standards.~~

~~(c) Within one year of adoption of this rule, the Cities of La Grande and Union shall submit to the Department a facilities plan describing how they will modify and upgrade their wastewater treatment facilities by December 31, 2002, to comply with this rule and all other applicable rules regarding the treatment and disposal of wastewater. This facilities plan shall include a description of the present physical and institutional infrastructure, all necessary intergovernmental agreements and approvals as appropriate, time schedules for accomplishing goals including interim objectives, and a financing plan.~~

~~(d) Within one year of adoption of this rule, Boise Cascade Corporation shall submit a facilities plan which describes how wastewater discharges will be controlled at the Island City particle board plant by December 31, 2002, to comply with this rule and all other applicable rules regulating waste discharge.~~

~~(e) In order to control nonpoint source pollution, the Department shall establish an advisory committee to develop a process and time schedule for addressing nonpoint source contributions to identified water quality standards violations in the stream segments identified in this rule and for meeting the in-stream nutrient criteria established in this rule. Within eighteen (18) months of the adoption of this rule, Union County, the incorporated cities within the Grande Ronde Valley, and the Oregon Departments of Agriculture shall submit a water quality management plan that describes how nonpoint source pollution will be controlled by December 31, 2002 to reduce in-stream nutrient concentrations to achieve the criteria established in this rule and to comply with in-stream water quality standards violations as listed on the 303(d) list. For Agricultural Water Quality Management Plans, plans shall be developed consistent with OARs 603-090-0000 through 603-090-0050. Silvicultural activities shall be addressed pursuant to a ORS 468B.110 and ORS 527.765 through 527.770 and consistent with a Memorandum of Understanding to be developed between the Oregon Department of Forestry and the Department of Environmental Quality.~~

~~(f) The Department shall review amended facility plans, water quality management plans and other measures undertaken in accordance with this rule to determine whether the plans and measures are reasonably likely to assure that relevant water quality standards will be achieved. If a facility plan is rejected, reasons shall be specified and a schedule for modification established. The Department shall provide an opportunity for public~~

~~comment and a hearing before submitting plans or other measures to the Environmental Protection Agency~~

~~(g) The Commission recognizes that it may take several years after full implementation before water quality management plans become effective in reducing and controlling pollution. In addition, the Commission recognizes that technology for controlling nonpoint source pollution is, in many cases, in the development stages and that it may take one or more iterations before effective techniques are found. It is possible that after application of all reasonable best management practices, the in-stream criteria established in subparagraph (b) of this section cannot be achieved. In this regard, the Commission directs the Department to work cooperatively with those nonpoint source entities that act in good faith to meet the requirements of this rule. If a nonpoint source entity complies with its State approved water quality management plan or forest practice rules, it will be deemed to be in compliance with this rule.~~

~~*Stat. Auth.:* ORS 468.020 & ORS 468B.035~~
~~Stats. Implemented:~~ ORS 468B.030, ORS 468B.110 & ORS 468B.048
~~Hist.:~~ DEQ 21-1997, f. & cert. ef. 10-14-97

~~Powder Basin~~

~~340-041-0762~~

~~Beneficial Water Uses to be Protected~~

~~Water quality in the Powder River Basin (see **Figures 1** and **15**) shall be managed to protect the recognized beneficial uses as indicated in **Table 14**.~~

~~[ED. NOTE: The Figure(s) and Table referenced in this rule are not printed in the OAR Compilation. Copies are available from the agency.]~~

~~Stat. Auth.:~~ ORS 468
~~Stats. Implemented:~~ ORS 468B.048
~~Hist.:~~ DEQ 128, f. & ef. 1-27-77

~~340-041-0765~~

~~Water Quality Standards Not to be Exceeded (To be Adopted Pursuant to ORS 468.735 and Enforceable Pursuant to ORS 468.720, 468.990 and 468.992)~~

~~(1) Notwithstanding the water quality standards contained below, the highest and best practicable treatment and/or control of wastes, activities, and flows shall in every case be provided so as to maintain dissolved oxygen and overall water quality at the highest possible levels and water temperatures, coliform bacteria concentrations, dissolved chemical substances, toxic materials, radioactivity, turbidities, color, odor, and other deleterious factors at the lowest possible levels.~~

~~(2) No wastes shall be discharged and no activities shall be conducted which either alone or in combination with other wastes or activities will cause violation of the following standards in the waters of the Powder River Basin:~~

~~(a) Dissolved oxygen (DO): The changes adopted by the Commission on January 11, 1996, become effective July 1, 1996. Until that time, the requirements of this rule that were in effect on January 10, 1996, apply:~~

~~(A) For waterbodies identified by the Department as providing salmonid spawning, during the periods from spawning until fry emergence from the gravels, the following criteria apply:~~

~~(i) The dissolved oxygen shall not be less than 11.0 mg/l. However, if the minimum intergravel dissolved oxygen, measured as a spatial median, is 8.0 mg/l or greater, then the DO criterion is 9.0 mg/l;~~

~~(ii) Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 11.0 mg/l or 9.0 mg/l criteria, dissolved oxygen levels shall not be less than 95 percent of saturation.~~

~~(B) For waterbodies identified by the Department as providing salmonid spawning during the period from spawning until fry emergence from the gravels, the spatial median intergravel dissolved oxygen concentration shall not fall below 6.0 mg/l;~~

~~(C) A spatial median of 8.0 mg/l intergravel dissolved oxygen level shall be used to identify areas where the recognized beneficial use of salmonid spawning, egg incubation and fry emergence from the egg and from the gravels may be impaired and therefore require action by the Department. Upon determi-nation that the spatial median intergravel dissolved oxygen concentration is below 8.0 mg/l, the Department may, in accordance with priorities established by the Department for evaluating water quality impaired waterbodies, determine whether to list the waterbody as water quality limited under the Section 303(d) of the Clean Water Act, initiate pollution control strategies as warranted, and where needed cooperate with appropriate designated management agencies to evaluate and implement necessary best management practices for nonpoint source pollution control;~~

~~(D) For waterbodies identified by the Department as providing cold water aquatic life, the dissolved oxygen shall not be less than 8.0 mg/l as an absolute minimum. Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 8.0 mg/l, dissolved oxygen shall not be less than 90 percent of saturation. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 8.0 mg/l as a 30 day mean minimum, 6.5 mg/l as a seven day minimum mean, and shall not fall below 6.0 mg/l as an absolute minimum (**Table 21**);~~

(E) For waterbodies identified by the Department as providing cool-water aquatic life, the dissolved oxygen shall not be less than 6.5 mg/l as an absolute minimum. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 6.5 mg/l as a 30-day mean minimum, 5.0 mg/l as a seven-day minimum mean, and shall not fall below 4.0 mg/l as an absolute minimum (**Table 21**);

(F) For waterbodies identified by the Department as providing warm water aquatic life, the dissolved oxygen shall not be less than 5.5 mg/l as an absolute minimum. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 5.5 mg/l as a 30-day mean minimum, and shall not fall below 4.0 mg/l as an absolute minimum (**Table 21**);

(b) Temperature: The changes adopted by the Commission on January 11, 1996, become effective July 1, 1996. Until that time, the requirements of this rule that were in effect on January 10, 1996, apply. The method for measuring the numeric temperature criteria specified in this rule is defined in OAR 340-041-0006(54):

(A) To accomplish the goals identified in OAR 340-041-0120(11), unless specifically allowed under a Department-approved surface water temperature management plan as required under OAR 340-041-0026(3)(a)(D), no measurable surface water temperature increase resulting from anthropogenic activities is allowed:

(i) In a basin for which salmonid fish rearing is a designated beneficial use, and in which surface water temperatures exceed 64.0°F (17.8°C);

(ii) In waters and periods of the year determined by the Department to support native salmonid spawning, egg incubation, and fry emergence from the egg and from the gravels in a basin which exceeds 55.0°F (12.8°C);

(iii) In waters determined by the Department to support or to be necessary to maintain the viability of native Oregon bull trout, when surface water temperatures exceed 50.0°F (10.0°C);

(iv) In waters determined by the Department to be ecologically significant cold water refugia;

(v) In stream segments containing federally listed Threatened and Endangered species if the increase would impair the biological integrity of the Threatened and Endangered population;

(vi) In Oregon waters when the dissolved oxygen (DO) levels are within 0.5 mg/l or 10 percent saturation of the water column or intergravel DO criterion for a given stream reach or subbasin;

(vii) In natural lakes.

(B) An exceedance of the numeric criteria identified in subparagraphs (A)(i) through (iii) of this subsection will not be deemed a temperature standard violation if it occurs when the air temperature during the warmest seven-day period of the year exceeds the 90th percentile of the seven-day average daily maximum air temperature calculated in a yearly series over the historic record. However, during such periods, the anthropogenic sources must still continue to comply with their surface water temperature management plans developed under OAR 340-041-0026(3)(a)(D);

(C) Any source may petition the Commission for an exception to subparagraphs (A)(i) through (vii) of this subsection for discharge above the identified criteria if:

(i) The source provides the necessary scientific information to describe how the designated beneficial uses would not be adversely impacted; or

(ii) A source is implementing all reasonable management practices or measures; its activity will not significantly affect the beneficial uses; and the environmental cost of treating the parameter to the level necessary to assure full protection would outweigh the risk to the resource.

(c) Turbidity (Nephelometric Turbidity Units, NTU): No more than a ten percent cumulative increase in natural stream turbidities shall be allowed, as measured relative to a control point immediately upstream of the turbidity causing activity. However, limited duration activities necessary to address an emergency or to accommodate essential dredging, construction or other legitimate activities and which cause the standard to be exceeded may be authorized provided all practicable turbidity control techniques have been applied and one of the following has been granted:

(A) Emergency activities: Approval coordinated by DEQ with the Department of Fish and Wildlife under conditions they may prescribe to accommodate response to emergencies or to protect public health and welfare;

(B) Dredging, Construction or other Legitimate Activities: Permit or certification authorized under terms of Section 401 or 404 (Permits and Licenses, Federal Water Pollution Control Act) or OAR 141-085-0100 et seq. (Removal and Fill Permits, Division of State Lands), with limitations and conditions governing the activity set forth in the permit or certificate.

(d) pH (hydrogen ion concentration): pH values shall not fall outside the ranges identified in paragraphs (A) and (B) of this subsection. The following exception applies: Waters impounded by dams existing on January 1, 1996, which have pHs that exceed the criteria shall not be considered in violation of the standard if the Department determines that the exceedance would not occur without the impoundment and that all practicable measures have been taken to bring the pH in the impounded waters into compliance with the criteria:

(A) Mainstem Snake River (river miles 260 to 335): 7.0 – 9.0;

(B) All other Basin streams: 6.5 – 9.0. When greater than 25 percent of ambient measurements taken between June and September are greater than pH 8.7, and as resources are available according to priorities set by the Department, the Department shall determine whether the values higher than 8.7 are anthropo-genic or natural in origin.

(e) Bacteria standards:

(A) Numeric Criteria: Organisms of the coliform group commonly associated with fecal sources (MPN or equivalent membrane filtration using a representative number of samples) shall not exceed the criteria described in subparagraphs (i) and (ii) of this paragraph. Freshwaters:

(i) A 30-day log mean of 126 *E. coli* organisms per 100 ml, based on a minimum of five (5) samples;

(ii) No single sample shall exceed 406 *E. coli* organisms per 100 ml.

(B) Raw Sewage Prohibition: No sewage shall be discharged into or in any other manner be allowed to enter the waters of the State unless such sewage has been treated in a manner approved by the Department or otherwise allowed by these rules;

(C) Animal Waste: Runoff contaminated with domesticated animal wastes shall be minimized and treated to the maximum extent practicable before it is allowed to enter waters of the State;

(D) Effluent Limitations and Water Quality Limited Waterbodies: Effluent limitations to implement the criteria in this rule are found in OAR 340-041-0120(12) through (16). Implementation of the criteria in this rule in water quality limited waterbodies is described in OAR 340-041-0026(3)(a)(I) and OAR 340-041-0120(17).

(f) Bacterial pollution or other conditions deleterious to waters used for domestic purposes, livestock watering, irrigation, bathing, or otherwise injurious to public health shall not be allowed;

(g) The liberation of dissolved gases, such as carbon dioxide, hydrogen sulfide, or other gases, in sufficient quantities to cause objectionable odors or to be deleterious to fish or other aquatic life, navigation, recreation, or other reasonable uses made of such waters shall not be allowed;

(h) Development of fungi or other growths having a deleterious effect on stream bottoms, fish or other aquatic life, or which are injurious to health, recreation, or industry shall not be allowed;

(i) The creation of tastes or odors or toxic or other conditions that are deleterious to fish or other aquatic life or affect the potability of drinking water or the palatability of fish or shellfish shall not be allowed;

~~(j) The formation of appreciable bottom or sludge deposits or the formation of any organic or inorganic deposits deleterious to fish or other aquatic life or injurious to public health, recreation, or industry shall not be allowed;~~

~~(k) Objectionable discoloration, scum, oily sleek or floating solids, or coating of aquatic life with oil films shall not be allowed;~~

~~(l) Aesthetic conditions offensive to the human senses of sight, taste, smell, or touch shall not be allowed;~~

~~(m) Radioisotope concentrations shall not exceed maximum permissible concentrations (MPC's) in drinking water, edible fishes or shellfishes, wildlife, irrigated crops, livestock and dairy products, or pose an external radiation hazard;~~

~~(n) The concentration of total dissolved gas relative to atmospheric pressure at the point of sample collection shall not exceed 110 percent of saturation, except when stream flow exceeds the ten-year, seven-day average flood. However, for Hatchery receiving waters and waters of less than two feet in depth, the concentration of total dissolved gas relative to atmospheric pressure at the point of sample collection shall not exceed 105 percent of saturation;~~

~~(o) Total Dissolved Solids: Guide concentrations listed below shall not be exceeded unless otherwise specifically authorized by DEQ upon such conditions as it may deem necessary to carry out the general intent of this plan and to protect the beneficial uses set forth in OAR 340-041-0762: Mainstem Snake River -- 750.0 mg/l;~~

~~(p) Toxic Substances:~~

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

~~(B) Levels of toxic substances shall not exceed the criteria listed in~~ **~~Table 20~~** ~~which were based on criteria established by EPA and published in~~ **~~Quality Criteria for Water (1986)~~**~~, unless otherwise noted;~~

~~(C) The criteria in paragraph (B) of this subsection shall apply unless data from scientifically valid studies demonstrate that the most sensitive designated beneficial uses will not be adversely affected by exceeding a criterion or that a more restrictive criterion is warranted to protect beneficial uses, as accepted by the Department on a site specific basis. Where no published EPA criteria exist for a toxic substance, public health advisories and other published scientific literature may be considered and used, if appropriate, to set guidance values;~~

(D) Bio-assessment studies such as laboratory bioassays or instream measurements of indigenous biological communities, shall be conducted, as the Department deems necessary, to monitor the toxicity of complex effluents, other suspected discharges or chemical substances without numeric criteria, to aquatic life. These studies, properly conducted in accordance with standard testing procedures, may be considered as scientifically valid data for the purposes of paragraph (C) of this subsection. If toxicity occurs, the Department shall evaluate and implement measures necessary to reduce toxicity on a case-by-case basis.

(3) Where the naturally occurring quality parameters of waters of the Powder River Basin are outside the numerical limits of the above assigned water quality standards, the naturally occurring water quantity shall be the standard. However, in such cases special restrictions, described in OAR 340-041-0026(3)(a)(C)(iii), apply to discharges that affect dissolved oxygen.

(4) Mixing zones:

(a) The Department may allow a designated portion of a receiving water to serve as a zone of dilution for wastewaters and receiving waters to mix thoroughly and this zone will be defined as a mixing zone;

(b) The Department may suspend all or part of the water quality standards, or set less restrictive standards, in the defined mixing zone, provided that the following conditions are met:

(A) The water within the mixing zone shall be free of:

(i) Materials in concentrations that will cause acute toxicity to aquatic life as measured by a Department approved bioassay method. Acute toxicity is lethality to aquatic life as measured by a significant difference in lethal concentration between the control and 100 percent effluent in an acute bioassay test. Lethality in 100 percent effluent may be allowed due to ammonia and chlorine only when it is demonstrated on a case-by-case basis that immediate dilution of the effluent within the mixing zone reduces toxicity below lethal concentrations. The Department may on a case-by-case basis establish a zone of immediate dilution if appropriate for other parameters;

(ii) Materials that will settle to form objectionable deposits;

(iii) Floating debris, oil, scum, or other materials that cause nuisance conditions;

(iv) Substances in concentrations that produce deleterious amounts of fungal or bacterial growths.

(B) The water outside the boundary of the mixing zone shall:

~~(i) Be free of materials in concentrations that will cause chronic (sublethal) toxicity. Chronic toxicity is measured as the concentration that causes long-term sublethal effects, such as significantly impaired growth or reproduction in aquatic organisms, during a testing period based on test species life cycle. Procedures and end points will be specified by the Department in wastewater discharge permits;~~

~~(ii) Meet all other water quality standards under normal annual low flow conditions.~~

~~(c) The limits of the mixing zone shall be described in the wastewater discharge permit. In determining the location, surface area, and volume of a mixing zone area, the Department may use appropriate mixing zone guidelines to assess the biological, physical, and chemical character of receiving waters, and effluent, and the most appropriate placement of the outfall, to protect instream water quality, public health, and other beneficial uses. Based on receiving water and effluent characteristics, the Department shall define a mixing zone in the immediate area of a wastewater discharge to:~~

~~(A) Be as small as feasible;~~

~~(B) Avoid overlap with any other mixing zones to the extent possible and be less than the total stream width as necessary to allow passage of fish and other aquatic organisms;~~

~~(C) Minimize adverse effects on the indigenous biological community especially when species are present that warrant special protection for their economic importance, tribal significance, ecological uniqueness, or for other similar reasons as determined by the Department and does not block the free passage of aquatic life;~~

~~(D) Not threaten public health;~~

~~(E) Minimize adverse effects on other designated beneficial uses outside the mixing zone.~~

~~(d) The Department may request the applicant of a permitted discharge for which a mixing zone is required, to submit all information necessary to define a mixing zone, such as:~~

~~(A) Type of operation to be conducted;~~

~~(B) Characteristics of effluent flow rates and composition;~~

~~(C) Characteristics of low flows of receiving waters;~~

~~(D) Description of potential environmental effects;~~

~~(E) Proposed design for outfall structures.~~

(e) The Department may, as necessary, require mixing zone monitoring studies and/or bioassays to be conducted to evaluate water quality or biological status within and outside the mixing zone boundary;

(f) The Department may change mixing zone limits or require the relocation of an outfall if it determines that the water quality within the mixing zone adversely affects any existing beneficial uses in the receiving waters.

(g) **Alternate requirements for mixing zones**: For some existing or proposed discharges to some receiving streams, it may not be practicable to treat wastewater to meet instream water quality standards at the point of discharge or within a short distance from the point of discharge. Some of these discharges could be allowed without impairing the overall ecological integrity of the receiving streams, or may provide an overall benefit to the receiving stream. This section specifies the conditions and circumstances under which a mixing zone may be allowed by the Department that extends beyond the immediate area around a discharge point, or that extends across a stream width. An alternate mixing zone may be approved if the applicant demonstrates to the Department's satisfaction that the discharge (A) creates an overall environmental benefit, or (B) is to a constructed water course, or (C) is insignificant. The three circumstances under which alternate mixing zones may be established are described further below.

(A) **Overall environmental benefit**.

(i) Qualifying for alternate mixing zone based on overall environmental benefit: In order to qualify for an alternate mixing zone based on a finding of overall environmental benefit, the discharger must demonstrate to the Department's satisfaction the following:

(I) That all practical strategies have been or will be implemented to minimize the pollutant loads in the effluent; and

(II) For proposed increased discharges, the current actual discharge and mixing zone does not meet the requirements of a standard mixing zone; and

(III) Either that, on balance, an environmental benefit would be lost if the discharge did not occur, or that the discharger is prepared to undertake other actions that will mitigate the effect of the discharge to an extent resulting in a net environmental benefit to the receiving stream.

(IV) For the purposes of this rule, the term "practical" shall include environmental impact, availability of alternatives, cost of alternatives, and other relevant factors.

(ii) Studies required and evaluation of studies: In order to demonstrate that, on balance, an environmental benefit will result from the discharge, the following information shall be provided by the applicant:

~~(I) The effluent flow and pollutant loads that are detected or expected in the effluent, by month, both average and expected worst case discharges. The parameters to be evaluated include at a minimum temperature, biochemical oxygen demand, total suspended solids, total dissolved solids, pH, settleable solids, e. coli bacteria, oil and grease, any pollutants listed in Table 20 of this rule division, and any pollutant for which the receiving stream has been designated by the Department as water quality limited; and~~

~~(II) Receiving stream flow, by month; and~~

~~(III) The expected impact of the discharge, by month, on the receiving stream for the entire proposed mixing zone area for all of the pollutants listed above. Included in this analysis shall be a comparison of the receiving stream water quality with the discharge and without the discharge; and~~

~~(IV) A description of fish, other vertebrate populations, and macroinvertebrates that reside in or are likely to pass through the proposed mixing zone, including expected location (if known), species identification, stage of development, and time of year when their presence is expected. For existing discharges, the applicant shall provide the same information for similar nearby streams that are unaffected by wastewater discharges. In addition, any threatened or endangered species in the immediate vicinity of the receiving stream shall be identified; and~~

~~(V) The expected impact of the discharge on aquatic organisms and/or fish passage, including any expected negative impacts from the effluent attracting fish where that is not desirable; and~~

~~(VI) A description of the expected environmental benefits to be derived from the discharge or other mitigation measures proposed by the applicant, including but not limited to improvements in water quality, improvements in fish passage, and improvements in aquatic habitat. If the applicant proposes to undertake mitigation measures designed to provide environmental benefits (e.g., purchasing water or water conservation rights to increase stream flows or establishing stream cover to decrease temperature), the applicant shall describe the mitigation measures in detail, including a description of the steps it will take to ensure that the benefits of the mitigation measures are attained and are not lost or diminished over time.~~

~~(VI) Some or all of the above study requirements may be waived by the Department, if the Department determines that the information is not needed. In the event that the Department does waive some or all of the above study requirements, the basis for waiving the requirements will be included in the permit evaluation report upon the next permit renewal or modification relating to the mixing zone.~~

~~(VIII) Upon request of the Department, the applicant shall conduct additional studies to further evaluate the impact of the discharge, which may include whole effluent toxicity testing, stream surveys for water quality, stream surveys for fish and other aquatic organisms, or other studies as specified by the Depart-ment.~~

~~(IX) In evaluating whether an existing or proposed increase in an existing discharge would result in a net environmental benefit, the applicant shall use the native biological community in a nearby, similar stream that is unaffected by wastewater discharges. The Department shall consider all information generated as required in this rule and other relevant information. The evaluation shall consider benefits to the native aquatic biological community only.~~

~~(iii) Permit conditions: Upon determination by the Department that the discharge and mitigation measures (if any) will likely result in an overall environmental benefit, the Department shall include appropriate permit conditions to insure that the environmental benefits are attained and continue. Such permit conditions may include but not be limited to:~~

~~(I) Maximum allowed effluent flows and pollutant loads;~~

~~(II) Requirements to maintain land ownership, easements, contracts, or other legally binding measures necessary to assure that mitigation measures, if any, remain in place and effective;~~

~~(III) Special operating conditions;~~

~~(IV) Monitoring and reporting requirements; and~~

~~(V) Studies to evaluate the effectiveness of mitigation measures.~~

~~(B) **Constructed water course**: A mixing zone may be extended through a constructed water course and into a natural water course. For the purposes of this rule, a constructed water course is one that was constructed for irrigation, site drainage, or wastewater conveyance, and has the following characteristics:~~

~~(i) Irrigation flows, stormwater runoff, or wastewater flows have replaced natural streamflow regimes; and~~

~~(ii) The channel form is greatly simplified in lengthwise and cross sectional profiles; and~~

~~(iii) Physical and biological characteristics that differ significantly from nearby natural streams; and~~

~~(iv) A much lower diversity of aquatic species than found in nearby natural streams; and~~

~~(v) If the constructed water course is an irrigation canal, then it must have effective fish screens in place to qualify as a constructed water course.~~

~~(C) **Insignificant discharges**: Insignificant discharges are those that either by volume, pollutant characteristics, and/or temporary nature are expected to have little if any impact on beneficial uses in the receiving stream, and for which the extensive evaluations~~

required for discharges to smaller streams are not warranted. For the purposes of this rule, only filter backwash discharges and underground storage tank cleanups are considered insignificant discharges.

(D) **Other requirements for alternate mixing zones**: The following are additional requirements for dischargers requesting an alternate mixing zone:

(i) Most discharges that qualify for an alternate mixing zone will extend through the receiving stream until a larger stream is reached, where thorough mixing of the effluent can occur and where the edge of the allowed mixing zone will be located. The portion of the mixing zone in the larger stream must meet all of the requirements of the standard mixing zone, including not blocking aquatic life passage; and

(ii) An alternate mixing zone shall not be granted if a municipal drinking water intake is located within the proposed mixing zone, and the discharge has a significant adverse impact on the drinking water source; and

(iii) The discharge will not pose an unreasonable hazard to the environment or pose a significant health risk, considering the likely pathways of exposure; and

(iv) The discharge shall not be acutely toxic to organisms passing through the mixing zone; and

(v) An alternate mixing zone shall not be granted if the substances discharged may accumulate in the sediments or bioaccumulate in aquatic life or wildlife to levels that adversely affect public health, safety, or welfare; aquatic life; wildlife; or other designated beneficial uses; and

(vi) In the event that the receiving stream is water quality limited, the requirements for discharges to water quality limited streams supersede this rule.

(5) Testing methods: The analytical testing methods for determining compliance with the water quality standards contained in this rule shall be in accordance with the most recent edition of **Standard Methods for the Examination of Water and Waste Water published jointly by the American Public Health Association, American Water Works Association, and Water Pollution Control Federation**, unless the Department has published an applicable superseding method, in which case testing shall be in accordance with the superseding method; provided, however, that testing in accordance with an alternative method shall comply with this rule if the Department has published the method or has approved the method in writing.

[ED. NOTE: The Table(s) referenced in this rule is not printed in the OAR Compilation. Copies are available from the agency.]

[Publications: The publication(s) referred to or incorporated by reference in this rule are available from the office of the agency.]

Stat. Auth.: ORS 468.735, ORS 468B.035 & ORS 468B.048
Stats. Implemented: ORS 468B.048
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 1-1980, f. & ef. 1-9-80; DEQ 18-1987, f. & ef. 9-4-87; DEQ 14-1991, f. & cert. ef. 8-13-91; DEQ 17-1992, f. & cert. ef. 8-7-92 (and corrected 8-13-92); DEQ 21-1995(Temp), f. & cert. ef. 9-21-95; DEQ 5-1996, f. & cert. ef. 3-7-96; DEQ 22-1997, f. & cert. ef. 10-24-97

340-041-0775

Minimum Design Criteria for Treatment and Control of Wastes

Subject to the implementation program set forth in OAR 340-041-0120, prior to discharge of any wastes from any new or modified facility to any waters of the Powder River Basin, such wastes shall be treated and controlled in facilities designed in accordance with the following minimum criteria. (In designing treatment facilities, average conditions and a normal range of variability are generally used in establishing design criteria. A facility once completed and placed in operation should operate at or near the design limit most of the time but may operate below the design criteria limit at times due to variables which are unpredictable or uncontrollable. This is particularly true for biological treatment facilities. The actual operating limits are intended to be established by permit pursuant to ORS 468.740 and recognize that the actual performance level may at times be less than the design criteria.):

(1) Sewage wastes:

(a) A minimum of secondary treatment or equivalent control and unless otherwise specifically authorized by the Department, the operation of all waste treatment and control facilities at maximum practicable efficiency and effectiveness so as to minimize waste discharges to public waters;

(b) Effluent BOD concentrations in mg/l, divided by the dilution factor (ratio of receiving stream flow to effluent flow) shall not exceed one unless otherwise approved by the EQC;

(c) Sewage wastes shall be disinfected, after treatment, equivalent to thorough mixing with sufficient chlorine to provide a residual of at least one part per million after 60 minutes of contact time unless otherwise specifically authorized by permit;

(d) Positive protection shall be provided to prevent bypassing raw or inadequately treated sewage to public waters unless otherwise approved by the Department where elimination of inflow and infiltration would be necessary but not presently practicable;

(e) More stringent waste treatment and control requirements may be imposed where special conditions may require.

(2) Industrial wastes:

(a) After maximum practicable inplant control, a minimum of secondary treatment or equivalent control (reduction of suspended solids and organic material where present in significant quantities, effective disinfection where bacterial organisms of public health significance are present, and control of toxic or other deleterious substances);

(b) Specific industrial waste treatment requirement shall be determined on an individual basis in accordance with the provisions of this plan, applicable federal requirements, and the following:

(A) The uses which are or may likely be made of the receiving stream;

(B) The size and nature of flow of the receiving stream;

(C) The quantity and quality of wastes to be treated; and

(D) The presence or absence of other sources of pollution on the same watershed.

(c) Where industrial, commercial, or agricultural effluents contain significant quantities of potentially toxic elements, treatment requirements shall be determined utilizing appropriate bioassays;

(d) Industrial cooling waters containing significant heat loads shall be subjected to offstream cooling or heat recovery prior to discharge to public waters;

(e) Positive protection shall be provided to prevent bypassing of raw or inadequately treated industrial wastes to any public waters;

(f) Facilities shall be provided to prevent and contain spills of potentially toxic or hazardous materials and a positive program for containment and cleanup of such spills should they occur shall be developed and maintained.

Stat. Auth.: ORS 468
Stats. Implemented: ORS 468B.030
Hist.: DEQ 128, f. & ef. 1-21-77

Malheur River Basin

340-041-0802

Beneficial Water Uses to be Protected

Water quality in the Malheur River Basin (see **Figures 1** and **16**) shall be managed to protect the recognized beneficial uses as indicated in **Table 15**.

[ED. NOTE: The Figure(s) and Table referenced in this rule are not printed in the OAR Compilation. Copies are available from the agency.]

Stat. Auth.: ORS 468
Stats. Implemented: ORS 468B.048
Hist.: DEQ 128, f. & ef. 1-27-77; DEQ 9-1985, f. & ef. 8-6-85

340-041-0805

Water Quality Standards Not to be Exceeded (To be Adopted Pursuant to ORS 468.735 and Enforceable Pursuant to ORS 468.720, 468.990, and 468.992)

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

(2) No wastes shall be discharged and no activities shall be conducted which either alone or in combination with other wastes or activities will cause violation of the following standards in the waters of the Malheur River Basin:

(a) Dissolved oxygen (DO): The changes adopted by the Commission on January 11, 1996, become effective July 1, 1996. Until that time, the requirements of this rule that were in effect on January 10, 1996, apply:

(A) For waterbodies identified by the Department as providing salmonid spawning, during the periods from spawning until fry emergence from the gravels, the following criteria apply:

(i) The dissolved oxygen shall not be less than 11.0 mg/l. However, if the minimum intergravel dissolved oxygen, measured as a spatial median, is 8.0 mg/l or greater, then the DO criterion is 9.0 mg/l;

(ii) Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 11.0 mg/l or 9.0 mg/l criteria, dissolved oxygen levels shall not be less than 95 percent of saturation.

(B) For waterbodies identified by the Department as providing salmonid spawning during the period from spawning until fry emergence from the gravels, the spatial median intergravel dissolved oxygen concentration shall not fall below 6.0 mg/l;

(C) A spatial median of 8.0 mg/l intergravel dissolved oxygen level shall be used to identify areas where the recognized beneficial use of salmonid spawning, egg incubation and fry emergence from the egg and from the gravels may be impaired and therefore require action by the Department. Upon determination that the spatial median intergravel dissolved oxygen concentration is below 8.0 mg/l, the Department may, in accordance with priorities established by the Department for evaluating water quality impaired

~~waterbodies, determine whether to list the waterbody as water quality limited under the Section 303(d) of the Clean Water Act, initiate pollution control strategies as warranted, and where needed cooperate with appropriate designated management agencies to evaluate and implement necessary best management practices for nonpoint source pollution control;~~

~~(D) For waterbodies identified by the Department as providing cold water aquatic life, the dissolved oxygen shall not be less than 8.0 mg/l as an absolute minimum. Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 8.0 mg/l, dissolved oxygen shall not be less than 90 percent of saturation. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 8.0 mg/l as a 30-day mean minimum, 6.5 mg/l as a seven-day minimum mean, and shall not fall below 6.0 mg/l as an absolute minimum (**Table 21**);~~

~~(E) For waterbodies identified by the Department as providing cool water aquatic life, the dissolved oxygen shall not be less than 6.5 mg/l as an absolute minimum. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 6.5 mg/l as a 30-day mean minimum, 5.0 mg/l as a seven-day minimum mean, and shall not fall below 4.0 mg/l as an absolute minimum (**Table 21**);~~

~~(F) For waterbodies identified by the Department as providing warm water aquatic life, the dissolved oxygen shall not be less than 5.5 mg/l as an absolute minimum. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 5.5 mg/l as a 30-day mean minimum, and shall not fall below 4.0 mg/l as an absolute minimum (**Table 21**);~~

~~(b) Temperature: The changes adopted by the Commission on January 11, 1996, become effective July 1, 1996. Until that time, the requirements of this rule that were in effect on January 10, 1996, apply. The method for measuring the numeric temperature criteria specified in this rule is defined in OAR 340-041-0006(54):~~

~~(A) To accomplish the goals identified in OAR 340-041-0120(11), unless specifically allowed under a Department approved surface water temperature management plan as required under OAR 340-041-0026(3)(a)(D), no measurable surface water temperature increase resulting from anthropogenic activities is allowed:~~

~~(i) In a basin for which salmonid fish rearing is a designated beneficial use, and in which surface water temperatures exceed 64.0°F (17.8°C);~~

~~(ii) In waters and periods of the year determined by the Department to support native salmonid spawning, egg incubation, and fry emergence from the egg and from the gravels in a basin which exceeds 55.0°F (12.8°C);~~

~~(iii) In waters determined by the Department to support or to be necessary to maintain the viability of native Oregon bull trout, when surface water temperatures exceed 50.0°F (10.0°C);~~

~~(iv) In waters determined by the Department to be ecologically significant cold-water refugia;~~

~~(v) In stream segments containing federally listed Threatened and Endangered species if the increase would impair the biological integrity of the Threatened and Endangered population;~~

~~(vi) In Oregon waters when the dissolved oxygen (DO) levels are within 0.5 mg/l or 10 percent saturation of the water column or intergravel DO criterion for a given stream reach or subbasin;~~

~~(vii) In natural lakes.~~

~~(B) An exceedance of the numeric criteria identified in subparagraphs (A)(i) through (iii) of this subsection will not be deemed a temperature standard violation if it occurs when the air temperature during the warmest seven-day period of the year exceeds the 90th percentile of the seven-day average daily maximum air temperature calculated in a yearly series over the historic record. However, during such periods, the anthropogenic sources must still continue to comply with their surface water temperature management plans developed under OAR 340-041-0026(3)(a)(D);~~

~~(C) Any source may petition the Commission for an exception to subparagraphs (A)(i) through (vii) of this subsection for discharge above the identified criteria if:~~

~~(i) The source provides the necessary scientific information to describe how the designated beneficial uses would not be adversely impacted; or~~

~~(ii) A source is implementing all reasonable management practices or measures; its activity will not significantly affect the beneficial uses; and the environmental cost of treating the parameter to the level necessary to assure full protection would outweigh the risk to the resource.~~

~~(c) Turbidity (Nephelometric Turbidity Units, NTU): No more than a 10 percent cumulative increase in natural stream turbidities shall be allowed, as measured relative to a control point immediately upstream of the turbidity causing activity. However, limited duration activities necessary to address an emergency or to accommodate essential dredging, construction or other legitimate activities and which cause the standard to be exceeded may be authorized provided all practicable turbidity control techniques have been applied and one of the following has been granted:~~

~~(A) Emergency activities: Approval coordinated by DEQ with the Department of Fish and Wildlife under conditions they may prescribe to accommodate response to emergencies or to protect public health and welfare;~~

~~(B) Dredging, Construction or other Legitimate Activities: Permit or certification authorized under terms of Section 401 or 404 (Permits and Licenses, Federal Water Pollution Control Act) or OAR 141-085-0100 et seq. (Removal and Fill Permits, Division of State Lands), with limitations and conditions governing the activity set forth in the permit or certificate.~~

~~(d) pH (hydrogen ion concentration): pH values shall not fall outside the range of 7.0 to 9.0. When greater than 25 percent of ambient measurements taken between June and September are greater than pH 8.7, and as resources are available according to priorities set by the Department, the Department shall determine whether the values higher than 8.7 are anthropogenic or natural in origin. The following exception applies: Waters impounded by dams existing on January 1, 1996, which have pHs that exceed the criteria shall not be considered in violation of the standard if the Department determines that the exceedance would not occur without the impoundment and that all practicable measures have been taken to bring the pH in the impounded waters into compliance with the criteria;~~

~~(e) Bacteria standards:~~

~~(A) Numeric Criteria: Organisms of the coliform group commonly associated with fecal sources (MPN or equivalent membrane filtration using a representative number of samples) shall not exceed the criteria described in subparagraphs (i) and (ii) of this paragraph. Freshwaters:~~

~~(i) A 30-day log mean of 126 *E. coli* organisms per 100 ml, based on a minimum of five (5) samples;~~

~~(ii) No single sample shall exceed 406 *E. coli* organisms per 100 ml.~~

~~(B) Raw Sewage Prohibition: No sewage shall be discharged into or in any other manner be allowed to enter the waters of the State unless such sewage has been treated in a manner approved by the Department or otherwise allowed by these rules;~~

~~(C) Animal Waste: Runoff contaminated with domesticated animal wastes shall be minimized and treated to the maximum extent practicable before it is allowed to enter waters of the State;~~

~~(D) Effluent Limitations and Water Quality Limited Waterbodies: Effluent limitations to implement the criteria in this rule are found in OAR 340-041-0120(12) through (16). Implementation of the criteria in this rule in water quality limited waterbodies is described in OAR 340-041-0026(3)(a)(I) and OAR 340-041-0120(17).~~

~~(f) Bacterial pollution or other conditions deleterious to waters used for domestic purposes, livestock watering, irrigation, bathing, or otherwise injurious to public health shall not be allowed;~~

~~(g) The liberation of dissolved gases, such as carbon dioxide, hydrogen sulfide, or other gases, in sufficient quantities to cause objectionable odors or to be deleterious to fish or other aquatic life, navigation, recreation, or other reasonable uses made of such waters shall not be allowed;~~

~~(h) The development of fungi or other growths having a deleterious effect on stream bottoms, fish or other aquatic life, or which are injurious to health, recreation, or industry shall not be allowed;~~

~~(i) The creation of tastes or odors or toxic or other conditions that are deleterious to fish or other aquatic life or affect the potability of drinking water or the palatability of fish or shellfish shall not be allowed;~~

~~(j) The formation of appreciable bottom or sludge deposits or the formation of any organic or inorganic deposits deleterious to fish or other aquatic life or injurious to public health, recreation, or industry shall not be allowed;~~

~~(k) Objectionable discoloration, scum, oily sleek or floating solids, or coating of aquatic life with oil films shall not be allowed;~~

~~(l) Aesthetic conditions offensive to the human senses of sight, taste, smell, or touch shall not be allowed;~~

~~(m) Radioisotope concentrations shall not exceed maximum permissible concentrations (MPC's) in drinking water, edible fishes or shellfishes, wildlife, irrigated crops, livestock and dairy products, or pose an external radiation hazard;~~

~~(n) The concentration of total dissolved gas relative to atmospheric pressure at the point of sample collection shall not exceed 110 percent of saturation, except when stream flow exceeds the ten-year, seven-day average flood. However, for Hatchery receiving waters and waters of less than two feet in depth, the concentration of total dissolved gas relative to atmospheric pressure at the point of sample collection shall not exceed 105 percent of saturation;~~

~~(o) Total Dissolved Solids: Guide concentrations listed below shall not be exceeded unless otherwise specifically authorized by DEQ upon such conditions as it may deem necessary to carry out the general intent of this plan and to protect the beneficial uses set forth in OAR 340-041-0802: Snake River -- 750.0 mg/l.~~

~~(p) Toxic Substances:~~

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

(B) Levels of toxic substances shall not exceed the criteria listed in **Table 20** which were based on criteria established by EPA and published in **Quality Criteria for Water (1986)**, unless otherwise noted;

(C) The criteria in paragraph (B) of this subsection shall apply unless data from scientifically valid studies demonstrate that the most sensitive designated beneficial uses will not be adversely affected by exceeding a criterion or that a more restrictive criterion is warranted to protect beneficial uses, as accepted by the Department on a specific basis. Where no published EPA criteria exist for a toxic substance, public health advisories and other published scientific literature may be considered and used, if appropriate, to set guidance values;

(D) Bio-assessment studies such as laboratory bioassays or instream measurements of indigenous biological communities, shall be conducted, as the Department deems necessary, to monitor the toxicity of complex effluents, other suspected discharges or chemical substances without numeric criteria, to aquatic life. These studies, properly conducted in accordance with standard testing procedures, may be considered as scientifically valid data for the purposes of paragraph (C) of this subsection. If toxicity occurs, the Department shall evaluate and implement measures necessary to reduce toxicity on a case-by-case basis.

(3) Where the naturally occurring quality parameters of waters of the Malheur River Basin are outside the numerical limits of the above assigned water quality standards, the naturally occurring water quantity shall be the standard. However, in such cases special restrictions, described in OAR 340-041-0026(3)(a)(C)(iii), apply to discharges that affect dissolved oxygen.

(4) Mixing zones:

(a) The Department may allow a designated portion of a receiving water to serve as a zone of dilution for wastewaters and receiving waters to mix thoroughly and this zone will be defined as a mixing zone;

(b) The Department may suspend all or part of the water quality standards, or set less restrictive standards, in the defined mixing zone, provided that the following conditions are met:

(A) The water within the mixing zone shall be free of:

~~(i) Materials in concentrations that will cause acute toxicity to aquatic life as measured by a Department approved bioassay method. Acute toxicity is lethality to aquatic life as measured by a significant difference in lethal concentration between the control and 100 percent effluent in an acute bioassay test. Lethality in 100 percent effluent may be allowed due to ammonia and chlorine only when it is demonstrated on a case-by-case basis that immediate dilution of the effluent within the mixing zone reduces toxicity below lethal concentrations. The Department may on a case-by-case basis establish a zone of immediate dilution if appropriate for other parameters;~~

~~(ii) Materials that will settle to form objectionable deposits;~~

~~(iii) Floating debris, oil, scum, or other materials that cause nuisance conditions;~~

~~(iv) Substances in concentrations that produce deleterious amounts of fungal or bacterial growths.~~

~~(B) The water outside the boundary of the mixing zone shall:~~

~~(i) Be free of materials in concentrations that will cause chronic (sublethal) toxicity. Chronic toxicity is measured as the concentration that causes long-term sublethal effects, such as significantly impaired growth or reproduction in aquatic organisms, during a testing period based on test species life cycle. Procedures and end points will be specified by the Department in wastewater discharge permits;~~

~~(ii) Meet all other water quality standards under normal annual low flow conditions.~~

~~(c) The limits of the mixing zone shall be described in the wastewater discharge permit. In determining the location, surface area, and volume of a mixing zone area, the Department may use appropriate mixing zone guidelines to assess the biological, physical, and chemical character of receiving waters, and effluent, and the most appropriate placement of the outfall, to protect instream water quality, public health, and other beneficial uses. Based on receiving water and effluent characteristics, the Department shall define a mixing zone in the immediate area of a wastewater discharge to:~~

~~(A) Be as small as feasible;~~

~~(B) Avoid overlap with any other mixing zones to the extent possible and be less than the total stream width as necessary to allow passage of fish and other aquatic organisms;~~

~~(C) Minimize adverse effects on the indigenous biological community especially when species are present that warrant special protection for their economic importance, tribal significance, ecological uniqueness, or for other similar reasons as determined by the Department and does not block the free passage of aquatic life;~~

~~(D) Not threaten public health;~~

(E) Minimize adverse effects on other designated beneficial uses outside the mixing zone.

(d) The Department may request the applicant of a permitted discharge for which a mixing zone is required, to submit all information necessary to define a mixing zone, such as:

(A) Type of operation to be conducted;

(B) Characteristics of effluent flow rates and composition;

(C) Characteristics of low flows of receiving waters;

(D) Description of potential environmental effects;

(E) Proposed design for outfall structures.

(e) The Department may, as necessary, require mixing zone monitoring studies and/or bioassays to be conducted to evaluate water quality or biological status within and outside the mixing zone boundary;

(f) The Department may change mixing zone limits or require the relocation of an outfall if it determines that the water quality within the mixing zone adversely affects any existing beneficial uses in the receiving waters.

(g) **Alternate requirements for mixing zones**: For some existing or proposed discharges to some receiving streams, it may not be practicable to treat wastewater to meet instream water quality standards at the point of discharge or within a short distance from the point of discharge. Some of these discharges could be allowed without impairing the overall ecological integrity of the receiving streams, or may provide an overall benefit to the receiving stream. This section specifies the conditions and circumstances under which a mixing zone may be allowed by the Department that extends beyond the immediate area around a discharge point, or that extends across a stream width. An alternate mixing zone may be approved if the applicant demonstrates to the Department's satisfaction that the discharge (A) creates an overall environmental benefit, or (B) is to a constructed water course, or (C) is insignificant. The three circumstances under which alternate mixing zones may be established are described further below.

(A) **Overall environmental benefit.**

(i) Qualifying for alternate mixing zone based on overall environmental benefit: In order to qualify for an alternate mixing zone based on a finding of overall environmental benefit, the discharger must demonstrate to the Department's satisfaction the following:

(I) That all practical strategies have been or will be implemented to minimize the pollutant loads in the effluent; and

~~(II) For proposed increased discharges, the current actual discharge and mixing zone does not meet the requirements of a standard mixing zone; and~~

~~(III) Either that, on balance, an environmental benefit would be lost if the discharge did not occur, or that the discharger is prepared to undertake other actions that will mitigate the effect of the discharge to an extent resulting in a net environmental benefit to the receiving stream.~~

~~(IV) For the purposes of this rule, the term "practical" shall include environmental impact, availability of alternatives, cost of alternatives, and other relevant factors.~~

~~(ii) Studies required and evaluation of studies: In order to demonstrate that, on balance, an environmental benefit will result from the discharge, the following information shall be provided by the applicant:~~

~~(I) The effluent flow and pollutant loads that are detected or expected in the effluent, by month, both average and expected worst case discharges. The parameters to be evaluated include at a minimum temperature, biochemical oxygen demand, total suspended solids, total dissolved solids, pH, settleable solids, e. coli bacteria, oil and grease, any pollutants listed in Table 20 of this rule division, and any pollutant for which the receiving stream has been designated by the Department as water quality limited; and~~

~~(II) Receiving stream flow, by month; and~~

~~(III) The expected impact of the discharge, by month, on the receiving stream for the entire proposed mixing zone area for all of the pollutants listed above. Included in this analysis shall be a comparison of the receiving stream water quality with the discharge and without the discharge; and~~

~~(IV) A description of fish, other vertebrate populations, and macroinvertebrates that reside in or are likely to pass through the proposed mixing zone, including expected location (if known), species identification, stage of development, and time of year when their presence is expected. For existing discharges, the applicant shall provide the same information for similar nearby streams that are unaffected by wastewater discharges. In addition, any threatened or endangered species in the immediate vicinity of the receiving stream shall be identified; and~~

~~(V) The expected impact of the discharge on aquatic organisms and/or fish passage, including any expected negative impacts from the effluent attracting fish where that is not desirable; and~~

~~(VI) A description of the expected environmental benefits to be derived from the discharge or other mitigation measures proposed by the applicant, including but not limited to improvements in water quality, improvements in fish passage, and improvements in aquatic habitat. If the applicant proposes to undertake mitigation measures designed to provide environmental benefits (e.g., purchasing water or water~~

~~conservation rights to increase stream flows or establishing stream cover to decrease temperature), the applicant shall describe the mitigation measures in detail, including a description of the steps it will take to ensure that the benefits of the mitigation measures are attained and are not lost or diminished over time.~~

~~(VII) Some or all of the above study requirements may be waived by the Department, if the Department determines that the information is not needed. In the event that the Department does waive some or all of the above study requirements, the basis for waiving the requirements will be included in the permit evaluation report upon the next permit renewal or modification relating to the mixing zone.~~

~~(VIII) Upon request of the Department, the applicant shall conduct additional studies to further evaluate the impact of the discharge, which may include whole effluent toxicity testing, stream surveys for water quality, stream surveys for fish and other aquatic organisms, or other studies as specified by the Department.~~

~~(IX) In evaluating whether an existing or proposed increase in an existing discharge would result in a net environmental benefit, the applicant shall use the native biological community in a nearby, similar stream that is unaffected by wastewater discharges. The Department shall consider all information generated as required in this rule and other relevant information. The evaluation shall consider benefits to the native aquatic biological community only.~~

~~(iii) Permit conditions: Upon determination by the Department that the discharge and mitigation measures (if any) will likely result in an overall environmental benefit, the Department shall include appropriate permit conditions to insure that the environmental benefits are attained and continue. Such permit conditions may include but not be limited to:~~

~~(I) Maximum allowed effluent flows and pollutant loads;~~

~~(II) Requirements to maintain land ownership, easements, contracts, or other legally binding measures necessary to assure that mitigation measures, if any, remain in place and effective;~~

~~(III) Special operating conditions;~~

~~(IV) Monitoring and reporting requirements; and~~

~~(V) Studies to evaluate the effectiveness of mitigation measures.~~

~~(B) **Constructed water course**: A mixing zone may be extended through a constructed water course and into a natural water course. For the purposes of this rule, a constructed water course is one that was constructed for irrigation, site drainage, or wastewater conveyance, and has the following characteristics:~~

(i) Irrigation flows, stormwater runoff, or wastewater flows have replaced natural streamflow regimes; and

(ii) The channel form is greatly simplified in lengthwise and cross sectional profiles; and

(iii) Physical and biological characteristics that differ significantly from nearby natural streams; and

(iv) A much lower diversity of aquatic species than found in nearby natural streams; and

(v) If the constructed water course is an irrigation canal, then it must have effective fish screens in place to qualify as a constructed water course.

(C) **Insignificant discharges:** *Insignificant discharges are those that either by volume, pollutant characteristics, and/or temporary nature are expected to have little if any impact on beneficial uses in the receiving stream, and for which the extensive evaluations required for discharges to smaller streams are not warranted. For the purposes of this rule, only filter backwash discharges and underground storage tank cleanups are considered insignificant discharges.*

(D) **Other requirements for alternate mixing zones**: The following are additional requirements for dischargers requesting an alternate mixing zone:

(i) Most discharges that qualify for an alternate mixing zone will extend through the receiving stream until a larger stream is reached, where thorough mixing of the effluent can occur and where the edge of the allowed mixing zone will be located. The portion of the *mixing zone in the* larger stream must meet all of the requirements of the standard mixing zone, including not blocking aquatic life passage; and

(ii) An alternate mixing zone shall not be granted if a municipal drinking water intake is located within the proposed mixing zone, and the discharge has a significant adverse impact on the drinking water source; and

(iii) The discharge will not pose an unreasonable hazard to the environment or pose a significant health risk, considering the likely pathways of exposure; and

(iv) The discharge shall not be acutely toxic to organisms passing through the mixing zone; and

(v) An alternate mixing zone shall not be granted if the substances discharged may accumulate in the sediments or bioaccumulate in aquatic life or wildlife to levels that adversely affect public health, safety, or welfare; aquatic life; wildlife; or other designated beneficial uses; and

(vi) In the event that the receiving stream is water quality limited, the requirements for discharges to water quality limited streams supersede this rule.

(5) Testing methods: The analytical testing methods for determining compliance with the water quality standards contained in this rule shall be in accordance with the most recent edition of **Standard Methods for the Examination of Water and Waste Water published jointly by the American Public Health Association, American Water Works Association, and Water Pollution Control Federation**, unless the Department has published an applicable superseding method, in which case testing shall be in accordance with the superseding method; provided, however, that testing in accordance with an alternative method shall comply with this rule if the Department has published the method or has approved the method in writing.

[ED. NOTE: The Table(s) referenced in this rule is not printed in the OAR Compilation. Copies are available from the agency.]

[Publications: The publication(s) referred to or incorporated by reference in this rule are available from the office of the agency.]

Stat. Auth.: ORS 468.735, ORS 468B.035 & ORS 468B.048
Stats. Implemented: ORS 468B.048
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 1-1980, f. & ef. 1-9-80; DEQ 18-1987, f. & ef. 9-4-87; DEQ 14-1991, f. & cert. ef. 8-13-91; DEQ 17-1992, f. & cert. ef. 8-7-92 (and corrected 8-13-92); DEQ 21-1995(Temp), f. & cert. ef. 9-21-95; DEQ 5-1996, f. & cert. ef. 3-7-96; DEQ 22-1997, f. & cert. ef. 10-24-97

340-041-0815

Minimum Design Criteria for Treatment Control of Wastes

Subject to the implementation program set forth in OAR 340-041-0120, prior to discharge of any wastes from any new or modified facility to any waters of the Malheur River Basin, such wastes shall be treated and controlled in facilities designed in accordance with the following minimum criteria. (In designing treatment facilities, average conditions and a normal range of variability are generally used in establishing design criteria. A facility once completed and placed in operation should operate at or near the design limit most of the time but may operate below the design criteria limit at times due to variables which are unpredictable or uncontrollable. This is particularly true for biological treatment facilities. The actual operating limits are intended to be established by permit pursuant to ORS 468.740 and recognize that the actual performance level may at times be less than the design criteria.):

(1) Sewage wastes:

(a) During summer periods (approximately May 1 to October 31): Treatment resulting in monthly average effluent concen trations not to exceed 20 mg/l of BOD and 20 mg/l of SS or equivalent control;

~~(b) During winter periods (approximately November 1 to April 30): A minimum of Secondary Treatment or equivalent control and unless otherwise specifically authorized by the Department, operation of all waste treatment and control facilities at maximum practicable efficiency and effectiveness so as to minimize waste discharges to public waters;~~

~~(c) Effluent BOD concentrations in mg/l, divided by the dilution factor (ratio of receiving stream flow to effluent flow) shall not exceed one unless otherwise approved by the EQC;~~

~~(d) Sewage wastes shall be disinfected, after treatment, equivalent to thorough mixing with sufficient chlorine to provide a residual of at least one part per million after 60 minutes of contact time unless otherwise specifically authorized by permit;~~

~~(e) Positive protection shall be provided to prevent bypassing raw or inadequately treated sewage to public waters unless otherwise approved by the Department where elimination of inflow and infiltration would be necessary but not presently practicable;~~

~~(f) More stringent waste treatment and control requirements may be imposed where special conditions may require.~~

~~(2) Industrial wastes:~~

~~(a) After maximum practicable inplant control, a minimum of secondary treatment or equivalent control, (reduction of suspended solids and organic material where present in significant quantities, effective disinfection where bacterial organisms of public health significance are present, and control of toxic or other deleterious substances);~~

~~(b) Specific industrial waste treatment requirements shall be determined on an individual basis in accordance with the provisions of this plan, applicable federal requirements and the following:~~

~~(A) The uses which are or may likely be made of the receiving stream;~~

~~(B) The size and nature of flow of the receiving stream;~~

~~(C) The quantity and quality of wastes to be treated; and~~

~~(D) The presence or absence of other sources of pollution on the same watershed.~~

~~(c) Where industrial, commercial, or agricultural effluents contain significant quantities of potentially toxic elements, treatment requirements shall be determined utilizing appropriate bioassays;~~

~~(d) Industrial cooling waters containing significant heat loads shall be subjected to offstream cooling or heat recovery prior to discharge to public waters;~~

(e) Positive protection shall be provided to prevent bypassing of raw or inadequately treated industrial wastes to any public waters;

(f) Facilities shall be provided to prevent and contain spills of potentially toxic or hazardous materials and a positive program for containment and cleanup of such spills, should they occur, shall be developed and maintained.

Stat. Auth.: ORS 468
Stats. Implemented: ORS 468B.030
Hist.: DEQ 128, f. & ef. 1-21-77

Owyhee Basin

340-041-0842

Beneficial Water Uses to be Protected

Water quality in the Owyhee River Basin (see **Figures 1** and **17**) shall be managed to protect the recognized beneficial uses as indicated in **Table 16**.

[ED. NOTE: The Figure(s) and Table referenced in this rule are not printed in the OAR Compilation. Copies are available from the agency.]

Stat. Auth.: ORS 468
Stats. Implemented: ORS 468B.048
Hist.: DEQ 128, f. & ef. 1-27-77; DEQ 9-1985, f. & ef. 8-6-85

340-041-0845

Water Quality Standards Not to be Exceeded (To be Adopted Pursuant to ORS 468.735 and Enforceable Pursuant to ORS 468.720, 468. 990, and 468.992)

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

(2) No wastes shall be discharged and no activities shall be conducted which either alone or in combination with other wastes or activities will cause violation of the following standards in the waters of the Owyhee River Basin:

(a) Dissolved oxygen (DO): The changes adopted by the Commission on January 11, 1996, become effective July 1, 1996. Until that time, the requirements of this rule that were in effect on January 10, 1996, apply:

~~(A) For waterbodies identified by the Department as providing salmonid spawning, during the periods from spawning until fry emergence from the gravels, the following criteria apply:~~

~~(i) The dissolved oxygen shall not be less than 11.0 mg/l. However, if the minimum intergravel dissolved oxygen, measured as a spatial median, is 8.0 mg/l or greater, then the DO criterion is 9.0 mg/l;~~

~~(ii) Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 11.0 mg/l or 9.0 mg/l criteria, dissolved oxygen levels shall not be less than 95 percent of saturation.~~

~~(B) For waterbodies identified by the Department as providing salmonid spawning during the period from spawning until fry emergence from the gravels, the spatial median intergravel dissolved oxygen concentration shall not fall below 6.0 mg/l;~~

~~(C) A spatial median of 8.0 mg/l intergravel dissolved oxygen level shall be used to identify areas where the recognized beneficial use of salmonid spawning, egg incubation and fry emergence from the egg and from the gravels may be impaired and therefore require action by the Department. Upon determination that the spatial median intergravel dissolved oxygen concentration is below 8.0 mg/l, the Department may, in accordance with priorities established by the Department for evaluating water quality impaired waterbodies, determine whether to list the waterbody as water quality limited under the Section 303(d) of the Clean Water Act, initiate pollution control strategies as warranted, and where needed cooperate with appropriate designated management agencies to evaluate and implement necessary best management practices for nonpoint source pollution control;~~

~~(D) For waterbodies identified by the Department as providing cold water aquatic life, the dissolved oxygen shall not be less than 8.0 mg/l as an absolute minimum. Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 8.0 mg/l, dissolved oxygen shall not be less than 90 percent of saturation. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 8.0 mg/l as a 30 day mean minimum, 6.5 mg/l as a seven day minimum mean, and shall not fall below 6.0 mg/l as an absolute minimum (**Table 21**);~~

~~(E) For waterbodies identified by the Department as providing cool water aquatic life, the dissolved oxygen shall not be less than 6.5 mg/l as an absolute minimum. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 6.5 mg/l as a 30 day mean minimum, 5.0 mg/l as a seven day minimum mean, and shall not fall below 4.0 mg/l as an absolute minimum (**Table 21**);~~

~~(F) For waterbodies identified by the Department as providing warm water aquatic life, the dissolved oxygen shall not be less than 5.5 mg/l as an absolute minimum. At the~~

~~discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 5.5 mg/l as a 30-day mean minimum, and shall not fall below 4.0 mg/l as an absolute minimum (**Table 21**);~~

~~(b) Temperature: The changes adopted by the Commission on January 11, 1996, become effective July 1, 1996. Until that time, the requirements of this rule that were in effect on January 10, 1996, apply. The method for measuring the numeric temperature criteria specified in this rule is defined in OAR 340-041-0006(54):~~

~~(A) To accomplish the goals identified in OAR 340-041-0120(11), unless specifically allowed under a Department-approved surface water temperature management plan as required under OAR 340-041-0026(3)(a)(D), no measurable surface water temperature increase resulting from anthropogenic activities is allowed:~~

~~(i) In a basin for which salmonid fish rearing is a designated beneficial use, and in which surface water temperatures exceed 64.0°F (17.8°C);~~

~~(ii) In waters and periods of the year determined by the Department to support native salmonid spawning, egg incubation, and fry emergence from the egg and from the gravels in a basin which exceeds 55.0°F (12.8°C);~~

~~(iii) In waters determined by the Department to support or to be necessary to maintain the viability of native Oregon bull trout, when surface water temperatures exceed 50.0°F (10.0°C);~~

~~(iv) In waters determined by the Department to be ecologically significant cold-water refugia;~~

~~(v) In stream segments containing federally listed Threatened and Endangered species if the increase would impair the biological integrity of the Threatened and Endangered population;~~

~~(vi) In Oregon waters when the dissolved oxygen (DO) levels are within 0.5 mg/l or 10 percent saturation of the water column or intergravel DO criterion for a given stream reach or subbasin;~~

~~(vii) In natural lakes.~~

~~(B) An exceedance of the numeric criteria identified in subparagraphs (A)(i) through (iii) of this subsection will not be deemed a temperature standard violation if it occurs when the air temperature during the warmest seven-day period of the year exceeds the 90th percentile of the seven-day average daily maximum air temperature calculated in a yearly series over the historic record. However, during such periods, the anthropogenic sources must still continue to comply with their surface water temperature management plans developed under OAR 340-041-0026(3)(a)(D);~~

~~(C) Any source may petition the Commission for an exception to subparagraphs (A)(i) through (vii) of this subsection for discharge above the identified criteria if:~~

~~(i) The source provides the necessary scientific information to describe how the designated beneficial uses would not be adversely impacted; or~~

~~(ii) A source is implementing all reasonable management practices or measures; its activity will not significantly affect the beneficial uses; and the environmental cost of treating the parameter to the level necessary to assure full protection would outweigh the risk to the resource.~~

~~(c) Turbidity (Nephelometric Turbidity Units, NTU): No more than a ten percent cumulative increase in natural stream turbidities shall be allowed, as measured relative to a control point immediately upstream of the turbidity causing activity. However, limited duration activities necessary to address an emergency or to accommodate essential dredging, construction or other legitimate activities and which cause the standard to be exceeded may be authorized provided all practicable turbidity control techniques have been applied and one of the following has been granted:~~

~~(A) Emergency activities: Approval coordinated by DEQ with the Department of Fish and Wildlife under conditions they may prescribe to accommodate response to emergencies or to protect public health and welfare;~~

~~(B) Dredging, Construction or other Legitimate Activities: Permit certification authorized under terms of Section 401 or 404 (Permits and Licenses, Federal Water Pollution Control Act) or OAR 141-085-0100 et seq. (Removal and Fill Permits, Division of State Lands), with limitations and conditions governing the activity set forth in the permit or certificate.~~

~~(d) pH (hydrogen ion concentration): pH values shall not fall outside the range of 7.0 to 9.0. When greater than 25 percent of ambient measurements taken between June and September are greater than pH 8.7, and as resources are available according to priorities set by the Department, the Department shall determine whether the values higher than 8.7 are anthropogenic or natural in origin. The following exception applies: Waters impounded by dams existing on January 1, 1996, which have pHs that exceed the criteria shall not be considered in violation of the standard if the Department determines that the exceedance would not occur without the impoundment and that all practicable measures have been taken to bring the pH in the impounded waters into compliance with the criteria;~~

~~(e) Bacteria standards:~~

~~(A) Numeric Criteria: Organisms of the coliform group commonly associated with fecal sources (MPN or equivalent membrane filtration using a representative number of samples) shall not exceed the criteria described in subparagraphs (i) and (ii) of this paragraph. Freshwaters:~~

~~(i) A 30-day log mean of 126 *E. coli* organisms per 100 ml, based on a minimum of five (5) samples;~~

~~(ii) No single sample shall exceed 406 *E. coli* organisms per 100 ml.~~

~~(B) Raw Sewage Prohibition: No sewage shall be discharged into or in any other manner be allowed to enter the waters of the State unless such sewage has been treated in a manner approved by the Department or otherwise allowed by these rules;~~

~~(C) Animal Waste: Runoff contaminated with domesticated animal wastes shall be minimized and treated to the maximum extent practicable before it is allowed to enter waters of the State;~~

~~(D) Effluent Limitations and Water Quality Limited Waterbodies: Effluent limitations to implement the criteria in this rule are found in OAR 340-041-0120(12) through (16). Implementation of the criteria in this rule in water quality limited waterbodies is described in OAR 340-041-0026(3)(a)(I) and OAR 340-041-0120(17).~~

~~(f) Bacterial pollution or other conditions deleterious to waters used for domestic purposes, livestock watering, irrigation, or bathing, or otherwise injurious to public health shall not be allowed;~~

~~(g) The liberation of dissolved gases, such as carbon dioxide, hydrogen sulfide, or other gases, in sufficient quantities to cause objectionable odors or to be deleterious to fish or other aquatic life, navigation, recreation, or other reasonable uses made of such waters shall not be allowed;~~

~~(h) The development of fungi or other growths having a deleterious effect on stream bottoms, fish or other aquatic life, or which are injurious to health, recreation, or industry shall not be allowed;~~

~~(i) The creation of tastes or odors or toxic or other conditions that are deleterious to fish or other aquatic life or affect the potability of drinking water or the palatability of fish shall not be allowed;~~

~~(j) The formation of appreciable bottom or sludge deposits or the formation of any organic or inorganic deposits deleterious to fish or other aquatic life or injurious to public health, recreation, or industry shall not be allowed;~~

~~(k) Objectionable discoloration, scum, oily sleek or floating solids, or coating of aquatic life with oil films shall not be allowed;~~

~~(l) Aesthetic conditions offensive to the human senses of sight, taste, smell, or touch shall not be allowed;~~

~~(m) Radioisotope concentrations shall not exceed maximum permissible concentrations (MPC's) in drinking water, edible fishes, wildlife, irrigated crops, livestock and dairy products, or pose an external radiation hazard;~~

~~(n) The concentration of total dissolved gas relative to atmospheric pressure at the point of sample collection shall not exceed 110 percent of saturation, except when stream flow exceeds the ten year, seven day average flood. However, for Hatchery receiving waters and waters of less than two feet in depth, the concentration of total dissolved gas relative to atmospheric pressure at the point of sample collection shall not exceed 105 percent of saturation;~~

~~(o) Total Dissolved Solids: Guide concentrations listed below shall not be exceeded unless otherwise specifically authorized by DEQ upon such conditions as it may deem necessary to carry out the general intent of this plan and to protect the beneficial uses set forth in OAR 340-041-0842: Snake River -- 750.0 mg/l;~~

~~(p) Toxic Substances:~~

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

~~(B) Levels of toxic substances shall not exceed the criteria listed in~~ **Table 20** ~~which were based on criteria established by EPA and published in~~ **Quality Criteria for Water (1986)**~~, unless otherwise noted;~~

~~(C) The criteria in paragraph (B) of this subsection shall apply unless data from scientifically valid studies demonstrate that the most sensitive designated beneficial uses will not be adversely affected by exceeding a criterion or that a more restrictive criterion is warranted to protect beneficial uses, as accepted by the Department on a site specific basis. Where no published EPA criteria exist for a toxic substance, public health advisories and other published scientific literature may be considered and used, if appropriate, to set guidance values;~~

~~(D) Bio-assessment studies such as laboratory bioassays or instream measurements of indigenous biological communities, shall be conducted, as the Department deems necessary, to monitor the toxicity of complex effluents, other suspected discharges or chemical substances without numeric criteria, to aquatic life. These studies, properly conducted in accordance with standard testing procedures, may be considered as scientifically valid data for the purposes of paragraph (C) of this subsection. If toxicity occurs, the Department shall evaluate and implement measures necessary to reduce toxicity on a case-by-case basis.~~

~~(3) Where the naturally occurring quality parameters of waters of the Owyhee River Basin are outside the numerical limits of the above assigned water quality standards, the naturally occurring water quantity shall be the standard. However, in such cases special restrictions, described in OAR 340-041-0026(3)(a)(C)(iii), apply to discharges that affect dissolved oxygen.~~

~~(4) Mixing zones:~~

~~(a) The Department may allow a designated portion of a receiving water to serve as a zone of dilution for wastewaters and receiving waters to mix thoroughly and this zone will be defined as a mixing zone;~~

~~(b) The Department may suspend all or part of the water quality standards, or set less restrictive standards, in the defined mixing zone, provided that the following conditions are met:~~

~~(A) The water within the mixing zone shall be free of:~~

~~(i) Materials in concentrations that will cause acute toxicity to aquatic life as measured by a Department approved bioassay method. Acute toxicity is lethality to aquatic life as measured by a significant difference in lethal concentration between the control and 100 percent effluent in an acute bioassay test. Lethality in 100 percent effluent may be allowed due to ammonia and chlorine only when it is demonstrated on a case-by-case basis that immediate dilution of the effluent within the mixing zone reduces toxicity below lethal concentrations. The Department may on a case-by-case basis establish a zone of immediate dilution if appropriate for other parameters;~~

~~(ii) Materials that will settle to form objectionable deposits;~~

~~(iii) Floating debris, oil, scum, or other materials that cause nuisance conditions;~~

~~(iv) Substances in concentrations that produce deleterious amounts of fungal or bacterial growths.~~

~~(B) The water outside the boundary of the mixing zone shall:~~

~~(i) Be free of materials in concentrations that will cause chronic (sublethal) toxicity. Chronic toxicity is measured as the concentration that causes long-term sublethal effects, such as significantly impaired growth or reproduction in aquatic organisms, during a testing period based on test species life cycle. Procedures and end points will be specified by the Department in wastewater discharge permits.~~

~~(ii) Meet all other water quality standards under normal annual low flow conditions.~~

~~(c) The limits of the mixing zone shall be described in the wastewater discharge permit. In determining the location, surface area, and volume of a mixing zone area, the~~

~~Department may use appropriate mixing zone guidelines to assess the biological, physical, and chemical character of receiving waters, and effluent, and the most appropriate placement of the outfall, to protect instream water quality, public health, and other beneficial uses. Based on receiving water and effluent characteristics, the Department shall define a mixing zone in the immediate area of a wastewater discharge to:~~

~~(A) Be as small as feasible;~~

~~(B) Avoid overlap with any other mixing zones to the extent possible and be less than the total stream width as necessary to allow passage of fish and other aquatic organisms;~~

~~(C) Minimize adverse effects on the indigenous biological community especially when species are present that warrant special protection for their economic importance, tribal significance, ecological uniqueness, or for other similar reasons as determined by the Department and does not block the free passage of aquatic life;~~

~~(D) Not threaten public health;~~

~~(E) Minimize adverse effects on other designated beneficial uses outside the mixing zone.~~

~~(d) The Department may request the applicant of a permitted discharge for which a mixing zone is required, to submit all information necessary to define a mixing zone, such as:~~

~~(A) Type of operation to be conducted;~~

~~(B) Characteristics of effluent flow rates and composition;~~

~~(C) Characteristics of low flows of receiving waters;~~

~~(D) Description of potential environmental effects;~~

~~(E) Proposed design for outfall structures.~~

~~(e) The Department may, as necessary, require mixing zone monitoring studies and/or bioassays to be conducted to evaluate water quality or biological status within and outside the mixing zone boundary;~~

~~(f) The Department may change mixing zone limits or require the relocation of an outfall if it determines that the water quality within the mixing zone adversely affects any existing beneficial uses in the receiving waters.~~

~~(g) **Alternate requirements for mixing zones**: For some existing or proposed discharges to some receiving streams, it may not be practicable to treat wastewater to meet instream water quality standards at the point of discharge or within a short distance from the point~~

~~of discharge. Some of these discharges could be allowed without impairing the overall ecological integrity of the receiving streams, or may provide an overall benefit to the receiving stream. This section specifies the conditions and circumstances under which a mixing zone may be allowed by the Department that extends beyond the immediate area around a discharge point, or that extends across a stream width. An alternate mixing zone may be approved if the applicant demonstrates to the Department's satisfaction that the discharge (A) creates an overall environmental benefit, or (B) is to a constructed water course, or (C) is insignificant. The three circumstances under which alternate mixing zones may be established are described further below.~~

~~(A) **Overall environmental benefit.**~~

~~(i) Qualifying for alternate mixing zone based on overall environmental benefit: In order to qualify for an alternate mixing zone based on a finding of overall environmental benefit, the discharger must demonstrate to the Department's satisfaction the following:~~

~~(I) That all practical strategies have been or will be implemented to minimize the pollutant loads in the effluent; and~~

~~(II) For proposed increased discharges, the current actual discharge and mixing zone does not meet the requirements of a standard mixing zone; and~~

~~(III) Either that, on balance, an environmental benefit would be lost if the discharge did not occur, or that the discharger is prepared to undertake other actions that will mitigate the effect of the discharge to an extent resulting in a net environmental benefit to the receiving stream.~~

~~(IV) For the purposes of this rule, the term "practical" shall include environmental impact, availability of alternatives, cost of alternatives, and other relevant factors.~~

~~(ii) Studies required and evaluation of studies: In order to demonstrate that, on balance, an environmental benefit will result from the discharge, the following information shall be provided by the applicant:~~

~~(I) The effluent flow and pollutant loads that are detected or expected in the effluent, by month, both average and expected worst case discharges. The parameters to be evaluated include at a minimum temperature, biochemical oxygen demand, total suspended solids, total dissolved solids, pH, settleable solids, e. coli bacteria, oil and grease, any pollutants listed in Table 20 of this rule division, and any pollutant for which the receiving stream has been designated by the Department as water quality limited; and~~

~~(II) Receiving stream flow, by month; and~~

~~(III) The expected impact of the discharge, by month, on the receiving stream for the entire proposed mixing zone area for all of the pollutants listed above. Included in this~~

~~analysis shall be a comparison of the receiving stream water quality with the discharge and without the discharge; and~~

~~(IV) A description of fish, other vertebrate populations, and macroinvertebrates that reside in or are likely to pass through the proposed mixing zone, including expected location (if known), species identification, stage of development, and time of year when their presence is expected. For existing discharges, the applicant shall provide the same information for similar nearby streams that are unaffected by wastewater discharges. In addition, any threatened or endangered species in the immediate vicinity of the receiving stream shall be identified; and~~

~~(V) The expected impact of the discharge on aquatic organisms and/or fish passage, including any expected negative impacts from the effluent attracting fish where that is not desirable; and~~

~~(VI) A description of the expected environmental benefits to be derived from the discharge or other mitigation measures proposed by the applicant, including but not limited to improvements in water quality, improvements in fish passage, and improvements in aquatic habitat. If the applicant proposes to undertake mitigation measures designed to provide environmental benefits (e.g., purchasing water or water conservation rights to increase stream flows or establishing stream cover to decrease temperature), the applicant shall describe the mitigation measures in detail, including a description of the steps it will take to ensure that the benefits of the mitigation measures are attained and are not lost or diminished over time.~~

~~(VII) Some or all of the above study requirements may be waived by the Department, if the Department determines that the information is not needed. In the event that the Department does waive some or all of the above study requirements, the basis for waiving the requirements will be included in the permit evaluation report upon the next permit renewal or modification relating to the mixing zone.~~

~~(VIII) Upon request of the Department, the applicant shall conduct additional studies to further evaluate the impact of the discharge, which may include whole effluent toxicity testing, stream surveys for water quality, stream surveys for fish and other aquatic organisms, or other studies as specified by the Department.~~

~~(IX) In evaluating whether an existing or proposed increase in an existing discharge would result in a net environmental benefit, the applicant shall use the native biological community in a nearby, similar stream that is unaffected by wastewater discharges. The Department shall consider all information generated as required in this rule and other relevant information. The evaluation shall consider benefits to the native aquatic biological community only.~~

~~(iii) Permit conditions: Upon determination by the Department that the discharge and mitigation measures (if any) will likely result in an overall environmental benefit, the Department shall include appropriate permit conditions to insure that the environmental~~

benefits are attained and continue. Such permit conditions may include but not be limited to:

(I) Maximum allowed effluent flows and pollutant loads;

(II) Requirements to maintain land ownership, easements, contracts, or other legally binding measures necessary to assure that mitigation measures, if any, remain in place and effective;

(III) Special operating conditions;

(IV) Monitoring and reporting requirements; and

(V) Studies to evaluate the effectiveness of mitigation measures.

(B) **Constructed water course**: A mixing zone may be extended through a constructed water course and into a natural water course. For the purposes of this rule, a constructed water course is one that was constructed for irrigation, site drainage, or wastewater conveyance, and has the following characteristics:

(i) Irrigation flows, stormwater runoff, or wastewater flows have replaced natural streamflow regimes; and

(ii) The channel form is greatly simplified in lengthwise and cross-sectional profiles; and

(iii) Physical and biological characteristics that differ significantly from nearby natural streams; and

(iv) A much lower diversity of aquatic species than found in nearby natural streams; and

(v) If the constructed water course is an irrigation canal, then it must have effective fish screens in place to qualify as a constructed water course.

(C) **Insignificant discharges**: Insignificant discharges are those that either by volume, pollutant characteristics, and/or temporary nature are expected to have little if any impact on beneficial uses in the receiving stream, and for which the extensive evaluations required for discharges to smaller streams are not warranted. For the purposes of this rule, only filter backwash discharges and underground storage tank cleanups are considered insignificant discharges.

(D) **Other requirements for alternate mixing zones**: The following are additional requirements for dischargers requesting an alternate mixing zone:

(i) Most discharges that qualify for an alternate mixing zone will extend through the receiving stream until a larger stream is reached, where thorough mixing of the effluent can occur and where the edge of the allowed mixing zone will be located. The portion of

~~the mixing zone in the larger stream must meet all of the requirements of the standard mixing zone, including not blocking aquatic life passage; and~~

~~(ii) An alternate mixing zone shall not be granted if a municipal drinking water intake is located within the proposed mixing zone, and the discharge has a significant adverse impact on the drinking water source; and~~

~~(iii) The discharge will not pose an unreasonable hazard to the environment or pose a significant health risk, considering the likely pathways of exposure; and~~

~~(iv) The discharge shall not be acutely toxic to organisms passing through the mixing zone; and~~

~~(v) An alternate mixing zone shall not be granted if the substances discharged may accumulate in the sediments or bioaccumulate in aquatic life or wildlife to levels that adversely affect public health, safety, or welfare; aquatic life; wildlife; or other designated beneficial uses; and~~

~~(vi) In the event that the receiving stream is water quality limited, the requirements for discharges to water quality limited streams supersede this rule.~~

~~(5) Testing methods: The analytical testing methods for determining compliance with the water quality standards contained in this rule shall be in accordance with the most recent edition of **Standard Methods for the Examination of Water and Waste Water published jointly by the American Public Health Association, American Water Works Association, and Water Pollution Control Federation**, unless the Department has published an applicable superseding method, in which case testing shall be in accordance with the superseding method; provided, however, that testing in accordance with an alternative method shall comply with this rule if the Department has published the method or has approved the method in writing.~~

~~[ED. NOTE: The Table(s) referenced in this rule is not printed in the OAR Compilation. Copies are available from the agency.]~~

~~[Publications: The publication(s) referred to or incorporated by reference in this rule are available from the office of the agency.]~~

~~Stat. Auth.: ORS 468.735, ORS 468B.035 & ORS 468B.048~~
~~Stats. Implemented: ORS 468B.048~~
~~Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 1-1980, f. & ef. 1-9-80; DEQ 18-1987, f. & ef. 9-4-87; DEQ 14-1991, f. & cert. ef. 8-13-91; DEQ 17-1992, f. & cert. ef. 8-7-92 (and corrected 8-13-92); DEQ 21-1995(Temp), f. & cert. ef. 9-21-95; DEQ 5-1996, f. & cert. ef. 3-7-96; DEQ 22-1997, f. & cert. ef. 10-24-97~~

~~340-041-0855~~

Minimum Design Criteria for Treatment and Control of Wastes

Subject to the implementation program set forth in OAR 340-041-0120, prior to discharge of any wastes from any new or modified facility to any waters of the Owyhee River Basin, such wastes shall be treated and controlled in facilities designed in accordance with the following minimum criteria. (In designing treatment facilities, average conditions and a normal range of variability are generally used in establishing design criteria. A facility once completed and placed in operation should operate at or near the design limit most of the time but may operate below the design criteria for biological treatment facilities. The actual operating limits are intended to be established by permit pursuant to ORS 468.740 and recognize that the actual performance level may at times, be less than the design criteria.):

(1) Sewage wastes:

(a) A minimum of secondary treatment or equivalent control and unless otherwise specifically authorized by the Department, operation of all waste treatment and control facilities at maximum practicable efficiency and effectiveness so as to minimize waste discharges to public waters;

(b) Effluent BOD concentrations in mg/l, divided by the dilution factor (ratio of receiving stream flow to effluent flow) shall not exceed one unless otherwise approved by the EQC;

(c) Sewage wastes shall be disinfected, after treatment, equivalent to thorough mixing with sufficient chlorine to provide a residual of at least 1 part per million after 60 minutes of contact time unless otherwise specifically authorized by permit;

(d) Positive protection shall be provided to prevent bypassing raw or inadequately treated sewage to public waters unless otherwise approved by the Department where elimination of inflow and infiltration would be necessary but not presently practicable;

(e) More stringent waste treatment and control requirements may be imposed where special conditions may require.

(2) Industrial wastes:

(a) After maximum practicable inplant control, a minimum of secondary treatment or equivalent control (reduction of suspended solids and organic material where present in significant quantities, effective disinfection where bacterial organisms of public health significance are present, and control of toxic or other deleterious substances);

(b) Specific industrial waste treatment requirements shall be determined on an individual basis in accordance with the provisions of this plan, applicable federal requirements and the following:

(A) The uses which are or may likely be made of the receiving stream;

(B) The size and nature of flow of the receiving stream;

(C) The quantity and quality of wastes to be treated; and

(D) The presence or absence of other sources of pollution on the same watershed.

(c) Where industrial, commercial, or agricultural effluents contain significant quantities of potentially toxic elements, treatment requirements shall be determined utilizing appropriate bioassays;

(d) Industrial cooling waters containing significant heat loads shall be subjected to offstream cooling or heat recovery prior to discharge to public waters;

(e) Positive protection shall be provided to prevent bypassing of raw or inadequately treated industrial wastes to any public waters;

(f) Facilities shall be provided to prevent and contain spills of potentially toxic or hazardous material and a positive program for containment and cleanup of such spills should they occur shall be developed and maintained.

Stat. Auth.: ORS 468
Stats. Implemented: ORS 468B.030
Hist.: DEQ 128, f. & ef. 1-21-77

Malheur Lake Basin

340-041-0882

Beneficial Water Uses to be Protected

Water quality in the Malheur Lake Basin (see **Figures 1** and **18**) shall be managed to protect the recognized beneficial uses as indicated in **Table 17**.

[ED. NOTE: The Figure(s) and Table referenced in this rule are not printed in the OAR Compilation. Copies are available from the agency.]

Stat. Auth.: ORS 468
Stats. Implemented: ORS 468B.048
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 9-1985, f. & ef. 8-6-85

340-041-0885

Water Quality Standards Not to be Exceeded (To be Adopted Pursuant to ORS 468.735 and Enforceable Pursuant to ORS 468.720, 468.990 and 468.992)

~~(1) Notwithstanding the water quality standards contained below, the highest and best practicable treatment and/or control of wastes, activities, and flows shall in every case be provided so as to maintain dissolved oxygen and overall water quality at the highest possible levels and water temperatures, coliform bacteria concentrations, dissolved chemical substances, toxic materials, radioactivity, turbidities, color, odor, and other deleterious factors at the lowest possible levels.~~

~~(2) No wastes shall be discharged and no activities shall be conducted which either alone or in combination with other wastes or activities will cause violation of the following standards in the waters of the Malheur Lake Basin:~~

~~(a) Dissolved oxygen (DO): The changes adopted by the Commission on January 11, 1996, become effective July 1, 1996. Until that time, the requirements of this rule that were in effect on January 10, 1996, apply:~~

~~(A) For waterbodies identified by the Department as providing salmonid spawning, during the periods from spawning until fry emergence from the gravels, the following criteria apply:~~

~~(i) The dissolved oxygen shall not be less than 11.0 mg/l. However, if the minimum intergravel dissolved oxygen, measured as a spatial median, is 8.0 mg/l or greater, then the DO criterion is 9.0 mg/l;~~

~~(ii) Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 11.0 mg/l or 9.0 mg/l criteria, dissolved oxygen levels shall not be less than 95 percent of saturation.~~

~~(B) For waterbodies identified by the Department as providing salmonid spawning during the period from spawning until fry emergence from the gravels, the spatial median intergravel dissolved oxygen concentration shall not fall below 6.0 mg/l;~~

~~(C) A spatial median of 8.0 mg/l intergravel dissolved oxygen level shall be used to identify areas where the recognized beneficial use of salmonid spawning, egg incubation and fry emergence from the egg and from the gravels may be impaired and therefore require action by the Department. Upon determination that the spatial median intergravel dissolved oxygen concentration is below 8.0 mg/l, the Department may, in accordance with priorities established by the Department for evaluating water quality impaired waterbodies, determine whether to list the waterbody as water quality limited under the Section 303(d) of the Clean Water Act, initiate pollution control strategies as warranted, and where needed cooperate with appropriate designated management agencies to evaluate and implement necessary best management practices for nonpoint source pollution control;~~

~~(D) For waterbodies identified by the Department as providing cold water aquatic life, the dissolved oxygen shall not be less than 8.0 mg/l as an absolute minimum. Where conditions of barometric pressure, altitude, and temperature preclude attainment of the~~

~~8.0 mg/l, dissolved oxygen shall not be less than 90 percent of saturation. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 8.0 mg/l as a 30-day mean minimum, 6.5 mg/l as a seven-day minimum mean, and shall not fall below 6.0 mg/l as an absolute minimum (**Table 21**);~~

~~(E) For waterbodies identified by the Department as providing cool-water aquatic life, the dissolved oxygen shall not be less than 6.5 mg/l as an absolute minimum. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 6.5 mg/l as a 30-day mean minimum, 5.0 mg/l as a seven-day minimum mean, and shall not fall below 4.0 mg/l as an absolute minimum (**Table 21**);~~

~~(F) For waterbodies identified by the Department as providing warm-water aquatic life, the dissolved oxygen shall not be less than 5.5 mg/l as an absolute minimum. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 5.5 mg/l as a 30-day mean minimum, and shall not fall below 4.0 mg/l as an absolute minimum (**Table 21**);~~

~~(b) Temperature: The changes adopted by the Commission on January 11, 1996, become effective July 1, 1996. Until that time, the requirements of this rule that were in effect on January 10, 1996, apply. The method for measuring the numeric temperature criteria specified in this rule is defined in OAR 340-041-0006(54):~~

~~(A) To accomplish the goals identified in OAR 340-041-0120(11), unless specifically allowed under a Department-approved surface water temperature management plan as required under OAR 340-041-0026(3)(a)(D), no measurable surface water temperature increase resulting from anthropogenic activities is allowed:~~

~~(i) In a basin for which salmonid fish rearing is a designated beneficial use, and in which surface water temperatures exceed 64.0°F (17.8°C);~~

~~(ii) In waters and periods of the year determined by the Department to support native salmonid spawning, egg incubation, and fry emergence from the egg and from the gravels in a basin which exceeds 55.0°F (12.8°C);~~

~~(iii) In waters determined by the Department to support or to be necessary to maintain the viability of native Oregon bull trout, when surface water temperatures exceed 50.0°F (10.0°C);~~

~~(iv) In waters determined by the Department to be ecologically significant cold-water refugia;~~

~~(v) In stream segments containing federally listed Threatened and Endangered species if the increase would impair the biological integrity of the Threatened and Endangered population;~~

~~(vi) In Oregon waters when the dissolved oxygen (DO) levels are within 0.5 mg/l or 10 percent saturation of the water column or intergravel DO criterion for a given stream reach or subbasin;~~

~~(vii) In natural lakes.~~

~~(B) An exceedance of the numeric criteria identified in subparagraphs (A)(i) through (iii) of this subsection will not be deemed a temperature standard violation if it occurs when the air temperature during the warmest seven-day period of the year exceeds the 90th percentile of the seven-day average daily maximum air temperature calculated in a yearly series over the historic record. However, during such periods, the anthropogenic sources must still continue to comply with their surface water temperature management plans developed under OAR 340-041-0026(3)(a)(D);~~

~~(C) Any source may petition the Commission for an exception to subparagraphs (A)(i) through (vii) of this subsection for discharge above the identified criteria if:~~

~~(i) The source provides the necessary scientific information to describe how the designated beneficial uses would not be adversely impacted; or~~

~~(ii) A source is implementing all reasonable management practices or measures; its activity will not significantly affect the beneficial uses; and the environmental cost of treating the parameter to the level necessary to assure full protection would outweigh the risk to the resource.~~

~~(c) Turbidity (Nephelometric Turbidity Units, NTU): No more than a ten percent cumulative increase in natural stream turbidities shall be allowed, as measured relative to a control point immediately upstream of the turbidity causing activity. However, limited duration activities necessary to address an emergency or to accommodate essential dredging, construction or other legitimate activities and which cause the standard to be exceeded may be authorized provided all practicable turbidity control techniques have been applied and one of the following has been granted:~~

~~(A) Emergency activities: Approval coordinated by DEQ with the Department of Fish and Wildlife under conditions they may prescribe to accommodate response to emergencies or to protect public health and welfare;~~

~~(B) Dredging, Construction or other Legitimate Activities: Permit or certification authorized under terms of Section 401 or 404 (Permits and Licenses, Federal Water Pollution Control Act) or OAR 141-085-0100 et seq. (Removal and Fill Permits, Division of State Lands), with limitations and conditions governing the activity set forth in the permit or certificate.~~

~~(d) pH (hydrogen ion concentration): pH values shall not fall outside the range of 7.0 to 9.0. When greater than 25 percent of ambient measurements taken between June and September are greater than pH 8.7, and as resources are available according to priorities~~

~~set by the Department, the Department shall determine whether the values higher than 8.7 are anthropogenic or natural in origin. The following exception applies: Waters impounded by dams existing on January 1, 1996, which have pHs that exceed the criteria shall not be considered in violation of the standard if the Department determines that the exceedance would not occur without the impoundment and that all practicable measures have been taken to bring the pH in the impounded waters into compliance with the criteria;~~

~~(e) Bacteria standards:~~

~~(A) Numeric Criteria: Organisms of the coliform group commonly associated with fecal sources (MPN or equivalent membrane filtration using a representative number of samples) shall not exceed the criteria described in subparagraphs (i) and (ii) of this paragraph. Freshwaters:~~

~~(i) A 30-day log mean of 126 *E. coli* organisms per 100 ml, based on a minimum of five (5) samples;~~

~~(ii) No single sample shall exceed 406 *E. coli* organisms per 100 ml.~~

~~(B) Raw Sewage Prohibition: No sewage shall be discharged into or in any other manner be allowed to enter the waters of the State unless such sewage has been treated in a manner approved by the Department or otherwise allowed by these rules;~~

~~(C) Animal Waste: Runoff contaminated with domesticated animal wastes shall be minimized and treated to the maximum extent practicable before it is allowed to enter waters of the State;~~

~~(D) Effluent Limitations and Water Quality Limited Waterbodies: Effluent limitations to implement the criteria in this rule are found in OAR 340-041-0120(12) through (16). Implementation of the criteria in this rule in water quality limited waterbodies is described in OAR 340-041-0026(3)(a)(I) and OAR 340-041-0120(17).~~

~~(f) Bacterial pollution or other conditions deleterious to waters used for domestic purposes, livestock watering, irrigation, or bathing, or otherwise injurious to public health shall not be allowed;~~

~~(g) The liberation of dissolved gases, such as carbon dioxide, hydrogen sulfide, or other gases, in sufficient quantities to cause objectionable odors or to be deleterious to fish or other aquatic life, navigation, recreation, or other reasonable uses made of such waters shall not be allowed;~~

~~(h) The development of fungi or other growths having a deleterious effect on stream bottoms, fish or other aquatic life, or which are injurious to health, recreation, or industry shall not be allowed;~~

~~(i) The creation of tastes or odors or toxic or other conditions that are deleterious to fish or other aquatic life or affect the potability of drinking water or the palatability of fish or shellfish shall not be allowed;~~

~~(j) The formation of appreciable bottom or sludge deposits or the formation of any organic or inorganic deposits deleterious to fish or other aquatic life or injurious to public health, recreation, or industry shall not be allowed;~~

~~(k) Objectionable discoloration, scum, oily sleek or floating solids, or coating of aquatic life with oil films shall not be allowed;~~

~~(l) Aesthetic conditions offensive to the human senses of sight, taste, smell, or touch shall not be allowed;~~

~~(m) Radioisotope concentrations shall not exceed maximum permissible concentrations (MPCs) in drinking water, edible fishes, wildlife, irrigated crops, livestock and dairy products, or pose an external radiation hazard;~~

~~(n) The concentration of total dissolved gas relative to atmospheric pressure at the point of sample collection shall not exceed 110 percent of saturation, except when stream flow exceeds the ten-year, seven-day average flood. However, for Hatchery receiving waters and waters of less than two feet in depth, the concentration of total dissolved gas relative to atmospheric pressure at the point of sample collection shall not exceed 105 percent of saturation;~~

~~(o) Total Dissolved Solids: Guide concentrations listed below shall not be exceeded unless otherwise specifically authorized by DEQ upon such conditions as it may deem necessary to carry out the general intent of this plan and to protect the beneficial uses set forth in OAR 340-041-0882: None;~~

~~(p) Toxic Substances:~~

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

~~(B) Levels of toxic substances shall not exceed the criteria listed in **Table 20** which were based on criteria established by EPA and published in **Quality Criteria for Water (1986)**, unless otherwise noted;~~

~~(C) The criteria in paragraph (B) of this subsection shall apply unless data from scientifically valid studies demonstrate that the most sensitive designated beneficial uses will not be adversely affected by exceeding a criterion or that a more restrictive criterion is warranted to protect beneficial uses, as accepted by the Department on a site-specific~~

~~basis. Where no published EPA criteria exist for a toxic substance, public health advisories and other published scientific literature may be considered and used, if appropriate, to set guidance values;~~

~~(D) Bio-assessment studies such as laboratory bioassays or instream measurements of indigenous biological communities, shall be conducted, as the Department deems necessary, to monitor the toxicity of complex effluents, other suspected discharges or chemical substances without numeric criteria, to aquatic life. These studies, properly conducted in accordance with standard testing procedures, may be considered as scientifically valid data for the purposes of paragraph (C) of this subsection. If toxicity occurs, the Department shall evaluate and implement measures necessary to reduce toxicity on a case-by-case basis.~~

~~(3) Where the naturally occurring quality parameters of waters of the Malheur Lake Basin are outside the numerical limits of the above assigned water quality standards, the naturally occurring water quality shall be the standard. However, in such cases special restrictions, described in OAR 340-041-0026(3)(a)(C)(iii), apply to discharges that affect dissolved oxygen.~~

~~(4) Mixing zones:~~

~~(a) The Department may allow a designated portion of a receiving water to serve as a zone of dilution for wastewaters and receiving waters to mix thoroughly and this zone will be defined as a mixing zone;~~

~~(b) The Department may suspend all or part of the water quality standards, or set less restrictive standards, in the defined mixing zone, provided that the following conditions are met:~~

~~(A) The water within the mixing zone shall be free of:~~

~~(i) Materials in concentrations that will cause acute toxicity to aquatic life as measured by a Department approved bioassay method. Acute toxicity is lethality to aquatic life as measured by a significant difference in lethal concentration between the control and 100 percent effluent in an acute bioassay test. Lethality in 100 percent effluent may be allowed due to ammonia and chlorine only when it is demonstrated on a case-by-case basis that immediate dilution of the effluent within the mixing zone reduces toxicity below lethal concentrations. The Department may on a case-by-case basis establish a zone of immediate dilution if appropriate for other parameters;~~

~~(ii) Materials that will settle to form objectionable deposits;~~

~~(iii) Floating debris, oil, scum, or other materials that cause nuisance conditions;~~

~~(iv) Substances in concentrations that produce deleterious amounts of fungal or bacterial growths.~~

~~(B) The water outside the boundary of the mixing zone shall:~~

~~(i) Be free of materials in concentrations that will cause chronic (sublethal) toxicity. Chronic toxicity is measured as the concentration that causes long-term sublethal effects, such as significantly impaired growth or reproduction in aquatic organisms, during a testing period based on test species life cycle. Procedures and end points will be specified by the Department in wastewater discharge permits;~~

~~(ii) Meet all other water quality standards under normal annual low flow conditions.~~

~~(c) The limits of the mixing zone shall be described in the wastewater discharge permit. In determining the location, surface area, and volume of a mixing zone area, the Department may use appropriate mixing zone guidelines to assess the biological, physical, and chemical character of receiving waters, and effluent, and the most appropriate placement of the outfall, to protect instream water quality, public health, and other beneficial uses. Based on receiving water and effluent characteristics, the Department shall define a mixing zone in the immediate area of a wastewater discharge to:~~

~~(A) Be as small as feasible;~~

~~(B) Avoid overlap with any other mixing zones to the extent possible and be less than the total stream width as necessary to allow passage of fish and other aquatic organisms;~~

~~(C) Minimize adverse effects on the indigenous biological community especially when species are present that warrant special protection for their economic importance, tribal significance, ecological uniqueness, or for other similar reasons as determined by the Department and does not block the free passage of aquatic life;~~

~~(D) Not threaten public health;~~

~~(E) Minimize adverse effects on other designated beneficial uses outside the mixing zone.~~

~~(d) The Department may request the applicant of a permitted discharge for which a mixing zone is required, to submit all information necessary to define a mixing zone, such as:~~

~~(A) Type of operation to be conducted;~~

~~(B) Characteristics of effluent flow rates and composition;~~

~~(C) Characteristics of low flows of receiving waters;~~

~~(D) Description of potential environmental effects;~~

~~(E) Proposed design for outfall structures.~~

(e) The Department may, as necessary, require mixing zone monitoring studies and/or bioassays to be conducted to evaluate water quality or biological status within and outside the mixing zone boundary;

(f) The Department may change mixing zone limits or require the relocation of an outfall if it determines that the water quality within the mixing zone adversely affects any existing beneficial uses in the receiving waters.

(g) **Alternate requirements for mixing zones**: For some existing or proposed discharges to some receiving streams, it may not be practicable to treat wastewater to meet instream water quality standards at the point of discharge or within a short distance from the point of discharge. Some of these discharges could be allowed without impairing the overall ecological integrity of the receiving streams, or may provide an overall benefit to the receiving stream. This section specifies the conditions and circumstances under which a mixing zone may be allowed by the Department that extends beyond the immediate area around a discharge point, or that extends across a stream width. An alternate mixing zone may be approved if the applicant demonstrates to the Department's satisfaction that the discharge (A) creates an overall environmental benefit, or (B) is to a constructed water course, or (C) is insignificant. The three circumstances under which alternate mixing zones may be established are described further below.

(A) **Overall environmental benefit**.

(i) Qualifying for alternate mixing zone based on overall environmental benefit: In order to qualify for an alternate mixing zone based on a finding of overall environmental benefit, the discharger must demonstrate to the Department's satisfaction the following:

(I) That all practical strategies have been or will be implemented to minimize the pollutant loads in the effluent; and

(II) For proposed increased discharges, the current actual discharge and mixing zone does not meet the requirements of a standard mixing zone; and

(III) Either that, on balance, an environmental benefit would be lost if the discharge did not occur, or that the discharger is prepared to undertake other actions that will mitigate the effect of the discharge to an extent resulting in a net environmental benefit to the receiving stream.

(IV) For the purposes of this rule, the term "practical" shall include environmental impact, availability of alternatives, cost of alternatives, and other relevant factors.

(ii) Studies required and evaluation of studies: In order to demonstrate that, on balance, an environmental benefit will result from the discharge, the following information shall be provided by the applicant:

(I) The effluent flow and pollutant loads that are detected or expected in the effluent, by month, both average and expected worst case discharges. The parameters to be evaluated include at a minimum temperature, biochemical oxygen demand, total suspended solids, total dissolved solids, pH, settleable solids, e. coli bacteria, oil and grease, any pollutants listed in Table 20 of this rule division, and any pollutant for which the receiving stream has been designated by the Department as water quality limited; and

(II) Receiving stream flow, by month; and

(III) The expected impact of the discharge, by month, on the receiving stream for the entire proposed mixing zone area for all of the pollutants listed above. Included in this analysis shall be a comparison of the receiving stream water quality with the discharge and without the discharge; and

(IV) A description of fish, other vertebrate populations, and macroinvertebrates that reside in or are likely to pass through the proposed mixing zone, including expected location (if known), species identification, stage of development, and time of year when their presence is expected. For existing discharges, the applicant shall provide the same information for similar nearby streams that are unaffected by wastewater discharges. In addition, any threatened or endangered species in the immediate vicinity of the receiving stream shall be identified; and

(V) The expected impact of the discharge on aquatic organisms and/or fish passage, including any expected negative impacts from the effluent attracting fish where that is not desirable; and

(VI) A description of the expected environmental benefits to be derived from the discharge or other mitigation measures proposed by the applicant, including but not limited to improvements in water quality, improvements in fish passage, and improvements in aquatic habitat. If the applicant proposes to undertake mitigation measures designed to provide environmental benefits (e.g., purchasing water or water conservation rights to increase stream flows or establishing stream cover to decrease temperature), the applicant shall describe the mitigation measures in detail, including a description of the steps it will take to ensure that the benefits of the mitigation measures are attained and are not lost or diminished over time.

(VII) Some or all of the above study requirements may be waived by the Department, if the Department determines that the information is not needed. In the event that the Department does waive some or all of the above study requirements, the basis for waiving the requirements will be included in the permit evaluation report upon the next permit renewal or modification relating to the mixing zone.

(VIII) Upon request of the Department, the applicant shall conduct additional studies to further evaluate the impact of the discharge, which may include whole effluent toxicity testing, stream surveys for water quality, stream surveys for fish and other aquatic organisms, or other studies as specified by the Depart ment.

~~(IX) In evaluating whether an existing or proposed increase in an existing discharge would result in a net environmental benefit, the applicant shall use the native biological community in a nearby, similar stream that is unaffected by wastewater discharges. The Department shall consider all information generated as required in this rule and other relevant information. The evaluation shall consider benefits to the native aquatic biological community only.~~

~~(iii) Permit conditions: Upon determination by the Department that the discharge and mitigation measures (if any) will likely result in an overall environmental benefit, the Department shall include appropriate permit conditions to insure that the environmental benefits are attained and continue. Such permit conditions may include but not be limited to:~~

~~(I) Maximum allowed effluent flows and pollutant loads;~~

~~(II) Requirements to maintain land ownership, easements, contracts, or other legally binding measures necessary to assure that mitigation measures, if any, remain in place and effective;~~

~~(III) Special operating conditions;~~

~~(IV) Monitoring and reporting requirements; and~~

~~(V) Studies to evaluate the effectiveness of mitigation measures.~~

~~(B) **Constructed water course**: A mixing zone may be extended through a constructed water course and into a natural water course. For the purposes of this rule, a constructed water course is one that was constructed for irrigation, site drainage, or wastewater conveyance, and has the following characteristics:~~

~~(i) Irrigation flows, stormwater runoff, or wastewater flows have replaced natural streamflow regimes; and~~

~~(ii) The channel form is greatly simplified in lengthwise and cross sectional profiles; and~~

~~(iii) Physical and biological characteristics that differ significantly from nearby natural streams; and~~

~~(iv) A much lower diversity of aquatic species than found in nearby natural streams; and~~

~~(v) If the constructed water course is an irrigation canal, then it must have effective fish screens in place to qualify as a constructed water course.~~

~~(C) **Insignificant discharges**: Insignificant discharges are those that either by volume, pollutant characteristics, and/or temporary nature are expected to have little if any impact on beneficial uses in the receiving stream, and for which the extensive evaluations~~

~~required for discharges to smaller streams are not warranted. For the purposes of this rule, only filter backwash discharges and underground storage tank cleanups are considered insignificant discharges.~~

~~(D) **Other requirements for alternate mixing zones**: The following are additional requirements for dischargers requesting an alternate mixing zone:~~

~~(i) Most discharges that qualify for an alternate mixing zone will extend through the receiving stream until a larger stream is reached, where thorough mixing of the effluent can occur and where the edge of the allowed mixing zone will be located. The portion of the mixing zone in the larger stream must meet all of the requirements of the standard mixing zone, including not blocking aquatic life passage; and~~

~~(ii) An alternate mixing zone shall not be granted if a municipal drinking water intake is located within the proposed mixing zone, and the discharge has a significant adverse impact on the drinking water source; and~~

~~(iii) The discharge will not pose an unreasonable hazard to the environment or pose a significant health risk, considering the likely pathways of exposure; and~~

~~(iv) The discharge shall not be acutely toxic to organisms passing through the mixing zone; and~~

~~(v) An alternate mixing zone shall not be granted if the substances discharged may accumulate in the sediments or bioaccumulate in aquatic life or wildlife to levels that adversely affect public health, safety, or welfare; aquatic life; wildlife; or other designated beneficial uses; and~~

~~(vi) In the event that the receiving stream is water quality limited, the requirements for discharges to water quality limited streams supersede this rule.~~

~~(5) Testing methods: The analytical testing methods for determining compliance with the water quality standards contained in this rule shall be in accordance with the most recent edition of **Standard Methods for the Examination of Water and Waste Water published jointly by the American Public Health Association, American Water Works Association, and Water Pollution Control Federation**, unless the Department has published an applicable superseding method, in which case testing shall be in accordance with the superseding method; provided, however, that testing in accordance with an alternative method shall comply with this rule if the Department has published the method or has approved the method in writing.~~

~~[ED. NOTE: The Table(s) referenced in this rule is not printed in the OAR Compilation. Copies are available from the agency.]~~

~~[Publications: The publication(s) referred to or incorporated by reference in this rule are available from the office of the agency.]~~

Stat. Auth.: ORS 468.735, ORS 468B.035 & ORS 468B.048
Stats. Implemented: ORS 468B.048
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 1-1980, f. & ef. 1-9-80; DEQ 18-1987, f. & ef. 9-4-87; DEQ 14-1991, f. & cert. ef. 8-13-91; DEQ 17-1992, f. & cert. ef. 8-7-92 (and corrected 8-13-92); DEQ 21-1995(Temp), f. & cert. ef. 9-21-95; DEQ 5-1996, f. & cert. ef. 3-7-96; DEQ 22-1997, f. & cert. ef. 10-24-97

340-041-0895

Minimum Design Criteria for Treatment and Control of Wastes

Subject to the implementation program set forth in OAR 340-041-0120, prior to discharge of any wastes from any new or modified facility to any waters of the Malheur Lake Basin, such wastes shall be treated and controlled in facilities designed in accordance with the following minimum criteria (In designing treatment facilities, average conditions and a normal range of variability are generally used in establishing design criteria. A facility once completed and placed in operation should operate at or near the design limit most of the time but may operate below the design criteria limit at times due to variables which are unpredictable or uncontrollable. This is particularly true for biological treatment facilities. The actual operating limits are intended to be established by permit pursuant to ORS 468.740 and recognize that the actual performance level may at times be less than the design criteria.):

(1) Sewage wastes:

(a) A minimum of secondary treatment or equivalent control and unless otherwise specifically authorized by the Department, operation of all waste treatment and control facilities at maximum practicable efficiency and effectiveness so as to minimize waste discharges to public waters;

(b) Effluent BOD concentrations in mg/l, divided by the dilution factor (ratio of receiving stream flow to effluent flow) shall not exceed one unless otherwise approved by the EQC;

(c) Sewage wastes shall be disinfected, after treatment and prior to discharge, equivalent to thorough mixing with sufficient chlorine to provide a residual of at least one part per million after 60 minutes of contact time unless otherwise specifically authorized by permit;

(d) Positive protection shall be provided to prevent bypassing raw or inadequately treated sewage to public waters unless otherwise approved by the Department where elimination of inflow and infiltration would be necessary but not presently practicable;

(e) More stringent waste treatment and control requirements may be imposed where special conditions may require.

(2) Industrial wastes:

(a) After maximum practicable inplant control, a minimum of secondary treatment or equivalent control (reduction of suspended solids and organic material where present in significant quantities, effective disinfection where bacterial organisms of public health significance are present, and control of toxic or other deleterious substances);

(b) Specific industrial waste treatment requirements shall be determined on an individual basis in accordance with the provisions of this plan, applicable federal requirements, and the following:

(A) The uses which are or may likely be made of the receiving stream;

(B) The size and nature of flow of the receiving stream;

(C) The quantity and quality of wastes to be treated; and

(D) The presence or absence of other sources of pollution on the same watershed.

(c) Where industrial, commercial, or agricultural effluents contain significant quantities of potentially toxic elements, treatment requirements shall be determined utilizing appropriate bioassays;

(d) Industrial cooling waters containing significant heat loads shall be subjected to offstream cooling or heat recovery prior to discharge to public waters;

(e) Positive protection shall be provided to prevent bypassing of raw or inadequately treated industrial wastes to any public waters;

(f) Facilities shall be provided to prevent and contain spills of potentially toxic or hazardous materials and a positive program for containment and cleanup of such spills should they occur shall be developed and maintained.

Stat. Auth.: ORS 468
Stats. Implemented: ORS 468B.030
Hist.: DEQ 128, f. & ef. 1-21-77

Goose and Summer Lakes Basin

340-041-0922

Beneficial Water Uses to be Protected

Water quality in the Goose and Summer Lakes Basin (See **Figures 1** and **19**) shall be managed to protect the recognized beneficial uses as indicated in **Table 18**.

[ED. NOTE: The Figure(s) and Table referenced in this rule are not printed in the OAR Compilation. Copies are available from the agency.]

Stat. Auth.: ORS 468
Stats. Implemented: ORS 468B.048
Hist.: DEQ 128, f. & ef. 1-21-77

340-041-0925

Water Quality Standards Not to be Exceeded (To be Adopted Pursuant to ORS 468.735 and Enforceable Pursuant to ORS 468.720, 468.990, and 468.992)

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

(2) No wastes shall be discharged and no activities shall be conducted which either alone or in combination with other wastes or activities will cause violation of the following standards in the waters of the Goose and Summer Lakes Basin:

(a) Dissolved oxygen (DO): The changes adopted by the Commission on January 11, 1996, become effective July 1, 1996. Until that time, the requirements of this rule that were in effect on January 10, 1996, apply:

(A) For waterbodies identified by the Department as providing salmonid spawning, during the periods from spawning until fry emergence from the gravels, the following criteria apply:

(i) The dissolved oxygen shall not be less than 11.0 mg/l. However, if the minimum intergravel dissolved oxygen, measured as a spatial median, is 8.0 mg/l or greater, then the DO criterion is 9.0 mg/l;

(ii) Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 11.0 mg/l or 9.0 mg/l criteria, dissolved oxygen levels shall not be less than 95 percent of saturation.

(B) For waterbodies identified by the Department as providing salmonid spawning during the period from spawning until fry emergence from the gravels, the spatial median intergravel dissolved oxygen concentration shall not fall below 6.0 mg/l;

(C) A spatial median of 8.0 mg/l intergravel dissolved oxygen level shall be used to identify areas where the recognized beneficial use of salmonid spawning, egg incubation and fry emergence from the egg and from the gravels may be impaired and therefore

~~require action by the Department. Upon determination that the spatial median intergravel dissolved oxygen concentration is below 8.0 mg/l, the Department may, in accordance with priorities established by the Department for evaluating water quality impaired waterbodies, determine whether to list the waterbody as water quality limited under the Section 303(d) of the Clean Water Act, initiate pollution control strategies as warranted, and where needed cooperate with appropriate designated management agencies to evaluate and implement necessary best management practices for nonpoint source pollution control;~~

~~(D) For waterbodies identified by the Department as providing cold water aquatic life, the dissolved oxygen shall not be less than 8.0 mg/l as an absolute minimum. Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 8.0 mg/l, dissolved oxygen shall not be less than 90 percent of saturation. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 8.0 mg/l as a 30 day mean minimum, 6.5 mg/l as a seven day minimum mean, and shall not fall below 6.0 mg/l as an absolute minimum (**Table 21**);~~

~~(E) For waterbodies identified by the Department as providing cool water aquatic life, the dissolved oxygen shall not be less than 6.5 mg/l as an absolute minimum. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 6.5 mg/l as a 30 day mean minimum, 5.0 mg/l as a seven day minimum mean, and shall not fall below 4.0 mg/l as an absolute minimum (**Table 21**);~~

~~(F) For waterbodies identified by the Department as providing warm water aquatic life, the dissolved oxygen shall not be less than 5.5 mg/l as an absolute minimum. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 5.5 mg/l as a 30 day mean minimum, and shall not fall below 4.0 mg/l as an absolute minimum (**Table 21**);~~

~~(b) Temperature: The changes adopted by the Commission on January 11, 1996, become effective July 1, 1996. Until that time, the requirements of this rule that were in effect on January 10, 1996, apply. The method for measuring the numeric temperature criteria specified in this rule is defined in OAR 340-041-0006(54):~~

~~(A) To accomplish the goals identified in OAR 340-041-0120(11), unless specifically allowed under a Department approved surface water temperature management plan as required under OAR 340-041-0026(3)(a)(D), no measurable surface water temperature increase resulting from anthropogenic activities is allowed:~~

~~(i) In a basin for which salmonid fish rearing is a designated beneficial use, and in which surface water temperatures exceed 64.0°F (17.8°C);~~

~~(ii) In waters and periods of the year determined by the Department to support native salmonid spawing, egg incubation, and fry emergence from the egg and from the gravels in a basin which exceeds 55.0°F (12.8°C);~~

~~(iii) In waters determined by the Department to support or to be necessary to maintain the viability of native Oregon bull trout, when surface water temperatures exceed 50.0°F (10.0°C);~~

~~(iv) In waters determined by the Department to be ecologically significant cold water refugia;~~

~~(v) In stream segments containing federally listed Threatened and Endangered species if the increase would impair the biological integrity of the Threatened and Endangered population;~~

~~(vi) In Oregon waters when the dissolved oxygen (DO) levels are within 0.5 mg/l or 10 percent saturation of the water column or intergravel DO criterion for a given stream reach or subbasin;~~

~~(vii) In natural lakes.~~

~~(B) An exceedance of the numeric criteria identified in subparagraphs (A)(i) through (iii) of this subsection will not be deemed a temperature standard violation if it occurs when the air temperature during the warmest seven-day period of the year exceeds the 90th percentile of the seven-day average daily maximum air temperature calculated in a yearly series over the historic record. However, during such periods, the anthropogenic sources must still continue to comply with their surface water temperature management plans developed under OAR 340-041-0026(3)(a)(D);~~

~~(C) Any source may petition the Commission for an exception to subparagraphs (A)(i) through (vii) of this subsection for discharge above the identified criteria if:~~

~~(i) The source provides the necessary scientific information to describe how the designated beneficial uses would not be adversely impacted; or~~

~~(ii) A source is implementing all reasonable management practices or measures; its activity will not significantly affect the beneficial uses; and the environmental cost of treating the parameter to the level necessary to assure full protection would outweigh the risk to the resource.~~

~~(c) Turbidity (Nephelometric Turbidity Units, NTU): No more than a ten percent cumulative increase in natural stream turbidities shall be allowed, as measured relative to a control point immediately upstream of the turbidity causing activity. However, limited duration activities necessary to address an emergency or to accommodate essential dredging, construction or other legitimate activities and which cause the standard to be~~

~~exceeded may be authorized provided all practicable turbidity control techniques have been applied and one of the following has been granted:~~

~~(A) Emergency activities: Approved coordinated by DEQ with the Department of Fish and Wildlife under conditions they may prescribe to accommodate response to emergencies or to protect public health and welfare;~~

~~(B) Dredging, Construction or other Legitimate Activities: Permit or certification authorized under terms of Section 401 or 404 (Permits and Licenses, Federal Water Pollution Control Act) or OAR 141-085-0100 et seq. (Removal and Fill Permits, Division of State Lands), with limitations and conditions governing the activity set forth in the permit or certificate.~~

~~(d) pH (hydrogen ion concentration):~~

~~(A) Goose Lake: pH values shall not fall outside the range of 7.5 to 9.5;~~

~~(B) All other basin waters: pH values shall not fall outside the range of 7.0 to 9.0. When greater than 25 percent of ambient measurements taken between June and September are greater than pH 8.7, and as resources are available according to priorities set by the Department, the Department shall determine whether the values higher than 8.7 are anthropogenic or natural in origin. The following exception applies: Waters impounded by dams existing on January 1, 1996, which have pHs that exceed the criteria shall not be considered in violation of the standard if the Department determines that the exceedance would not occur without the impoundment and that all practicable measures have been taken to bring the pH in the impounded waters into compliance with the criteria.~~

~~(e) Bacteria standards:~~

~~(A) Numeric Criteria: Organisms of the coliform group commonly associated with fecal sources (MPN or equivalent membrane filtration using a representative number of samples) shall not exceed the criteria described in subparagraphs (i) and (ii) of this paragraph. Freshwaters:~~

~~(i) A 30-day log mean of 126 *E. coli* organisms per 100 ml, based on a minimum of five (5) samples;~~

~~(ii) No single sample shall exceed 406 *E. coli* organisms per 100 ml.~~

~~(B) Raw Sewage Prohibition: No sewage shall be discharged into or in any other manner be allowed to enter the waters of the State unless such sewage has been treated in a manner approved by the Department or otherwise allowed by these rules;~~

~~(C) Animal Waste: Runoff contaminated with domesticated animal wastes shall be minimized and treated to the maximum extent practicable before it is allowed to enter waters of the State;~~

~~(D) Effluent Limitations and Water Quality Limited Waterbodies: Effluent limitations to implement the criteria in this rule are found in OAR 340-041-0120(12) through (16). Implementation of the criteria in this rule in water quality limited waterbodies is described in OAR 340-041-0026(3)(a)(I) and OAR 340-041-0120(17).~~

~~(f) Bacterial pollution or other conditions deleterious to waters used for domestic purposes, livestock watering, irrigation, bathing, or otherwise injurious to public health shall not be allowed;~~

~~(g) The liberation of dissolved gases, such as carbon dioxide, hydrogen sulfide, or other gases, in sufficient quantities to cause objectionable odors or to be deleterious to fish or other aquatic life, recreation, or other reasonable uses made of such waters shall not be allowed;~~

~~(h) The development of fungi or other growths having a deleterious effect on stream bottoms, fish or other aquatic life, or which are injurious to health, recreation, or industry shall not be allowed;~~

~~(i) The creation of tastes or odors or toxic or other conditions that are deleterious to fish or other aquatic life or affect the potability of drinking water or the palatability of fish shall not be allowed;~~

~~(j) The formation of appreciable bottom or sludge deposits or the formation of any organic or inorganic deposits deleterious to fish or other aquatic life or injurious to public health, recreation, or industry shall not be allowed;~~

~~(k) Objectionable discoloration, scum, oily sleek or floating solids, or coating of aquatic life with oil films shall not be allowed;~~

~~(l) Aesthetic conditions offensive to the human senses of sight, taste, smell, or touch shall not be allowed;~~

~~(m) Radioisotope concentrations shall not exceed maximum permissible concentrations (MPC's) in drinking water, edible fishes, wildlife, irrigated crops, livestock and dairy products, or pose an external radiation hazard;~~

~~(n) The concentration of total dissolved gas relative to atmospheric pressure at the point of sample collection shall not exceed 110 percent of saturation, except when stream flow exceeds the ten-year, seven-day average flood. However, for Hatchery receiving waters and waters of less than two feet in depth, the concentration of total dissolved gas relative to atmospheric pressure at the point of sample collection shall not exceed 105 percent of saturation;~~

~~(o) Total Dissolved Solids: Guide concentrations listed below shall not be exceeded unless otherwise specifically authorized by DEQ upon such conditions as it may deem~~

~~necessary to carry out the general intent of this plan and to protect the beneficial uses set forth in OAR 340-041-0922: None;~~

~~(p) Toxic Substances:~~

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

~~(B) Levels of toxic substances shall not exceed the criteria listed in **Table 20** which were based on criteria established by EPA and published in **Quality Criteria for Water (1986)**, unless otherwise noted;~~

~~(C) The criteria in paragraph (B) of this subsection shall apply unless data from scientifically valid studies demonstrate that the most sensitive designated beneficial uses will not be adversely affected by exceeding a criterion or that a more restrictive criterion is warranted to protect beneficial uses, as accepted by the Department on a site specific basis. Where no published EPA criteria exist for a toxic substance, public health advisories and other published scientific literature may be considered and used, if appropriate, to set guidance values;~~

~~(D) Bio-assessment studies such as laboratory bioassays or instream measurements of indigenous biological communities, shall be conducted, as the Department deems necessary, to monitor the toxicity of complex effluents, other suspected discharges or chemical substances without numeric criteria, to aquatic life. These studies, properly conducted in accordance with standard testing procedures, may be considered as scientifically valid data for the purposes of paragraph (C) of this subsection. If toxicity occurs, the Department shall evaluate and implement measures necessary to reduce toxicity on a case-by-case basis.~~

~~(3) Where the naturally occurring quality parameters of waters of the Goose and Summer Lakes Basin are outside the numerical limits of the above assigned water quality standards, the naturally occurring water quality shall be the standard. However, in such cases special restrictions, described in OAR 340-041-0026(3)(a)(C)(iii), apply to discharges that affect dissolved oxygen.~~

~~(4) Mixing zones:~~

~~(a) The Department may allow a designated portion of a receiving water to serve as a zone of dilution for wastewaters and receiving waters to mix thoroughly and this zone will be defined as a mixing zone;~~

~~(b) The Department may suspend all or part of the water quality standards, or set less restrictive standards, in the defined mixing zone, provided that the following conditions are met:~~

~~(A) The water within the mixing zone shall be free of:~~

~~(i) Materials in concentrations that will cause acute toxicity to aquatic life as measured by a Department approved bioassay method. Acute toxicity is lethality to aquatic life as measured by a significant difference in lethal concentration between the control and 100 percent effluent in an acute bioassay test. Lethality in 100 percent effluent may be allowed due to ammonia and chlorine only when it is demonstrated on a case-by-case basis that immediate dilution of the effluent within the mixing zone reduces toxicity below lethal concentrations. The Department may on a case-by-case basis establish a zone of immediate dilution if appropriate for other parameters;~~

~~(ii) Materials that will settle to form objectionable deposits;~~

~~(iii) Floating debris, oil, scum, or other materials that cause nuisance conditions;~~

~~(iv) Substances in concentrations that produce deleterious amounts of fungal or bacterial growths.~~

~~(B) The water outside the boundary of the mixing zone shall:~~

~~(i) Be free of materials in concentrations that will cause chronic (sublethal) toxicity. Chronic toxicity is measured as the concentration that causes long-term sublethal effects, such as significantly impaired growth or reproduction in aquatic organisms, during a testing period based on test species life cycle. Procedures and end points will be specified by the Department in wastewater discharge permits;~~

~~(ii) Meet all other water quality standards under normal annual low flow conditions.~~

~~(c) The limits of the mixing zone shall be described in the wastewater discharge permit. In determining the location, surface area, and volume of a mixing zone area, the Department may use appropriate mixing zone guidelines to assess the biological, physical, and chemical character of receiving waters, and effluent, and the most appropriate placement of the outfall, to protect instream water quality, public health, and other beneficial uses. Based on receiving water and effluent characteristics, the Department shall define a mixing zone in the immediate area of a wastewater discharge to:~~

~~(A) Be as small as feasible;~~

~~(B) Avoid overlap with any other mixing zones to the extent possible and be less than the total stream width as necessary to allow passage of fish and other aquatic organisms;~~

(C) Minimize adverse effects on the indigenous biological community especially when species are present that warrant special protection for their economic importance, tribal significance, ecological uniqueness, or for other similar reasons as determined by the Department and does not block the free passage of aquatic life;

(D) Not threaten public health;

(E) Minimize adverse effects on other designated beneficial uses outside the mixing zone.

(d) The Department may request the applicant of a permitted discharge for which a mixing zone is required, to submit all information necessary to define a mixing zone, such as:

(A) Type of operation to be conducted;

(B) Characteristics of effluent flow rates and composition;

(C) Characteristics of low flows of receiving waters;

(D) Description of potential environmental effects;

(E) Proposed design for outfall structures.

(e) The Department may, as necessary, require mixing zone monitoring studies and/or bioassays to be conducted to evaluate water quality or biological status within and outside the mixing zone boundary;

(f) The Department may change mixing zone limits or require the relocation of an outfall if it determines that the water quality within the mixing zone adversely affects any existing beneficial uses in the receiving waters.

(g) **Alternate requirements for mixing zones**: For some existing or proposed discharges to some receiving streams, it may not be practicable to treat wastewater to meet instream water quality standards at the point of discharge or within a short distance from the point of discharge. Some of these discharges could be allowed without impairing the overall ecological integrity of the receiving streams, or may provide an overall benefit to the receiving stream. This section specifies the conditions and circumstances under which a mixing zone may be allowed by the Department that extends beyond the immediate area around a discharge point, or that extends across a stream width. An alternate mixing zone may be approved if the applicant demonstrates to the Department's satisfaction that the discharge (A) creates an overall environmental benefit, or (B) is to a constructed water course, or (C) is insignificant. The three circumstances under which alternate mixing zones may be established are described further below.

(A) **Overall environmental benefit.**

~~(i) Qualifying for alternate mixing zone based on overall environmental benefit: In order to qualify for an alternate mixing zone based on a finding of overall environmental benefit, the discharger must demonstrate to the Department's satisfaction the following:~~

~~(I) That all practical strategies have been or will be implemented to minimize the pollutant loads in the effluent; and~~

~~(II) For proposed increased discharges, the current actual discharge and mixing zone does not meet the requirements of a standard mixing zone; and~~

~~(III) Either that, on balance, an environmental benefit would be lost if the discharge did not occur, or that the discharger is prepared to undertake other actions that will mitigate the effect of the discharge to an extent resulting in a net environmental benefit to the receiving stream.~~

~~(IV) For the purposes of this rule, the term "practical" shall include environmental impact, availability of alternatives, cost of alternatives, and other relevant factors.~~

~~(ii) Studies required and evaluation of studies: In order to demonstrate that, on balance, an environmental benefit will result from the discharge, the following information shall be provided by the applicant:~~

~~(I) The effluent flow and pollutant loads that are detected or expected in the effluent, by month, both average and expected worst case discharges. The parameters to be evaluated include at a minimum temperature, biochemical oxygen demand, total suspended solids, total dissolved solids, pH, settleable solids, e. coli bacteria, oil and grease, any pollutants listed in Table 20 of this rule division, and any pollutant for which the receiving stream has been designated by the Department as water quality limited; and~~

~~(II) Receiving stream flow, by month; and~~

~~(III) The expected impact of the discharge, by month, on the receiving stream for the entire proposed mixing zone area for all of the pollutants listed above. Included in this analysis shall be a comparison of the receiving stream water quality with the discharge and without the discharge; and~~

~~(IV) A description of fish, other vertebrate populations, and macroinvertebrates that reside in or are likely to pass through the proposed mixing zone, including expected location (if known), species identification, stage of development, and time of year when their presence is expected. For existing discharges, the applicant shall provide the same information for similar nearby streams that are unaffected by wastewater discharges. In addition, any threatened or endangered species in the immediate vicinity of the receiving stream shall be identified; and~~

~~(V) The expected impact of the discharge on aquatic organisms and/or fish passage, including any expected negative impacts from the effluent attracting fish where that is not desirable; and~~

~~(VI) A description of the expected environmental benefits to be derived from the discharge or other mitigation measures proposed by the applicant, including but not limited to improvements in water quality, improvements in fish passage, and improvements in aquatic habitat. If the applicant proposes to undertake mitigation measures designed to provide environmental benefits (e.g., purchasing water or water conservation rights to increase stream flows or establishing stream cover to decrease temperature), the applicant shall describe the mitigation measures in detail, including a description of the steps it will take to ensure that the benefits of the mitigation measures are attained and are not lost or diminished over time.~~

~~(VII) Some or all of the above study requirements may be waived by the Department, if the Department determines that the information is not needed. In the event that the Department does waive some or all of the above study requirements, the basis for waiving the requirements will be included in the permit evaluation report upon the next permit renewal or modification relating to the mixing zone.~~

~~(VIII) Upon request of the Department, the applicant shall conduct additional studies to further evaluate the impact of the discharge, which may include whole effluent toxicity testing, stream surveys for water quality, stream surveys for fish and other aquatic organisms, or other studies as specified by the Department.~~

~~(IX) In evaluating whether an existing or proposed increase in an existing discharge would result in a net environmental benefit, the applicant shall use the native biological community in a nearby, similar stream that is unaffected by wastewater discharges. The Department shall consider all information generated as required in this rule and other relevant information. The evaluation shall consider benefits to the native aquatic biological community only.~~

~~(iii) Permit conditions: Upon determination by the Department that the discharge and mitigation measures (if any) will likely result in an overall environmental benefit, the Department shall include appropriate permit conditions to insure that the environmental benefits are attained and continue. Such permit conditions may include but not be limited to:~~

~~(I) Maximum allowed effluent flows and pollutant loads;~~

~~(II) Requirements to maintain land ownership, easements, contracts, or other legally binding measures necessary to assure that mitigation measures, if any, remain in place and effective;~~

~~(III) Special operating conditions;~~

(IV) Monitoring and reporting requirements; and

(V) Studies to evaluate the effectiveness of mitigation measures.

(B) **Constructed water course**: A mixing zone may be extended through a constructed water course and into a natural water course. For the purposes of this rule, a constructed water course is one that was constructed for irrigation, site drainage, or wastewater conveyance, and has the following characteristics:

(i) Irrigation flows, stormwater runoff, or wastewater flows have replaced natural streamflow regimes; and

(ii) The channel form is greatly simplified in lengthwise and cross-sectional profiles; and

(iii) Physical and biological characteristics that differ significantly from nearby natural streams; and

(iv) A much lower diversity of aquatic species than found in nearby natural streams; and

(v) If the constructed water course is an irrigation canal, then it must have effective fish screens in place to qualify as a constructed water course.

(C) **Insignificant discharges**: Insignificant discharges are those that either by volume, pollutant characteristics, and/or temporary nature are expected to have little if any impact on beneficial uses in the receiving stream, and for which the extensive evaluations required for discharges to smaller streams are not warranted. For the purposes of this rule, only filter backwash discharges and underground storage tank cleanups are considered insignificant discharges.

(D) **Other requirements for alternate mixing zones**: The following are additional requirements for dischargers requesting an alternate mixing zone:

(i) Most discharges that qualify for an alternate mixing zone will extend through the receiving stream until a larger stream is reached, where thorough mixing of the effluent can occur and where the edge of the allowed mixing zone will be located. The portion of the mixing zone in the larger stream must meet all of the requirements of the standard mixing zone, including not blocking aquatic life passage; and

(ii) An alternate mixing zone shall not be granted if a municipal drinking water intake is located within the proposed mixing zone, and the discharge has a significant adverse impact on the drinking water source; and

(iii) The discharge will not pose an unreasonable hazard to the environment or pose a significant health risk, considering the likely pathways of exposure; and

(iv) The discharge shall not be acutely toxic to organisms passing through the mixing zone; and

(v) An alternate mixing zone shall not be granted if the substances discharged may accumulate in the sediments or bioaccumulate in aquatic life or wildlife to levels that adversely affect public health, safety, or welfare; aquatic life; wildlife; or other designated beneficial uses; and

(vi) In the event that the receiving stream is water quality limited, the requirements for discharges to water quality limited streams supersede this rule.

(5) Testing methods: The analytical testing methods for determining compliance with the water quality standards contained in this rule shall be in accordance with the most recent edition of **Standard Methods for the Examination of Water and Waste Water published jointly by the American Public Health Association, American Water Works Association, and Water Pollution Control Federation,** unless the Department has published an applicable superseding method, in which case testing shall be in accordance with the superseding method; provided, however, that testing in accordance with an alternative method shall comply with this rule if the Department has published the method or has approved the method in writing.

[ED. NOTE: The Table(s) referenced in this rule is not printed in the OAR Compilation. Copies are available from the agency.]

[Publications: The publication(s) referred to or incorporated by reference in this rule are available from the office of the agency.]

Stat. Auth.: ORS 468.735, ORS 468B.035 & ORS 468B.048
Stats. Implemented: ORS 468B.048
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 1-1980, f. & ef. 1-9-80; DEQ 18-1987, f. & ef. 9-4-87; DEQ 14-1991, f. & cert. ef. 8-13-91; DEQ 17-1992, f. & cert. ef. 8-7-92 (and corrected 8-13-92); DEQ 21-1995(Temp), f. & cert. ef. 9-21-95; DEQ 5-1996, f. & cert. ef. 3-7-96; DEQ 22-1997, f. & cert. ef. 10-24-97

340-041-0935

Minimum Design Criteria for Treatment and Control of Wastes

Subject to the implementation program set forth in OAR 340-041-0120, prior to discharge of any wastes from any new or modified facility to any waters of the Goose and Summer Lakes Basin, such wastes shall be treated and controlled in facilities designed in accordance with the following minimum criteria. (In designing treatment facilities, average conditions and a normal range of variability are generally used in establishing design criteria. A facility once completed and placed in operation should operate at or near the design limit most of the time but may operate below the design criteria limit at times due to variables which are unpredictable or uncontrollable. This is particularly true

~~for biological treatment facilities. The actual operating limits are intended to be established by permit pursuant to ORS 468.740 and recognize that the actual performance level may at times be less than the design criteria).~~

~~(1) Sewage wastes:~~

~~(a) A minimum of secondary treatment or equivalent control and unless otherwise specifically authorized by the Department, operation of all waste treatment and control facilities at maximum practicable efficiency and effectiveness so as to minimize waste discharges to public waters;~~

~~(b) Effluent BOD concentrations in mg/l, divided by the dilution factor (ratio of receiving stream flow to effluent flow) shall not exceed one, unless otherwise authorized by the Environmental Quality Commission for existing facilities;~~

~~(c) Sewage wastes shall be disinfected, after treatment and prior to discharge, equivalent to thorough mixing with sufficient chlorine to provide a residual of at least one part per million after 60 minutes of contact time unless otherwise specifically authorized by permit;~~

~~(d) Positive protection shall be provided to prevent bypassing raw or inadequately treated sewage to public waters unless otherwise approved by the Department where elimination of inflow and infiltration would be necessary but not presently practicable;~~

~~(e) More stringent waste treatment and control requirements may be imposed where special conditions may require.~~

~~(2) Industrial wastes:~~

~~(a) After maximum practicable inplant control, a minimum of secondary treatment or equivalent control (reduction of suspended solids and organic material where present in significant quantities, effective disinfection where bacterial organisms of public health significance are present, and control of toxic or other deleterious substances);~~

~~(b) Specific industrial waste treatment requirements shall be determined on an individual basis in accordance with the provisions of this plan, applicable federal requirements, and the following:~~

~~(A) The uses which are or may likely be made of the receiving stream;~~

~~(B) The size and nature of flow of the receiving stream;~~

~~(C) The quantity and quality of wastes to be treated; and~~

~~(D) The presence or absence of other sources of pollution on the same watershed.~~

(c) Where industrial, commercial, or agricultural effluents contain significant quantities of potentially toxic elements, treatment requirements shall be determined utilizing appropriate bioassays;

(d) Industrial cooling waters containing significant heat loads shall be subjected to offstream cooling or heat recovery prior to discharge to public waters;

(e) Positive protection shall be provided to prevent bypassing of raw or inadequately treated industrial wastes to any public waters;

(f) Facilities shall be provided to prevent and contain spills of potentially toxic or hazardous materials and a positive program for containment and cleanup of such spills should they occur shall be developed and maintained.

Stat. Auth.: ORS 468
Stats. Implemented: ORS 468B.030
Hist.: DEQ 128, f. & ef. 1-21-77

Klamath Basin

350-041-0962

Beneficial Water Uses to be Protected

Water quality in the Klamath Basin (see **Figures 1** and **20**) shall be managed to protect the recognized beneficial uses as indicated in **Table 19**.

[ED. NOTE: The Figure(s) and Table referenced in this rule are not printed in the OAR Compilation. Copies are available from the agency.]

Stat. Auth.: ORS 468
Stats. Implemented: ORS 468B.048
Hist.: DEQ 128, f. & ef. 1-21-77

340-041-0965

Water Quality Standards Not to be Exceeded (To be Adopted Pursuant to ORS 468.735 and Enforceable Pursuant to ORS 468.720, 468.990, and 468.992)

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

~~(2) No wastes shall be discharged and no activities shall be conducted which either alone or in combination with other wastes or activities will cause violation of the following standards in the waters of the Klamath Basin:~~

~~(a) Dissolved oxygen (DO): The changes adopted by the Commission on January 11, 1996, become effective July 1, 1996. Until that time, the requirements of this rule that were in effect on January 10, 1996, apply:~~

~~(A) For waterbodies identified by the Department as providing salmonid spawning, during the periods from spawning until fry emergence from the gravels, the following criteria apply:~~

~~(i) The dissolved oxygen shall not be less than 11.0 mg/l. However, if the minimum intergravel dissolved oxygen, measured as a spatial median, is 8.0 mg/l or greater, then the DO criterion is 9.0 mg/l;~~

~~(ii) Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 11.0 mg/l or 9.0 mg/l criteria, dissolved oxygen levels shall not be less than 95 percent of saturation.~~

~~(B) For waterbodies identified by the Department as providing salmonid spawning during the period from spawning until fry emergence from the gravels, the spatial median intergravel dissolved oxygen concentration shall not fall below 6.0 mg/l;~~

~~(C) A spatial median of 8.0 mg/l intergravel dissolved oxygen level shall be used to identify areas where the recognized beneficial use of salmonid spawning, egg incubation and fry emergence from the egg and from the gravels may be impaired and therefore require action by the Department. Upon determi-nation that the spatial median intergravel dissolved oxygen concentration is below 8.0 mg/l, the Department may, in accordance with priorities established by the Department for evaluating water quality impaired waterbodies, determine whether to list the waterbody as water quality limited under the Section 303(d) of the Clean Water Act, initiate pollution control strategies as warranted, and where needed cooperate with appropriate designated management agencies to evaluate and implement necessary best management practices for nonpoint source pollution control;~~

~~(D) For waterbodies identified by the Department as providing cold water aquatic life, the dissolved oxygen shall not be less than 8.0 mg/l as an absolute minimum. Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 8.0 mg/l, dissolved oxygen shall not be less than 90 percent of saturation. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 8.0 mg/l as a 30 day mean minimum, 6.5 mg/l as a seven day minimum mean, and shall not fall below 6.0 mg/l as an absolute minimum (**Table 21**);~~

~~(E) For waterbodies identified by the Department as providing cool water aquatic life, the dissolved oxygen shall not be less than 6.5 mg/l as an absolute minimum. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 6.5 mg/l as a 30-day mean minimum, 5.0 mg/l as a seven-day minimum mean, and shall not fall below 4.0 mg/l as an absolute minimum (**Table 21**);~~

~~(F) For waterbodies identified by the Department as providing warm water aquatic life, the dissolved oxygen shall not be less than 5.5 mg/l as an absolute minimum. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 5.5 mg/l as a 30-day mean minimum, and shall not fall below 4.0 mg/l as an absolute minimum (**Table 21**);~~

~~(b) Temperature: The changes adopted by the Commission on January 11, 1996, become effective July 1, 1996. Until that time, the requirements of this rule that were in effect on January 10, 1996, apply. The method for measuring the numeric temperature criteria specified in this rule is defined in OAR 340-041-0006(54):~~

~~(A) To accomplish the goals identified in OAR 340-041-0120(11), unless specifically allowed under a Department-approved surface water temperature management plan as required under OAR 340-041-0026(3)(a)(D), no measurable surface water temperature increase resulting from anthropogenic activities is allowed:~~

~~(i) In a basin for which salmonid fish rearing is a designated beneficial use, and in which surface water temperatures exceed 64.0°F (17.8°C);~~

~~(ii) In waters and periods of the year determined by the Department to support native salmonid spawning, egg incubation, and fry emergence from the egg and from the gravels in a basin which exceeds 55.0°F (12.8°C);~~

~~(iii) In waters determined by the Department to support or to be necessary to maintain the viability of native Oregon bull trout, when surface water temperatures exceed 50.0°F (10.0°C);~~

~~(iv) In waters determined by the Department to be ecologically significant cold-water refugia;~~

~~(v) In stream segments containing federally listed Threatened and Endangered species if the increase would impair the biological integrity of the Threatened and Endangered population;~~

~~(vi) In Oregon waters when the dissolved oxygen (DO) levels are within 0.5 mg/l or 10 percent saturation of the water column or intergravel DO criterion for a given stream reach or subbasin;~~

~~(vii) In natural lakes.~~

~~(B) An exceedance of the numeric criteria identified in subparagraphs (A)(i) through (iii) of this subsection will not be deemed a temperature standard violation if it occurs when the air temperature during the warmest seven-day period of the year exceeds the 90th percentile of the seven-day average daily maximum air temperature calculated in a yearly series over the historic record. However, during such periods, the anthropogenic sources must still continue to comply with their surface water temperature management plans developed under OAR 340-041-0026(3)(a)(D);~~

~~(C) Any source may petition the Commission for an exception to subparagraphs (A)(i) through (vii) of this subsection for discharge above the identified criteria if:~~

~~(i) The source provides the necessary scientific information to describe how the designated beneficial uses would not be adversely impacted; or~~

~~(ii) A source is implementing all reasonable management practices or measures; its activity will not significantly affect the beneficial uses; and the environmental cost of treating the parameter to the level necessary to assure full protection would outweigh the risk to the resource.~~

~~(c) Turbidity (Nephelometric Turbidity Units, NTU): No more than a ten percent cumulative increase in natural stream turbidities shall be allowed, as measured relative to a control point immediately upstream of the turbidity causing activity. However, limited duration activities necessary to address an emergency or to accommodate essential dredging, construction or other legitimate activities and which cause the standard to be exceeded may be authorized provided all practicable turbidity control techniques have been applied and one of the following has been granted:~~

~~(A) Emergency activities: Approval coordinated by DEQ with the Department of Fish and Wildlife under conditions they may prescribe to accommodate response to emergencies or to protect public health and welfare;~~

~~(B) Dredging, Construction or other Legitimate Activities: Permit or certification authorized under terms of Section 401 or 404 (Permits and Licenses, Federal Water Pollution Control Act) or OAR 141-085-0100 et seq. (Removal and Fill Permits, Division of State Lands), with limitations and conditions governing the activity set forth in the permit or certificate;~~

~~(d) pH (hydrogen ion concentration): pH values shall not fall outside the ranges identified in paragraphs (A) and (B) of this subsection. The following exception applies: Waters impounded by dams existing on January 1, 1996, which have pHs that exceed the criteria shall not be considered in violation of the standard if the Department determines that the exceedance would not occur without the impoundment and that all practicable measures have been taken to bring the pH in the impounded waters into compliance with the criteria:~~

~~(A) Fresh waters except Cascade lakes: pH values shall not fall outside the range of 6.5 – 9.0. When greater than 25 percent of ambient measurements taken between June and September are greater than pH 8.7, and as resources are available according to priorities set by the Department, the Department shall determine whether the values higher than 8.7 are anthropogenic or natural in origin;~~

~~(B) Cascade lakes above 5,000 feet altitude: pH values shall not fall outside the range of 6.0 to 8.5.~~

~~(e) Bacteria standards:~~

~~(A) Numeric Criteria: Organisms of the coliform group commonly associated with fecal sources (MPN or equivalent membrane filtration using a representative number of samples) shall not exceed the criteria described in subparagraphs (i) and (ii) of this paragraph. Freshwaters:~~

~~(i) A 30-day log mean of 126 *E. coli* organisms per 100 ml, based on a minimum of five (5) samples;~~

~~(ii) No single sample shall exceed 406 *E. coli* organisms per 100 ml.~~

~~(B) Raw Sewage Prohibition: No sewage shall be discharged into or in any other manner be allowed to enter the waters of the State unless such sewage has been treated in a manner approved by the Department or otherwise allowed by these rules;~~

~~(C) Animal Waste: Runoff contaminated with domesticated animal wastes shall be minimized and treated to the maximum extent practicable before it is allowed to enter waters of the State;~~

~~(D) Effluent Limitations and Water Quality Limited Waterbodies: Effluent limitations to implement the criteria in this rule are found in OAR 340-041-0120(12) through (16). Implementation of the criteria in this rule in water quality limited waterbodies is described in OAR 340-041-0026(3)(a)(I) and OAR 340-041-0120(17).~~

~~(f) Bacterial pollution or other conditions deleterious to waters used for domestic purposes, livestock watering, irrigation, bathing, or shellfish propagation or otherwise injurious to public health shall not be allowed;~~

~~(g) The liberation of dissolved gases, such as carbon dioxide, hydrogen sulfide, or other gases, in sufficient quantities to cause objectionable odors or to be deleterious to fish or other aquatic life, navigation, recreation, or other reasonable uses made of such waters shall not be allowed;~~

~~(h) The development of fungi or other growths having a deleterious effect on stream bottoms, fish or other aquatic life, or which are injurious to health, recreation, or industry shall not be allowed;~~

~~(i) The creation of tastes or odors or toxic or other conditions that are deleterious to fish or other aquatic life or affect the potability of drinking water or the palatability of fish or shellfish shall not be allowed;~~

~~(j) The formation of appreciable bottom or sludge deposits or the formation of any organic or inorganic deposits deleterious to fish or other aquatic life or injurious to public health, recreation, or industry shall not be allowed;~~

~~(k) Objectionable discoloration, scum, oily sleek or floating solids, or coating of aquatic life with oil films shall not be allowed;~~

~~(l) Aesthetic conditions offensive to the human senses of sight, taste, smell, or touch shall not be allowed;~~

~~(m) Radioisotope concentrations shall not exceed maximum permissible concentration (*MPC's*) in drinking water, edible fishes or shellfishes, wildlife, irrigated crops, livestock and dairy products, or pose an external radiation hazard;~~

~~(n) The concentration of total dissolved gas relative to atmospheric pressure at the point of sample collection shall not exceed 110 percent of saturation, except when stream flow exceeds the ten-year, seven-day average flood. However, for Hatchery receiving waters and waters of less than two feet in depth, the concentration of total dissolved gas relative to atmospheric pressure at the point of sample collection shall not exceed 105 percent of saturation;~~

~~(o) Total Dissolved Solids: Guide concentrations listed below shall not be exceeded unless otherwise specifically authorized by DEQ upon such conditions as it may deem necessary to carry out the general intent of this plan and to protect the beneficial uses set forth in OAR 340-041-0962: Mainstem Klamath River from Klamath Lake to the Oregon-California Border (river miles 255 to 208.5): The specific conductance shall not exceed 400 micromhos at 77° F. when measured at the Oregon-California Border (river mile 208.5);~~

~~(p) Toxic Substances:~~

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

~~(B) Levels of toxic substances shall not exceed the criteria listed in **Table 20** which were based on criteria established by EPA and published in **Quality Criteria for Water (1986)**, unless otherwise noted;~~

~~(C) The criteria in paragraph (B) of this subsection shall apply unless data from scientifically valid studies demonstrate that the most sensitive designated beneficial uses will not be adversely affected by exceeding a criterion or that a more restrictive criterion is warranted to protect beneficial uses, as accepted by the Department on a site specific basis. Where no published EPA criteria exist for a toxic substance, public health advisories and other published scientific literature may be considered and used, if appropriate, to set guidance values;~~

~~(D) Bio-assessment studies such as laboratory bioassays or instream measurements of indigenous biological communities, shall be conducted, as the Department deems necessary, to monitor the toxicity of complex effluents, other suspected discharges or chemical substances without numeric criteria, to aquatic life. These studies, properly conducted in accordance with standard testing procedures, may be considered as scientifically valid data for the purposes of paragraph (C) of this subsection. If toxicity occurs, the Department shall evaluate and implement measures necessary to reduce toxicity on a case-by-case basis.~~

~~(3) Where the naturally occurring quality parameters of waters of the Klamath basin are outside the numerical limits of the above assigned water quality standards, the naturally occurring water quality shall be the standard. However, in such cases special restrictions, described in OAR 340-041-0026(3)(a)(C)(iii), apply to discharges that affect dissolved oxygen.~~

~~(4) Mixing zones:~~

~~(a) The Department may allow a designated portion of a receiving water to serve as a zone of dilution for wastewaters and receiving waters to mix thoroughly and this zone will be defined as a mixing zone;~~

~~(b) The Department may suspend all or part of the water quality standards, or set less restrictive standards, in the defined mixing zone, provided that the following conditions are met:~~

~~(A) The water within the mixing zone shall be free of:~~

~~(i) Materials in concentrations that will cause acute toxicity to aquatic life as measured by a Department approved bioassay method. Acute toxicity is lethality to aquatic life as measured by a significant difference in lethal concentration between the control and 100 percent effluent in an acute bioassay test. Lethality in 100 percent effluent may be allowed due to ammonia and chlorine only when it is demonstrated on a case-by-case basis that immediate dilution of the effluent within the mixing zone reduces toxicity below lethal concentrations. The Department may on a case-by-case basis establish a zone of immediate dilution if appropriate for other parameters;~~

~~(ii) Materials that will settle to form objectionable deposits;~~

~~(iii) Floating debris, oil, scum, or other materials that cause nuisance conditions;~~

~~(iv) Substances in concentrations that produce deleterious amounts of fungal or bacterial growths.~~

~~(B) The water outside the boundary of the mixing zone shall:~~

~~(i) Be free of materials in concentrations that will cause chronic (sublethal) toxicity. Chronic toxicity is measured as the concentration that causes long-term sublethal effects, such as significantly impaired growth or reproduction in aquatic organisms, during a testing period based on test species life cycle. Procedures and end points will be specified by the Department in wastewater discharge permits;~~

~~(ii) Meet all other water quality standards under normal annual low flow conditions.~~

~~(c) The limits of the mixing zone shall be described in the wastewater discharge permit. In determining the location, surface area, and volume of a mixing zone area, the Department may use appropriate mixing zone guidelines to assess the biological, physical, and chemical character of receiving waters, and effluent, and the most appropriate placement of the outfall, to protect instream water quality, public health, and other beneficial uses. Based on receiving water and effluent characteristics, the Department shall define a mixing zone in the immediate area of a wastewater discharge to:~~

~~(A) Be as small as feasible;~~

~~(B) Avoid overlap with any other mixing zones to the extent possible and be less than the total stream width as necessary to allow passage of fish and other aquatic organisms;~~

~~(C) Minimize adverse effects on the indigenous biological community especially when species are present that warrant special protection for their economic importance, tribal significance, ecological uniqueness, or for other similar reasons as determined by the Department and does not block the free passage of aquatic life;~~

~~(D) Not threaten public health;~~

~~(E) Minimize adverse effects on other designated beneficial uses outside the mixing zone.~~

~~(d) The Department may request the applicant of a permitted discharge for which a mixing zone is required, to submit all information necessary to define a mixing zone, such as:~~

~~(A) Type of operation to be conducted;~~

~~(B) Characteristics of effluent flow rates and composition;~~

(C) Characteristics of low flows of receiving waters;

(D) Description of potential environmental effects;

(E) Proposed design for outfall structures.

(e) The Department may, as necessary, require mixing zone monitoring studies and/or bioassays to be conducted to evaluate water quality or biological status within and outside the mixing zone boundary;

(f) The Department may change mixing zone limits or require the relocation of an outfall if it determines that the water quality within the mixing zone adversely affects any existing beneficial uses in the receiving waters.

(g) **Alternate requirements for mixing zones**: For some existing or proposed discharges to some receiving streams, it may not be practicable to treat wastewater to meet instream water quality standards at the point of discharge or within a short distance from the point of discharge. Some of these discharges could be allowed without impairing the overall ecological integrity of the receiving streams, or may provide an overall benefit to the receiving stream. This section specifies the conditions and circumstances under which a mixing zone may be allowed by the Department that extends beyond the immediate area around a discharge point, or that extends across a stream width. An alternate mixing zone may be approved if the applicant demonstrates to the Department's satisfaction that the discharge (A) creates an overall environmental benefit, or (B) is to a constructed water course, or (C) is insignificant. The three circumstances under which alternate mixing zones may be established are described further below.

(A) **Overall environmental benefit.**

(i) Qualifying for alternate mixing zone based on overall environmental benefit: In order to qualify for an alternate mixing zone based on a finding of overall environmental benefit, the discharger must demonstrate to the Department's satisfaction the following:

(I) That all practical strategies have been or will be implemented to minimize the pollutant loads in the effluent; and

(II) For proposed increased discharges, the current actual discharge and mixing zone does not meet the requirements of a standard mixing zone; and

(III) Either that, on balance, an environmental benefit would be lost if the discharge did not occur, or that the discharger is prepared to undertake other actions that will mitigate the effect of the discharge to an extent resulting in a net environmental benefit to the receiving stream.

(IV) For the purposes of this rule, the term "practical" shall include environmental impact, availability of alternatives, cost of alternatives, and other relevant factors.

~~(ii) Studies required and evaluation of studies: In order to demonstrate that, on balance, an environmental benefit will result from the discharge, the following information shall be provided by the applicant:~~

~~(I) The effluent flow and pollutant loads that are detected or expected in the effluent, by month, both average and expected worst case discharges. The parameters to be evaluated include at a minimum temperature, biochemical oxygen demand, total suspended solids, total dissolved solids, pH, settleable solids, e. coli bacteria, oil and grease, any pollutants listed in Table 20 of this rule division, and any pollutant for which the receiving stream has been designated by the Department as water quality limited; and~~

~~(II) Receiving stream flow, by month; and~~

~~(III) The expected impact of the discharge, by month, on the receiving stream for the entire proposed mixing zone area for all of the pollutants listed above. Included in this analysis shall be a comparison of the receiving stream water quality with the discharge and without the discharge; and~~

~~(IV) A description of fish, other vertebrate populations, and macroinvertebrates that reside in or are likely to pass through the proposed mixing zone, including expected location (if known), species identification, stage of development, and time of year when their presence is expected. For existing discharges, the applicant shall provide the same information for similar nearby streams that are unaffected by wastewater discharges. In addition, any threatened or endangered species in the immediate vicinity of the receiving stream shall be identified; and~~

~~(V) The expected impact of the discharge on aquatic organisms and/or fish passage, including any expected negative impacts from the effluent attracting fish where that is not desirable; and~~

~~(VI) A description of the expected environmental benefits to be derived from the discharge or other mitigation measures proposed by the applicant, including but not limited to improvements in water quality, improvements in fish passage, and improvements in aquatic habitat. If the applicant proposes to undertake mitigation measures designed to provide environmental benefits (e.g., purchasing water or water conservation rights to increase stream flows or establishing stream cover to decrease temperature), the applicant shall describe the mitigation measures in detail, including a description of the steps it will take to ensure that the benefits of the mitigation measures are attained and are not lost or diminished over time.~~

~~(VII) Some or all of the above study requirements may be waived by the Department, if the Department determines that the information is not needed. In the event that the Department does waive some or all of the above study requirements, the basis for waiving the requirements will be included in the permit evaluation report upon the next permit renewal or modification relating to the mixing zone.~~

(VIII) Upon request of the Department, the applicant shall conduct additional studies to further evaluate the impact of the discharge, which may include whole effluent toxicity testing, stream surveys for water quality, stream surveys for fish and other aquatic organisms, or other studies as specified by the Depart-ment.

(IX) In evaluating whether an existing or proposed increase in an existing discharge would result in a net environmental benefit, the applicant shall use the native biological community in a nearby, similar stream that is unaffected by wastewater discharges. The Department shall consider all information generated as required in this rule and other relevant information. The evaluation shall consider benefits to the native aquatic biological community only.

(iii) Permit conditions: Upon determination by the Depart-ment that the discharge and mitigation measures (if any) will likely result in an overall environmental benefit, the Department shall include appropriate permit conditions to insure that the environmental benefits are attained and continue. Such permit conditions may include but not be limited to:

(I) Maximum allowed effluent flows and pollutant loads;

(II) Requirements to maintain land ownership, easements, contracts, or other legally binding measures necessary to assure that mitigation measures, if any, remain in place and effective;

(III) Special operating conditions;

(IV) Monitoring and reporting requirements; and

(V) Studies to evaluate the effectiveness of mitigation measures.

(B) **Constructed water course**: A mixing zone may be extended through a constructed water course and into a natural water course. For the purposes of this rule, a constructed water course is one that was constructed for irrigation, site drainage, or wastewater conveyance, and has the following characteristics:

(i) Irrigation flows, stormwater runoff, or wastewater flows have replaced natural streamflow regimes; and

(ii) The channel form is greatly simplified in lengthwise and cross sectional profiles; and

(iii) Physical and biological characteristics that differ significantly from nearby natural streams; and

(iv) A much lower diversity of aquatic species than found in nearby natural streams; and

(v) If the constructed water course is an irrigation canal, then it must have effective fish screens in place to qualify as a constructed water course.

(C) **Insignificant discharges**: Insignificant discharges are those that either by volume, pollutant characteristics, and/or temporary nature are expected to have little if any impact on beneficial uses in the receiving stream, and for which the extensive evaluations required for discharges to smaller streams are not warranted. For the purposes of this rule, only filter backwash discharges and underground storage tank cleanups are considered insignificant discharges.

(D) **Other requirements for alternate mixing zones**: The following are additional requirements for dischargers requesting an alternate mixing zone:

(i) Most discharges that qualify for an alternate mixing zone will extend through the receiving stream until a larger stream is reached, where thorough mixing of the effluent can occur and where the edge of the allowed mixing zone will be located. The portion of the mixing zone in the larger stream must meet all of the requirements of the standard mixing zone, including not blocking aquatic life passage; and

(ii) An alternate mixing zone shall not be granted if a municipal drinking water intake is located within the proposed mixing zone, and the discharge has a significant adverse impact on the drinking water source; and

(iii) The discharge will not pose an unreasonable hazard to the environment or pose a significant health risk, considering the likely pathways of exposure; and

(iv) The discharge shall not be acutely toxic to organisms passing through the mixing zone; and

(v) An alternate mixing zone shall not be granted if the substances discharged may accumulate in the sediments or bioaccumulate in aquatic life or wildlife to levels that adversely affect public health, safety, or welfare; aquatic life; wildlife; or other designated beneficial uses; and

(vi) In the event that the receiving stream is water quality limited, the requirements for discharges to water quality limited streams supersede this rule.

(5) Testing methods: The analytical testing methods for determining compliance with the water quality standards contained in this rule shall be in accordance with the most recent edition of **Standard Methods for the Examination of Water and Waste Water published jointly by the American Public Health Association, American Water Works Association, and Water Pollution Control Federation**, unless the Department has published an applicable superseding method, in which case testing shall be in accordance with the superseding method; provided, however, that testing in accordance with an alternative method shall comply with this rule if the Department has published the method or has approved the method in writing.

[ED. NOTE: The Table(s) referenced in this rule is not printed in the OAR Compilation. Copies are available from the agency.]

[Publications: The publication(s) referred to or incorporated by reference in this rule are available from the office of the agency.]

Stat. Auth.: ORS 468.735, ORS 468B.035 & ORS 468B.048
Stats. Implemented: ORS 468B.048
Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 1-1980, f. & ef. 1-9-80; DEQ 18-1987, f. & ef. 9-4-87; DEQ 14-1991, f. & cert. ef. 8-13-91; DEQ 17-1992, f. & cert. ef. 8-7-92 (and corrected 8-13-92); DEQ 21-1995(Temp), f. & cert. ef. 9-21-95; DEQ 5-1996, f. & cert. ef. 3-7-96; DEQ 22-1997, f. & cert. ef. 10-24-97

340-041-0975

Minimum Design Criteria for Treatment and Control of Waste

Subject to the implementation program set in OAR 340-041-0120, prior to discharge of any wastes from any new or modified facility to any waters of the Klamath Basin, such wastes shall be treated and controlled in facilities designed in accordance with the following minimum criteria. (In designing treatment facilities, average conditions and a normal range of variability are generally used in establishing design criteria. A facility once completed and placed in operation may operate below the design criteria limit at times due to variables which are unpredictable or uncontrollable. This is particularly true for biological treatment facilities. The actual operating limits are intended to be established by permit pursuant to ORS 468.740 and recognize that the actual performance level may at times be less than the design criteria.):

(1) Sewage wastes:

(a) During periods of low streams flows (approximately May 1 to October 31): Treatment resulting in monthly average effluent concentrations not to exceed 20 mg/l of BOD and 20 of suspended solids or equivalent control;

(b) During the period of winter stream flows (approximately November 1 to April 30): A minimum of secondary treatment or equivalent control and unless otherwise specifically authorized by the Department, operation of all waste treatment and control facilities to maximum practicable efficient and effectiveness so as to minimize waste discharge to public waters;

(c) Effluent BOD concentrations in mg/l, divided by the dilution factor (ratio of receiving stream flow to effluent flow) shall not exceed one unless other wise approved by the EQC;

~~(d) Sewage wastes shall be disinfected, after treatment, equivalent to thorough mixing with sufficient chlorine to provide a residual of at least 1 part per million after 60 minutes of contact time unless otherwise specifically authorized by permit;~~

~~(e) Positive protection shall be provided to prevent bypassing raw or inadequately treated sewage to public waters unless otherwise approved by the Department where elimination of infiltration and inflow would be necessary but not presently practicable;~~

~~(f) More stringent waste treatment and control requirements may be imposed where special conditions may require.~~

~~(2) Industrial wastes:~~

~~(a) After maximum practicable inplant control, a minimum of secondary treatment or equivalent control (reduction of suspended solids and organic material where present in significant quantities, effective disinfection where bacterial organisms of public health significance are present, and control or toxic or other deleterious substance);~~

~~(b) Specific industrial waste treatment requirements shall be determined on an individual basis in accordance with the provisions of this plan, applicable federal requirements, and the following:~~

~~(A) The uses which are or may likely be made of the receiving stream;~~

~~(B) The size and nature of flow of the receiving stream;~~

~~(C) The quantity and quality of wastes to be treated; and~~

~~(D) The presence or absence of other sources of pollution on the same watershed.~~

~~(c) Where industrial, commercial, or agricultural effluents contain significant quantities of potentially toxic elements, treatment requirements shall be determined utilizing appropriate bioassays;~~

~~(d) Industrial cooling waters containing significant heat loads shall be subjected to offstream cooling or heat recovery prior to discharge to public waters;~~

~~(e) Positive protection shall be provided to prevent bypassing of raw or inadequately treated industrial waste to any public waters;~~

~~(f) Facilities shall be provided to prevent and contain spills of potentially toxic or hazardous materials and a positive program for containment and cleanup of such spills should they occur shall be developed and maintained.~~

Stat. Auth.: ORS 468
Stats. Implemented: ORS 468B.030
Hist.: DEQ 128, f. & ef. 1-21-77

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Attachment B - Division 41 Revisions
Response to Public Comments
(November 10, 2003)

Definition Comments **340-041-0002**	
Comment 1 Add Definitions	• Include definitions for "optimal thermal conditions", "lake", "reservoir", and "stream reach". (20) • Add definition for "micro-thermal refugia" to refer to small cool water zones associated with subsurface seeps and hyporheic flow to provide short term cold-water refuge. • Add definitions for "natural thermal regimes", "all feasible steps", and "temperature management plans" (TMP's). (34) • Basin vs. Subbasin: these terms need to be defined and clarified. (27)
Response	*The term, "optimal thermal conditions" means that adverse impacts to anadromous fish are not anticipated at the temperature levels in the rule. The term "lakes" refers to natural lakes, while "reservoirs" are man-made. For purposes of mapping the beneficial uses, the term "stream reach" is considered to be the distance between one tributary or physical feature (e.g., a bridge), and the next downstream tributary or feature. While DEQ has not added these definitions to the rule, the final rule text has been clarified to include these concepts.* *DEQ has added a definition of cold water refugia. While DEQ is primarily concerned with macro sources of cold water refuge, the cold water refugia definition includes any significant source of cold water and therefore addresses the comment provider's concern.* *The concept of "natural thermal regime" refers to the pattern of temperatures in space and time throughout a watershed. The term is commonly used in discussing the effects of temperature. However, the term is not used in the final rule and is therefore not defined.* *The language, "all feasible steps" is used in the context of temperature management plans for nonpoint sources. It has been revised for clarity with the term "all practical steps". DEQ's intent for this language is to ensure that facilities and activities developing a temperature management plan incorporate all control measures that are both technically and economically available to the facility or activity.* *The rule requires nonpoint sources other than state and private agricultural and forestry, to develop temperature management plans to address their thermal impacts. These plans function like a compliance schedule in an NPDES permit and articulate the control measures the nonpoint source intends to pursue in order to comply with water quality standards. DEQ believes that the final rule text is self-explanatory and therefore is not including a separate definition for the concept of temperature management*

	plans. *DEQ agrees that the terms "basin" and "subbasin" should be defined and they are included in the final rule. "Basin" refers to a 3rd field hydrological unit established by the U.S. Geological Survey. "Subbasin" refers to a 4th field hydrological unit established by the USGS.*
Comment 2 Ambient Stream Temperature	• This definition is unclear in relation to thermal potential and natural conditions. (12) • Definition not sufficient to describe fish thermal habitat. "Actual" should be removed from definition; "bulk" should be added to describe streams thermal condition being considered. (43) • Intentions of this definition are unclear. Suggests that the use of the phrase refer to an individual measurement at a specific place and time. Definition does not explain how data on ambient stream temperatures will be used to determine compliance of individual sources. Definition too vague to be used for regulatory purposes. (34)
Response	*DEQ has made revisions to this definition to clarify its intent and application to the rule text.* *At the comment provider's suggestion, "actual" has been removed.* *DEQ does not agree that the definition need explain how these temperatures are used for regulatory purposes. DEQ believes that discussion is adequately set out in the implementation sections of the rule text.*
Comment 3 Applicable Criteria	Definition should include protection of cold water uses and Antidegradation requirements, namely the maintaining of water colder than the criteria where it currently exists. (34)
Response	*DEQ agrees and has clarified the definition.*
Comment 4 Cold-Water Aquatic Life	• The definition is ambiguous because it defines a temperature-related use based on dissolved oxygen concentration. This definition should be dropped or a reference to the beneficial use maps should be included. (23, 45) • Distinction between this definition and "cool-water aquatic life" is unclear. (41, 45) • Should include reference to other native cold water species such as sculpin and smelt. (34)
Response	*DEQ agrees; the reference to dissolved oxygen in the definition has been dropped.* *The distinction with cool water aquatic life has been revised for clarity.*

	Sculpin and smelt have not been added to the definition. However, the definition has been revised to clarify that it is not limited to the species listed as examples in the definition.
Comment 5 Cold Water Refugia	• Clarify definition of "Cold Water Refuge". (32, 33, 34, 45, 49) • "Ecologically sufficient Cold-Water Refuge" is an insufficient definition (43) and should be deleted as it is no longer used in Division 41. (45, 49)
Response	*DEQ has dropped the term "ecologically significant cold water refuge" in favor of a definition of cold water refugia. The new cold water refugia definition addresses the substantive comments.*
Comment 6 Colder Water Salmon and Steelhead Habitat	Definition should use of the word "core" to conform to the EPA Regional Temperature Guidance. (34) "...or bull trout migration, foraging, and sub adult rearing habitats" should be included in definition if referenced in rule language. (34)
Response	*DEQ agrees and has revised as suggested. This category is now defined as "Core Cold Water Habitat Use" (see 340-041-0001(13))*
Comment 7 Cool-Water Aquatic Life	• Definition should include Redband Trout. (30) • "Chub" should read "chum". (38)
Response	*Redband trout are not included in the definition, however, the definition has been revised to clarify that it is not limited to the species listed as examples in the definition.* *DEQ intends to refer to species of "chub", not "chum" salmon, in this definition.*
Comment 8 Critical Habitat	• Definition should include areas that are not currently supporting threatened and endangered species, but are needed to support them. This recognizes loss of habit as a primary reason for Endangered Species Act listing status. (34) • Department should clarify definition; reference to "threatened and endangered species" could imply that the definition refers to formally designated critical habitat, pursuant to the Endangered Species Act. (34)
Response	*DEQ intends the definition to refer to formally designated critical habitat. The definition has been clarified to include the agencies providing critical habitat data.*

Comment 9 De Minimis	• De minimis should not be increased to 0.3°C. (23, 34) • "Across the applicable stream reach" used in this definition is unclear. (21, 22, 34) • De minimis should be defined for more than just temperature standards. (45, 49) • Definition language "Seven-day average maximum basis" allows for daily temperature increases in excess of 16.3°C, allowing for unacceptable discharges into degraded streams. (34)
Response	*DEQ disagrees and believes 0.3°C is appropriate. We have validated this position with EPA, NOAA-Fisheries, and the U.S. Fish and Wildlife Service. However, for clarity, we have deleted the term "de minimis" in the rule text and used more detailed language in the temperature rule.*
Comment 10 Effluent Limited	Definition of "Effluent Limited" should be deleted as it is no longer used in Division 41. (45, 49)
Response	*DEQ agrees and the definition has been removed from the rule.*
Comment 11 High Quality Waters	Definition should be augmented with information on how Department applies the definition. (34)
Response	*DEQ does not agree. The rule text discusses the implementation of the High Quality Waters Policy. (Refer to section 340-041-0004(6)) No changes were made in response to this comment.*
Comment 12 Indigenous	Definition should be expanded to include areas required by aquatic life for survival or recovery, as defined by best professional judgment of biologists. (34)
Response	*This term is no longer in the rule text, and has been deleted from the definitions rule (see also Comment 19).*
Comment 13 Intergravel Dissolved Oxygen (IGDO)	Measurement of IGDO "within a redd" implies that areas that are ecologically impaired enough to not support redds will not be measured, thus not be deemed ecologically insufficient with regards to IGDO. Measurements should be taken at historic spawning locations as well as current redds. (34)
Response	*DEQ agrees. The definition has been changed to address this concern.*
Comment 14 Minimum (dissolved oxygen)	"Diurnal" should be replaced with "diel" as the intent of definition should be to refer to 24-hour lows, not just daytime hour lows. (34)
Response	*DEQ agrees; our intent is to reflect the entire 24 hour period. The definition has been changed.*

Comment 15 Monthly (30-day) Mean Minimum	Definition is incorrect as written. Value is a floating average of daily *minimum* values, not daily mean values. (33, 34)
Response	*This definition refers to dissolved oxygen standards. The dissolved oxygen standards are not being revised at this time; therefore the existing language remains the same. No changes were made in response to this comment.*
Comment 16 Natural Conditions	• Definition is ambiguous; refers to thermal potential in definition, while definition of thermal potential is ambiguous; natural condition definition refers to *subbasin* or reach; thermal potential definition refers to *stream* or reach. Relation of these two definitions unclear. (34) Clarify the difference between "thermal potential" and "anticipated thermal potential" in the definition (43, 23) • DEQ lacks reasonable basis for determining what natural conditions are for temperature. (39) • Definition does not take into consideration anthropogenic influences and is therefore misleading. (33) • The definition of "Natural Conditions" should include the provision that WQ conditions associated with Federally licensed dams, diversions, and other hydrologic modifications, are considered (or treated) the same as natural conditions. (15, 20)
Response	*DEQ agrees. The definition has been revised to provide clarity.* *DEQ has a reasonable basis for determining natural conditions; the revised definition includes a reference to natural thermal potential that is now directly linked to total maximum daily loads (TMDL's).* *DEQ does not believe the natural condition definition should include anthropogenic influences on stream temperature. No changes were made in response to this comment.* *DEQ does not equate water quality resulting from current dam operations to natural conditions. No changes were made in response to this comment.*
Comment 17 Nonpoint Sources	• Definition is vague and ambiguous; ODEQ should adopt the federal regulation. • Definition should state that any source that is not a point source is a nonpoint source. (34)
Response	*DEQ agrees. The Definition has been revised to provide clarity.*

Comment 18 Salmon and Trout Rearing and Migration Habitat	• Poorly defined. (21, 23) What does term "limited number of days" mean and what are limits? (34, 39) • Reference to "exceeds optimal" is misleading as these may be tolerable limits, but not optimal. (33)
Response	*DEQ agrees. The definition has been revised to provide clarity. Habitat is now defined under "Cold Water Salmon and Trout Rearing and Migration Habitat" (see 340-041-0001(11))*
Comment 19 Salmonids	Terms "native" and "indigenous" are not defined. Unclear if rules are protective of natives or introduced and how those are defined. (45, 49)
Response	*DEQ has dropped the term "indigenous" from the definition and clarified that introduced species are not included in the definition.*
Comment 20 Thermal Potential	• Definition is unclear and ambiguous. Do not refer to anthropogenic sources in definition (21, 34); Language "as closely as possible" is ambiguous. (21) • Definition should include stream flow in the calculation of thermal potential. (38) • DEQ lacks reasonable basis to support that it can calculate thermal potential. Define what factors go into calculating "anticipated thermal potential". (39) • Clarify DEQ acknowledgement of adverse effects to salmonids if a thermal potential is calculated to be higher than known temperature levels for salmonid beneficial uses. (39) • Definition should include the presence of federally recognized dams, diversions, and hydrologic modifications. (15, 20) • Definition does not adequately address effects of dams on temperature considered under this definition. Unclear if definition takes into consideration measures to reduce or eliminate impacts of dams. (35)
Response	*DEQ has revised the rule text to reduce ambiguity and include stream flow. See "natural thermal potential" (340-041-0001(36)).* *DEQ believes we can calculate thermal potential through TMDL's.* *DEQ has not incorporated dams into the definition of natural thermal potential. The Department intends to develop TMDL's as if the dams were not present.*

Antidegradation Comments **340-041-0004**

Comment 21 Concentration Increases	• How will concentration increases be assessed? Refer to Antidegradation Policy Implementation directive here for clarification. (25) • This provision allows for violations of water quality standards of impaired water bodies; there is no guidance for staff to determine the "adverse effect on beneficial uses". This provision should be stricken in its entirety. (34) • Annual basis for the determination of concentration increases ignores potential significant effects that could result from short-term degradation. (33, 39)
Response	*This paragraph has been revised (see "Nondegradation Discharges", 340-041-0004(3)) to reflect DEQ's position that this provision only applies to water conservation activities. Concentration increases will be assessed either by those specified in the Oregon Administrative Rules (e.g. dissolved oxygen) or by best professional judgment. This is explained in more detail in the "Antidegradation Policy Implementation Internal Management Directive for NPDES Permits and Section 401 Water Quality Certifications" (IMD) which has been incorporated by reference into the proposed rule. The Antidegradation Policy focuses on whether an activity will result in a measurable change in water quality from existing water quality. A "measurable change" will be based either on criteria specified in rule or on best professional judgment. Any of the following can be used in deciding the likelihood that an activity will result in a measurable change in water quality away from conditions unimpacted by anthropogenic source: a) percentage change in ambient conditions at appropriate critical periods; b) the difference between current ambient conditions and the conditions that would result if the proposed activity were allowed; c) percentage change in loadings; d) percent reduction in assimilative capacity; e) nature, persistence, and potential effects of the pollutant parameter; f) potential for cumulative effects; g) predicted impacts on aquatic biota; and h) degree of confidence in any modeling techniques used.* *DEQ does not believe that the provision on concentration increases allows for violations of water quality standards. The provision is designed to prevent a time-consuming and costly review to be undertaken for activities in which the source in question does not increase the mass of the pollutant of concern to the wastestream; however, there is a concentration increase of the pollutant due water conservation activities.* *DEQ has removed the reference to an "annual basis" and has clarified the language to reflect that all three conditions must be met, i.e. 1) the increase occurs as a result of a water conservation activity, 2) the total mass load of the pollutant is not increased, and 3) the concentration increase does not adversely affect either beneficial uses or threatened and endangered species.*

Comment 22 Exceptions are unclear	• Clarify exceptions; language unclear in regards to application to all sources, point and nonpoint sources. Clarify if threatened & endangered species would be protected. (21) • Exceptions described should be listed in section 340-041-0004(2) where they are mentioned. (45, 49)
Response	*DEQ has revised this paragraph (now section 9 "Exceptions") by removing references to major dischargers and other dischargers. DEQ believes that the antidegradation policy applies to both point and nonpoint sources. We have also added a caveat that the new or increased discharge will not adversely affect threatened and endangered species. We also note that the antidegradation rule (at OAR 340-041-0004(6)(b)) specifically incorporates by reference the "Antidegradation Policy Implementation Internal Management Directive for NPDES Permits and Section 401 Certifications" for evaluating whether the social and economic benefits of allowing a lowering of water quality outweigh the environmental costs of lowered water quality. The environmental costs can include the impacts to threatened or endangered species.* *DEQ believes the cross reference to the "exceptions" identified in OAR 340-041-0004(3-9) do not need to be set out or listed in section 2 of the rule.*
Comment 23 Exceptions (add language)	• Earlier drafts included language that allowed sources to calculate the environmental cost of high-energy use technology (i.e. chillers) as a factor in analyzing benefits. Recommends inclusion of previous language. (26, 27, 29, 32) • Add an "Environmental Effective Criteria" provision that would incorporate the value of leaving wastewater treatment plant treated effluent in the receiving stream in the analysis. If there is an environmental benefit, value should be acknowledged and considered in WQ temperature trading. (27, 29)
Response	*DEQ significantly revised the Antidegradation rule in response to other comments. DEQ believes that the process that it has defined in the "Antidegradation Policy Implementation Internal Management Directive for NPDES Permits and Section 401 Certifications", which is included by reference in the Antidegradation rule, provides instructions for evaluating the costs of alternatives to degradation, such as the use of chillers. Alternatives can be rejected as unreasonable because of excessive cost or other reasons, including adverse impact on other parts of the environment. It should be pointed out that if degradation of water quality is found to be the only reasonable alternative, then it still must be demonstrated that the social and economic benefit of such degradation outweighs the environmental cost of the degradation.* *DEQ believes that the existing rule language allows for consideration of any number of potential benefits, including that resulting from augmenting flow to reduce stream temperature with treated effluent.*

Comment 24 Exceptions allow for degradation of water quality	• Timber and agriculture must not be exempted from Antidegradation policy. (33, 35) • The exceptions render the Antidegradation policy virtually meaningless as they allow continual degrading of stream temperatures. (33, 34)
Response	*DEQ has revised this section in response to comments.* *DEQ agrees that timber and agriculture are not exempt from the Antidegradation policy. However, responsibility for ensuring that water quality standards, including antidegradation, are met on state and private forest and agricultural lands lies with the Oregon Department of Forestry and Oregon Department of Agriculture, which the Oregon Legislature has identified as the Designated Management Agencies.* *DEQ disagrees that the exceptions allow for continual degradation of stream temperatures. If a water body is already listed as water quality limited, then the "Exceptions" section prohibits a new or increased discharge of a pollutant related directly or indirectly to the water quality parameter for which the stream is listed. If the water body is not listed, then the antidegradation policy limits any new or increased discharge to a de minimis (0.3 C) or less increase in stream temperature. DEQ consulted with EPA, NOAA-fisheries and the U.S. Fish and Wildlife Service, to ensure that a 0.3 C increase will not cause a significant impact on salmonids (beneficial uses).*
Comment 25 High Quality Waters Policy	The term, "necessary and justifiable" is vague and open to interpretation. (24)
Response	*DEQ has revised this subsection [now 6(b)] and has referenced the "Antidegradation Policy Implementation Internal Management Directive for NPDES Permits and Section 401 Certifications" (IMD) which explains that a proposed lowering of water quality must be deemed "necessary" and "important," i.e. 'necessary' means no alternatives to lowering water quality are feasible and 'justifiable' means that the socioeconomic benefits of allowing water quality to be lowered outweigh the environmental costs. Since the decision on whether to allow degradation cannot be reduced to a single "litmus" test, there is some flexibility in the type of information that will feed the final decision. However, by defining the process in the IMD, DEQ intends to follow a "preponderance of evidence" approach in making any determinations under this policy.*

Comment 26 Mixing Zones	• Language is unclear. Read literally, the language would exempt all point-source dischargers because it refers to pollutants discharged into a mixing zone, not to pollutants while they are in a mixing zone. Clarify "properly calculated". (34, 45, 49) • NPDES permits (involving thermal discharge) that were processed under old rules need to be referenced that they will be protected under the new language. (40) • DEQ should not allow for mixing zones where toxic conditions could exist and degrade water quality. (33, 39)
Response	*DEQ agrees with the comment. This subsection has been revised [now subsection (b) in section (3) "Nondegradation Discharges"] to clarify our intent.* *With regard to NPDES permits issued under the old rules, DEQ is, in a separate rule package, developing rule language which will specify that holders of existing NPDES permits have a reasonable amount of time(not to exceed 5 years) to comply with new or revised water quality criteria. This rule is expected to be adopted and approved within months of this rule.* *DEQ believes the toxicity of mixing zone conditions are most appropriately addressed by considering acute toxicity. DEQ's existing rule language prohibits concentrations of pollutants that cause acute toxicity to organisms inside mixing zones (OAR 340-041-0053(2)(a)(A)). No changes were made in response to this comment.*
Comment 27 Outstanding Resource Waters Policy	• Add to list of priority water bodies: 1). Waters located in areas of low road density on federal lands, 2). Waters designated as critical habitat (not just for ESA listed species), 3). Waters within Key Watersheds and Late Successional Reserves on federal lands west of the Cascades. (36) • Do not list outstanding waters in order to avoid not recognizing waters that are not listed as "outstanding resource waters". (38) • Define how designation of ORW will result in non-degradation. (34)
Response	*DEQ believes that the list of types of priority water bodies set out in the proposed rule for nomination as Outstanding Resource Waters is sufficiently broad to include most of those that would be included by inserting the suggested language in the comment.* *DEQ does not believe that the act of designating a water body as being an Outstanding Resource Water is meant to ignore the importance of other waters of the State. DEQ believes that the listing of waterbodies as Outstanding Resource Waters should be reserved for waters with special ("outstanding") characteristics.* *According to the final rule, once a water body is designated as an ORW, its existing water quality must, with very limited exceptions, be "maintained and protected."*

Comment 28 Purpose	Language changes to Antidegradation Policy eliminate potential effectiveness. Changing of "implement" to "supplement" in proposed rule will effectively remove the implementation plan. (34)
Response	*DEQ disagrees that changing "implement" to "supplement" effectively removes the implementation plan. DEQ believes that the standards and provisions referenced in the rule language truly supplement the antidegradation policy because these focus on defining water quality criteria which does not constitute the entire implementation of the antidegradation policy. Implementation of antidegradation policy also requires that water quality that is better than the criteria be protected, and DEQ has developed the "Antidegradation Policy Implementation Internal Management Directive for NPDES Permits and Section 401 Certifications", which it has included by reference in the antidegradation rule, that lays out how antidegradation policy will be applied to NPDES permits and Section 401 Water Quality Certifications.* *No changes were made in response to this comment.*
Comment 29 Recurring Activities	• Rule does not address situation where "recurring" activity could increase in frequency, intensity, duration, or geographical extent, possibly resulting in increased effects on WQ. (23, 39) • Define spatial limit for exemption of recurring activities. (45, 49) • Recurring activities (grazing and timber harvest) should not be exempt from anti-degradation policy. These activities can be adjusted or modified to comply with water quality standards. (33, 34, 36) This provision should be stricken in its entirety. (34)
Response	*DEQ has revised this section (now (4) "Recurring Activities") to clarify that such activities will not trigger an antidegradation review as long as they do not increase in frequency, intensity, duration or geographical extent.*
Comment 30 Restoration Activities	• "Short term" is not well-defined. (24, 45, 49) • Term, "net ecological benefit", is unclear how it will be achieved and what the process for reconciliation is. (22) • This provision should include language that protects listed species. (22, 23, 36) • Provision poorly defined; language leaves determination of "reasonable measures that are consistent with the restoration objectives" up to ODEQ staff. There is no process for public review of this determination. (34)
Response	*DEQ has revised this section (now (5), "Exemptions to the Antidegradation Requirement") to provide a context for understanding what is meant by "short term" and "net ecological benefit," and to include protection of threatened and endangered species. In the case of short term activities,*

	the final rule indicates a limit of 6 months or less. DEQ believes that it should determine whether proposed riparian restoration activities include "reasonable measures that are consistent with the restoration objectives..."
Comment 31 Short-term Situations	• This provision should include language that protects listed species. (23) • This section is not permitted under the Clean Water Act and should be removed. (39) • Define "emergencies or otherwise protect public health and welfare", as basis for exemption from degrading activities. (34)
Response	*DEQ has revised section (5) "Exemptions to the Antidegradation Requirement"), to include language specifying protection of threatened and endangered species.* *DEQ believes that the Clean Water Act does not preclude DEQ from allowing short-term degradation of water quality in order to respond to emergency situations. All such decisions will be forwarded to EPA for review and approval as a temporary change to the otherwise applicable standard.* *DEQ has also provided further clarification that such emergencies must be a significant threat of loss of life, personal injury or severe property damage.*
Comment 32 Structural Issues	Section 340-041-0004(12) has structural numbering errors. *See official comment for corrections.* (49)
Response	*DEQ has revised this section (now (9), "Exclusions") to reflect the correct references to other sections of the rule.*
Comment 33 Temperature	• This section has no legal basis; situations where a discharge could cause toxic conditions within a mixing zone, but have less than a de minims effect at the edge of a mixing zone, are disregarded. (34, 39) • Term, "De minimis changes in stream temperature..." is poorly defined and arbitrary. Undefined mixing zones make de minims measurements arbitrary. There is no limit placed on overlapping mixing zones. (34) • Proposed language would allow de minimis increases to all sources under all conditions without regulating increases that are less than 0.3°C. (34) • Should not be exclusive to de minimis *temperature* increases. (45, 49)
Response	*DEQ has revised this section [now subsection (3)(c)] in response to comments.* *DEQ believes that there is a legal basis for defining de minimis conditions.*

	EPA guidance documents on antidegradation policy implementation fully embrace the concept of defining de minimis changes in order to increase the effectiveness of the policy. DEQ disagrees that the provision allows for toxic conditions to occur within the mixing zone because while the temperature provision is limited to a change in temperature between the upstream end of the stream reach and the downstream end, a point source with a mixing zone for a thermal load would also need to comply with the mixing zone provision in this section which by requiring compliance with OAR 340-041-0053 would prohibit acutely toxic conditions from occurring. *The description of a de minimis increase in temperature has been changed to clarify the spatial range over which it applies. DEQ believes that the combination of mixing zone and de minimis temperature provisions constitute a solid regulatory framework that reflects the reality that each mixing zone is necessarily unique in order to reflect local conditions. The mixing zone provision has also been revised to indicate that in a situation in which there are overlapping mixing zones, the nondegradation discharge exemption to antidegradation review would not apply (i.e. a source would be required to undergo a full antidegradation review if it had a mixing zone that overlapped with another point source's mixing zone).* *DEQ disagrees that all sources with thermal discharges that result in less than de minimis change in stream temperature will go unregulated. If sources have overlapping mixing zones, then the de minimis temperature exemption from antidegradation review does not apply and the sources are subject to antidegradation review regulations. If sources do not have overlapping mixing zones, then they are still subject to regulations in OAR 340-041-0007 and OAR 340-041-0028. The revised section (3) "Nondegradation Discharges" now contains the statement that new or increased discharges are subject to this Division (i.e. OAR-340-041) to emphasize this fact.* *DEQ revised this section (now a new subsection (3)(d), "Nondegradation Discharges") to include address when de minimis decreases of dissolved oxygen are exempt from an antidegradation review.*

Temperature Rule Language Comments **340-041-0028**

Comment 34 Background	• Stream temperatures cannot be improved by habitat restoration activities; the Agency is identifying problems with no solutions. (12) • The Agency should not regulate citizens based on temperature criteria when there is no sound science that proves that this method is effective or attainable. (12) • Definition is lacking; language should include importance of temperatures in maintaining and restoring healthy salmonid populations; last sentence is ambiguous as it does not refer to humans, while attempting to refer to anthropogenic influences. (34)
Response	*DEQ disagrees that riparian restoration will not have a positive effect on stream temperatures, and that the temperature criteria are not supported by science. No changes were made in response to these comments.* *Regarding the ambiguity of the last sentence, DEQ agrees and the last sentence has been revised to include human activities.*
Comment 35 Biologically Based Numeric Criteria are unattainable and overly restrictive	• Numbers are set at levels that are unrealistic and unattainable for most of the state (4,10,17); Agency needs to allow for anthropogenic use. (4,17) • 12°C criterion for juvenile bull trout rearing is too low. 13°C is supportive enough. (47) • Numeric spawning criteria for salmon, steelhead, and trout are unnecessary. If a stream meets the critical period summer temperature criteria, natural cooling should result in suitable spawning temperatures. (47)
Response	*DEQ disagrees that criteria are unattainable. There are three possible criteria (biologically based numeric criteria, natural conditions criteria, and site specific criteria) that may apply at any one location depending on the site specific conditions. DEQ is certain that at least one of these criteria will be met at every location in the state. DEQ disagrees that numeric spawning criteria are unnecessary and includes these criteria to allow for further protection of aquatic life.* *No changes were made in response to these comments.*
Comment 36 Biologically Based Numeric Criteria should reflect historical data.	• Rule should be rewritten to address that criteria should apply only when Bull Trout are proven to have been present historically (for the trigger of 16°C in bull trout migration, foraging and sub-adult rearing reaches). Concern is that 16°C will be designated in reservoirs and down stream areas where Bull Trout have only used in winter because of low flows, high temperatures, or historic patterns. (42) • Numeric criteria should be based on historical data. (8)
Response	*The beneficial use maps reflect current bull trout and State's estimate of potential expansion of bull trout territory (currently cut off by obstacles and/or warmer stream temperatures) based on the current or likely future*

	potential for cold water habitat to be available.
Comment 37 Biologically Based Numeric Criteria are not protective of beneficial fish uses.	• 7-day moving average temperatures are a bad choice for measuring compliance with temperature standards, as fish do not respond over 7-day periods. Instantaneous temperatures should be used when developing standards. Spikes in temperature could cause irreversible damage to fish without going outside of the standard. (33, 34, 36, 39) There should be single-day maximum standards as well, to protect for spikes in temperatures. (3) • There is no scientific basis that 20°C will protect salmonids. The proposed temperature standards should be reduced to at least 18°C given high incidence of mortality in temperatures higher than this. (39) 18°C is not protective of salmon and trout rearing habitat. 20°C is not protective salmon and steelhead migration habitat. (34) 16° is too conservative and overly–protective. (47) • Applicable temperature criterion should be the natural thermal potential of the stream, not a higher, superceding criterion. (34) • Spawning and Rearing Habitat temperature standards are too high for both Coho and Steelhead. These two species should be specifically "colder water salmonids" and spawning criterion should not be more than 9°C during spawning season. (3)
Response	*DEQ agrees with the concern. However, cold water refugia should allow fish to hold for short durations of warmer temperatures. In addition, the revised mixing zone provisions are intended to prevent lethal conditions from occurring as a result of point source discharges. Therefore an additional instantaneous limit is not needed. No changes were made in response to this comment.* *DEQ believes that the biologically based numeric criteria are protective. These numeric criteria are supported by the scientific literature, including EPA's Regional Temperature Guidance. In the case of the 20°C temperature, this criterion corresponds to migration corridors only. This is a short term exposure to the fish. We are also assuming adequate cold water refugia are available in these locations. No changes were made in response to this comment.* *The Clean Water Act has long recognized that natural conditions of a water body supersede numeric criteria. DEQ finds no reason to treat temperature any differently. EPA's Regional Temperature Guidance acknowledges that warmer natural conditions override the numeric criteria.* *DEQ agrees that the spawning criteria in the rule are warmer than optimal for Coho. However, this rule requires the 13°C temperatures to be met in the fall and spring. Since Coho spawn in the winter, DEQ believes that meeting the numeric criteria in the spring and fall will result in even colder temperatures suitable for Coho in the winter.*

Comment 38 Biologically Based Numeric Criteria are poorly defined	• Definitions assume that current temperatures are all that are considered when defining fish habitat uses. Unclear if beneficial-use maps or definitions are controlling authority. (23) • Clarify (4) (d) to state that feasible steps will be taken in all streams. (33) • "Salmon and trout...rearing habitat" is not defined in definition section. Inconsistent with "Salmon and Trout Rearing and Migration Habitat" defined in definition section. Definitions and criteria should be consistent. (34) • Single numeric criteria for fish are not reflective of natural variability. (1, 6, 8, 10, 44, 48); ODEQ should establish ranges of temperature, rather than set single numeric criteria. (44, 48); Distinct species of salmonids have different temperature needs; single numeric criteria for multiple species do not reflect individual species' temperature ranges and habitat needs. (3) • Conditions below reservoirs are singled out and assigned unattainable criteria. (Re: Section 340-041-0028(4)(f)). (15, 20)
Response	*DEQ disagrees that the maps are based solely on current temperatures. Rather the maps are based on existing info on fish distribution and timing. The maps are incorporated into the rule and are therefore an enforceable part of the rule.* *DEQ has revised 4(d) to ensure that cold water refugia are sufficiently distributed to allow migration without significant adverse effect.* *DEQ agrees and has added a definition of salmon and trout rearing use in the rule.* *DEQ considered using ranges in the temperature criteria, However, the implementation challenges associated with using ranges are difficult to overcome. We are confident that the numeric criteria are protective and achievable when taken with the rest of the temperature requirements. The final rule reflects a balance between technical precision and practical implementation realities.* *DEQ singled out bull trout spawning below dams because of the dam's ability to affect water temperatures in these sensitive areas. We continue to believe this is an important distinction to be made in the final rule. No changes were made in response to this comment.*
Comment 39 Cool Water Species	Language should be changed to include ambient temperatures, "...may not be warmed by more than a de minimis amount *over ambient conditions...*" (26)
Response	*DEQ agrees and the definition has been revised.*

Comment 40 De Minimis Allowance measurement	• Current technology lacks the ability to measure this amount precisely; de minimis calculation process is unclear. (18, 21, 22, 24, 44) • De minimis level of warming is based upon measurability, with no consideration of actual need of aquatic species. (34) • De minimis allowance works if anthropogenic effects are included in the calculation of thermal potential. (31) • De minimis provision is arbitrary because the boundary of the mixing zone that the temperature is measured is undefined. (34)
Response	*DEQ has the ability to monitor temperature to a tenth of a degree Celsius. However, we have dropped all references that included measurements to a hundredth of a degree.* *According to federal and academic experts available to DEQ (including ODFW, NOAA Fisheries, EPA, and the US Fish and Wildlife Service personnel), there should be no adverse impact on aquatic species from increases of 0.3°C or less above the applicable temperature criteria.* *Although the de minimis concept has been deleted, the final rule continues to set 0.3°C as an acceptable amount of anthropogenic warming in Waters of the State.* *DEQ disagrees that the mixing zones are arbitrarily established. The final rule includes revised mixing zone considerations that will ensure that mixing zones do not cause adverse thermal impacts to fish. In addition, Federal and State guidance includes additional recommendations on setting temperature mixing zones.*
Comment 41 Lakes	• Lakes provision in Temperature section is unclear in its application to reservoirs. (18, 20, 49) • Rule should be applied to natural lakes specifically, to extent that it does not conflict with other reservoir rules. (31) • Proposed standards are unachievable because of natural factors that affect lake temperatures. (20) • Language, "...if a greater increase could reasonably be expected to adversely affect on fish or other aquatic life" undermines purpose of a standard and should be removed. Unclear if this refers to individual discharger or a cumulative effect. (39)
Response	*DEQ has clarified that lakes refers to natural lakes and not reservoirs.* *DEQ does not authorize point source discharges into natural lakes. The criteria in the rule prevent nonpoint sources from having more than a 0.3°C heat impact above ambient stream temperatures. If the lake is naturally warm, the natural condition would be the applicable criteria.* *DEQ disagrees regarding the language "...if a greater increase could reasonably be expected to adversely affect on fish or other aquatic life".*

	The purpose of the water quality criteria is to protect beneficial uses. If, due to site-specific circumstances, the aquatic life would not be adversely affected by a warmer temperature, there is no reason to impose a more stringent limit.
Comment 42 Natural Conditions Criteria needs clarification	• Explain process of when "natural conditions may exceed biological based criteria." (22) • Clarify process if natural temperatures are deemed to be less than standard. (33, 39) • Rule language is unclear regarding how natural conditions will be measured and how they differ from site-specific criteria. (16, 38)
Response	*DEQ will use the biologically based numeric criteria to identify temperature impaired state waters (placed on the biennial 303(d) list). This will result in a temperature TMDL analyses by the State. During these analyses, DEQ will determine whether the biologically based numeric criteria are achievable (by calculating the watershed's "natural thermal potential"). Once available, the natural thermal potential will be deemed the natural condition for the water body. The analyses and results of TMDL's undergo a public review process and are approved by EPA. Upon EPA approval, the natural conditions set out in the TMDL automatically supersede the biologically based numeric criteria for that water body. In turn, DEQ intends to revise this rule from time to time to update the beneficial use maps and reflect these approved TMDL's.* *Once documented in a TMDL, the naturally occurring conditions become the applicable criteria for that portion of the water body. However, the "cold water protection" provision (340-041-0028(11)) limits the water body from being warmed more than 0.3C above either the biologically based numeric criteria or the natural conditions criteria.* *Natural conditions and site specific criteria are different. Site specific criteria establish another alternative to the biologically based numeric criteria and both fully support fish. DEQ intends to use the "site specific" criteria when it documents situations where an alternative, numeric biologically based temperature is justified by the unique characteristics and conditions of a particular water body.*
Comment 43 Natural Conditions should supercede biologically based numeric criteria standards.	• Language should reference TMDL's. When natural conditions are determined, these should supercede any default biologically-based numeric criteria. (34) • Temperature standards should be based on natural thermal regime of a stream. If fixed criteria are used, the process to establish "natural conditions" needs to be developed and implemented in a timely manner for development of realistic management plans. (43)
Response	*The definition of natural conditions makes the linkage with TMDL's; DEQ agrees that the natural conditions supersede the biologically based criteria. The process for establishing natural thermal potential is well*

	documented in each TMDL and need not be repeated in these rules. No changes were made in response to these comments.
Comment 44 Oceans and Estuaries	De minimis criterion that applies to oceans and estuaries is undefined. (23, 33) Criteria are unattainable as there is no control over ocean temperatures. (20)
Response	*DEQ will be applying these criteria to persons discharging into the ocean. The word "estuaries" has been deleted in favor of the term "Bays." The State of Oregon can regulate such discharges through its various point and nonpoint source control programs. Non-anthropogenic ocean conditions are considered natural conditions that supersede other criteria.*
Comment 45 Policy	• Terminology in this section is unclear between States proposed standards for "optimal thermal conditions" and "natural conditions". (20) • Policy is more stringent than needed to protect salmonids and goes beyond requirements of state and federal law. Policy is inconsistent with temperature criteria. (45, 49) • Definition is lacking; should seek higher expectations then "protecting aquatic ecosystems" and also include provision to improve systems. Risks should be eliminated, not "minimized". Policy provision should emphasize thermal refugia. (34)
Response	*DEQ continues to support the policy statements made in this section, and has not made revisions in response to these comments.* *See also Comments 42 and 43 for clarification regarding natural conditions and optimal thermal potential.*
Comment 46 Protecting Cold Water provision is not protective enough.	• Drop provision (12)(a) from standards. Waters colder than criteria may support areas of high productivity and should not be warmed more than a de minimis; (23) • Remove waiver "if colder water is not necessary..." from this section to ensure that naturally cold water is protected under all circumstances. (3, 34, 35) • Proposed rules do not protect existing cold water habitats. (33, 39)
Response	*DEQ disagrees. Cold water need not be protected under all circumstances. The rule only allows warming of existing cold water if there are no anadromous salmonids or bull trout present; if it is not included as critical habitat under the Endangered Species Act, and it is not needed for downstream use. DEQ has also clarified that the winter cold water protection need only apply to spawning reaches, and will be based on rolling 60 day stream temperatures during the period of spawning use.*

Comment 47 Protecting Cold Water provision is unclear.	• "Downstream Temperatures in 12(a) is ambiguous and therefore not protective. Could imply anywhere downstream of discharge. (32) • How are "migration corridors" defined in this provision? • Does de minimis limit apply to corridor, or to edge of mixing zone? (32)
Response	*Migration corridors are areas that are used predominantly for migration in the summer, and where there is little or no rearing occurring during July and August. DEQ has added a definition for "migration corridors" in the definitions section of this rule (see OAR 340-041-0001(31)).* *The intent of this provision is to prevent any source from warming the cold water refugia that may occur in migration corridors. It is separate and distinct from an NPDES limit that may be based on a mixing zone calculation. Other provisions of this rule (340-041-0053(2)(d)(D)) address considerations for temperature mixing zones to ensure that adverse impacts to migration are avoided.*
Comment 48 Protecting Cold Water provision is too restrictive.	• This section does not allow for the warming of cold water from reservoir releases. (20) • Further restrictions of existing thermal sources in waterbodies are unnecessary and unjustified. (45, 49) • Delete Sections 340-041-0028(12)(b)(A) and (B); these sections are not workable for treatment plants discharging to cold winter waters. Winter-time temperature impacts are typically localized with little impact on ambient stream temperatures, and no result in biological impact. Suggests revising (b) to read, "...limited warming of cold water on a case-by-case basis that does not cause biological impairment". (27, 29, 32)
Response	*Cold water from reservoir releases is subject to the same protective requirements as any other cold water. As noted in the implementation section (12)(i), adverse impacts from water that is too cold must also be mitigated. DEQ disagrees that winter cold water protection is not important in spawning areas. Therefore, while the final rule has been clarified, the requirement for protecting some winter water temperatures has not been eliminated in its entirety.*
Comment 49 Site-Specific Criteria	• Valid water rights issued by the Oregon Water Resources Department should be added to the list of site-specific criteria. (31) • Site-specific criteria are wide open to abuse and do not ensure that beneficial uses will be protected. (39) • 340-041-0028(14)(F) and (G) are not science-based and therefore should be eliminated from the site-specific criteria. (35)

Response	*DEQ disagrees; the issue of stream flow is currently called out in the rule* 340-041-0028(13)(b)(A), *therefore listing valid water rights as site-specific criteria is unnecessary.* *DEQ disagrees that site-specific criteria are open to abuse since site-specific criteria will only be pursued where either 1) the unique characteristics of a water body indicate that full biological support can occur at warmer temperatures, or 2) where a UAA has been performed and the use (which has never been fully attained) is being downgraded. Therefore, DEQ believe existing uses will always be protected.* *DEQ agrees that sections 340-041-0028(14)(F) and (G)* should be *eliminated and has deleted them from the final rule.*
Comment 50 Unidentified Tributaries	• Canals and ditches constructed for the conveyance of non-potable waters should be excluded from proposed standards. (31) • This subsection would not ensure protection of undocumented populations of bull trout or bull trout habitat, as it could mean that headwaters are applied less stringent standards based on downstream use designations. (33, 39)
Response	*The State's definition of Waters of the State is beyond the scope of this rule.* *DEQ intends to revise the beneficial use maps periodically to incorporate new information concerning fish habitat. Currently, the maps incorporate areas identified as existing and potential bull trout habitat. If further bull trout habitat is identified in the future, the maps will be revised accordingly.*

Implementation of the Temperature Criteria Comments 340-041-0028(12)	
Issue	**Comment**
Comment 51 De Minimis Warming	• Cumulative or non-cumulative application of "de minimis" is ambiguous. (21, 23, 24, 33, 34, 35, 36, 38, 39,41, 45, 49) As written, de minimis clause does nothing to limit heating in streams. (33, 34) De minimis exemptions must not be cumulative. (3) • Language needs to describe how this provision would apply in subbasins with multiple land managers. (22) • Department's policy regarding warming of already impaired waters is unclear. (34) • Clarify if this provision applies to only a water body whose temperature equals or exceeds criterion, or if to water body with temperatures below criterion. (45, 49) • Discharge should be allowed to increase the stream temperature by a de minimis amount regardless of the actual temperature of the stream reach. (31) • Dams should not be held to a de minimis increase when more than a de minimis increase would have occurred naturally. (20) • Proposed rule needs to clarify how de minimis will be applied in a manner consistent with the Regional Temperature Guidance. (41) • If numeric criteria were set correctly, there is no logic that only a de minimis level of increase is appropriate. High quality waters and Antidegradation portions make this provision illogical. (44)
Response	*DEQ agrees with the comments that the proposed de minimis language was not sufficiently clear and has revised the de minimis concept in the final rule. The final rule does not use the term, but instead describes the allowance for human use above and beyond the criteria. DEQ has also clarified that this allowance applies to all sources located on a water body when taken together. DEQ believes this use of the de minimis concept is consistent with the recommendations in the EPA Regional Temperature Guidance.* *DEQ agrees that the de minimis concept applies to all state waters.* *The de minimis concept allows for a 0.3°C temperature increase above the applicable criteria.* *In the case of temperature impaired waters, DEQ intends to apply the criteria as if the water body has met the criteria. Those sources causing significant warming above the applicable temperature criteria will be required to reduce their discharge or activities to return the water body to full compliance with those criteria.* *In the cases of waters with temperatures colder than the criteria, dischargers are held to no more than 0.3 Celsius above the ambient cold water due to the "cold water protection" narrative criteria (OAR 340-041-0028(11)).*

	While the de minimis concept applies to all waters, DEQ disagrees that dams should be given a larger de minimis allowance if the water body would have been warmer in the absence of the dam. However, once this warmer natural condition is documented in a TMDL and approved by EPA, this warmer natural condition will become the applicable criteria. Thereafter, the de minimis concept would then be used in conjunction with the natural condition. *The final rule also includes revisions to the Antidegradation policy [OAR 340-041-0004(3)(c)] that clarifies that a de minimis discharge of heat less than or equal to 0.3 Celsius is not considered degradation subject to an antidegradation review. Discharges to high quality waters (water colder than the applicable criteria) will still be subject to an antidegradation review and the cold water narrative protections.*
Comment 52 Forestry and Agriculture on State and Private Lands	• Language needs clarification; concern over farmers and ranchers that are in compliance with the 1010 process will be in violation of temperature standard. Agricultural practices that are in compliance with considered in compliance with the proposed rule. (4, 8,12, 17) • Agricultural and Forest activities must do their part to achieve temperature standards. Compliance with SB 1010 and FPA being deemed in compliance with temperature standards is bad public policy. (34, 36, 39) • Forestry and Agriculture on State and private lands: section should reference any memorandums of understanding between the Oregon Department of Agriculture or the Oregon Department of Forestry, and DEQ. (23) • Forest Practices Act rules are not sufficient to be considered in compliance with ODEQ water quality standards. (34) • Replace word "Foresters" with "Operators" to remain consistent with other state statutes. (44)
Response	*DEQ has revised this text in the final rule. DEQ agrees that forestry operations on state or private lands that are in compliance with the Forest Practices Act are deemed in compliance with water quality criteria. However, nonpoint sources other than state and private forestry do not have the same legal status.* *DEQ will continue to work closely with Oregon Department of Agriculture and Oregon Department of Forestry to ensure that the Forest Practices Act and the Agriculture Water Quality Management Programs are effective at achieving water quality standards.* *DEQ changed the final rule to substitute "operators" in place of "foresters."*

Comment 53 Language Clarification	• Add language to the proposed rule to re-instate the provisions for Temperature Management Plans for point source discharging to streams that exceed the temperature standard, but where temperature TMDL has not yet been developed. (26, 27, 29, 32). Include existing TMP concept and language in the final rule. (30) • Add language to acknowledge that there are implementation alternatives available to dischargers that do "not cause" the standard to be violated. If the discharge is not contributing more than a de minimis increase in temperature over the ambient temperature, it should be allowed to discharge until ambient conditions improve by other means. (26) Temperature allocations must reflect the general TMDL allocation principles of "from each according to their contribution". (32) • Add low-flow exclusion to Implementation of Temperature Criteria provision. (26, 27)
Response	*DEQ has not extended TMP's to point sources in the final rule. However, we believe that each point source must prepare and submit a TMP-type document as part of its permit application. These documents should include steps and a schedule that the source plans on following to achieve compliance with the temperature criteria.* *DEQ acknowledges that a TMP-type document may be most helpful in a situation where, prior to a TMDL, the natural conditions of a water body are suspected to be warmer than the biological criteria. In such cases, the TMP should indicate that the source will take all practical steps to reduce or eliminate its heat contribution to the water body. The TMP-like document will either be incorporated into the permit or into a mutual agreement order (MAO).* *See also DEQ response to Comment 51, above.* *The final rule clarifies in the temperature implementation section [OAR 340-041-0028(12)(a)] that individual sources are only responsible for their own activity, each in accordance with its contribution.* *DEQ agrees that the low flow exclusion is appropriate and has added this in the final rule.*

Comment 54 Point Sources	• 340-041-0028(13)(d)(A) explanation of how effluent limits would be established needs clarification or an example. (23) • Point sources should not be penalized by requirements that are unreasonable or expensive to meet, when the standard is not being exceeded (discharges during winter months when temperatures are below the standards). (14) • Standards should protect beneficial uses, regardless of point or non point source. Point source should not be considered in compliance with standards just because it is in compliance with NPDES permit. Point Sources should be given no net increase in temperature. (34)
Response	*DEQ has removed the detail regarding the calculation of point source effluent limits and intends to put this information in an internal management directive on developing permit limits and conditions under the revised temperature criteria.* *See DEQ response to Comment 46 for the need for winter cold water protection.* *DEQ agrees that a source in compliance with a permit must also comply with applicable water quality criteria, including the temperature criteria.* *DEQ does not believe the final rule allows a net increase in water temperatures above current ambient conditions. The rule requires all sources to reduce or eliminate their warming until all sources, taken together, exceed the applicable temperature criteria by no more than 0.3 Celsius.*
Comment 55 Other Nonpoint Sources	• Revise provision so hydrofacilities involvement with TMP's and 401 certifications are clear. (41) • Temperature criteria standards should be applied consistently across state, private and federal lands. There are no statutes to direct actions under a TMP and no evidence to suggest that such a plan will correct the problem. (12) • The temperature rule language is unclear where and how it applies to nonpoint sources. (24) • Rule should only apply to sources that contribute more than a de minimis amount. (31)
Response	*DEQ agrees and has revised the final rule to better connect private hydropower facilities with the 401 water quality certification process. These facilities may be required to prepare a TMP in response to a 401 certification or an order implementing a completed TMDL.* *The rule does not impose TMP's to agricultural and forestry activities on state and private lands since these activities are subject to the water quality management programs administered by Oregon Department of Agriculture or the Oregon Department of Forestry.* *The temperature implementation section [OAR 340-041-0028(12)(g)]*

	explains how the temperature criteria will be applied to nonpoint sources. The beneficial use maps indicate where the biological criteria apply. DEQ does not believe additional rule text is needed to clarify how and where the temperature criteria apply to nonpoint sources.

Water Quality Standards Revision Comments- General	
Issue	**Comment(s)**
Comment 56 303(d) listed waters	Rule is not clear how currently listed (303(d) list) streams are impacted. (12)
Response	*This rule does not change the status of the current impaired waters on the 303(d) list. DEQ is in the process of updating the 303(d) list for 2004. DEQ will reevaluate any waters whose listing may no longer be appropriate, if any, at that time.*
Comment 57 Geographic Diversity	Temperature criteria do not reflect the geographic diversity of the State; elevation, terrain, and air temperature factors were not considered in establishing the temperature criteria. "Potential" of a stream cannot be calculated without taking into consideration the climate and terrain of the area. (12, 17)
Response	*DEQ agrees that water temperatures vary across the state. For this reason, the water quality rules offer three possible temperature criteria that may be applicable to any one location (biologically-based numeric criteria, natural conditions criteria, and site-specific criteria). In addition, we have included several exclusions (air temperature exclusion and low flow provision) that further mitigate variable conditions. Therefore, we think these options adequately address the natural variability across the Oregon landscape.*
Comment 58 Language Changes	• Undocumented language changes in the proposed rule should be withdrawn; i.e., the submission of the words "may" or "must" for "shall". (33, 35) • Structural changes to the proposed rule have not been adequately documented by ODEQ. These changes should be noted and provided for public review. (33, 34)
Response	*DEQ has made minor grammatical revisions to address concerns with the previous language. We have eliminated "shall" throughout the document and replaced it with "may" or "must" as appropriate. DEQ believes these are non-substantive changes that do not alter the meaning of the rules. No changes were made in response to this comment.* *This rule is a complete substitute for the previous Division 41 rule text. The*

	previous rule text was deleted in its entirety.
Comment 59 Monitoring	Monitoring is an important part of water quality standards and should be referenced in the rule. (24, 38)
Response	*DEQ has not described or required a particular monitoring process in this rule. DEQ believes monitoring considerations should be left to technical guidance and has not revised the rule to include detailed monitoring requirements at this time.*
Comment 60 Protection of ESA Listed Species	Adoption of revised water quality standards will result in the take of ESA listed species. DEQ must seek an incidental take permit from NOAA and FWS before it finalizes the rule, or modify so that the standards will not result in the take of listed species. (34)
Response	*DEQ has worked closely with EPA, ODFW, the U.S. Fish and Wildlife Service and NOAA Fisheries in developing these rules. The criteria are protective of ESA species and will not result in a take and therefore need not pursue an incidental take permit. No changes were made in response to this comment.*
Comment 61 State Wide Narrative Criteria	• "Naturally occurring water quality" is referred to in this section, but undefined elsewhere in the rule. Unclear if the term is supposed to have same definition as "natural conditions". (21) • Clarify language: "...naturally occurring quality of a water of the state is *less stringent* than the numeric criteria..." (23, 34) This language is inaccurate because the naturally occurring water quality is not in and of itself a criterion. (23) • This should require this finding to be based on TMDL that is subject to ESA. (34)
Response	*DEQ has clarified the rule to use the term "natural condition" in place of "naturally occurring water quality" in this rule.* *The numeric criteria are designed to protect aquatic life including endangered species of anadromous fish. To the extent natural conditions could achieve more stringent conditions, they are not necessary. However, where natural conditions cannot achieve the numeric criteria, the natural conditions are controlling and the less stringent requirements prevail. Once documented in a TMDL, the naturally occurring conditions automatically become the applicable criteria for that portion of the water body.*
Comment 62 Thermal Effluent Trading	Could allow for degradation of stream because of ambiguity of "within the basin" when referring to thermal trading. (36)
Response	*DEQ has revised the final rule to delete the reference to basins in this subsection.*

Comment 63 Use Attainability Analysis (UAA)	• Rule language should discuss or reference UAA process. (24, 34) • Completing a UAA will be time consuming and expensive; there is no guarantee that the EPA will approve site-specific criteria. (12, 17)
Response	*Federal rules already set out guidance for completing a Use Attainability Analysis. It is not necessary to repeat these provisions in state rules. DEQ has not revised the final rule to include these provisions.* *DEQ is committed to pursuing UAA's where they are justified by site-specific conditions and where beneficial uses are marginal or non-existent.*
Comment 64 Violation of Procedural Requirements (ODEQ)	• DEQ has violated federal and state procedural requirements for adopting new water quality standards. DEQ has not provided the public with the full analysis of its basis for proposed changes within the required time period. DEQ must re-issue the proposed changes in a manner consistent with federal and state requirements. (33, 34, 39) • DEQ should withdraw the proposed rule until DEQ has completed and made public for review, the technical analysis supporting the proposed changes. At that time, DEQ should resubmit a revised and documented version of the proposed rule for public review. (33, 34, 39)
Response	*DEQ fully endorses the EQC adoption of these rules. They are well conceived and will significantly enhance Oregon's water quality program.* *DEQ disagrees with the notion that the public was not provided with full analysis of the basis for the proposed standards changes. The bases for the numeric temperature criteria were well documented by DEQ in 1995, and the technical supporting documents were placed on the DEQ webpage (and remain available there). The basis and reasons for the temperature criteria were updated and again documented by EPA in its Regional Temperature Guidance and posted on the EPA website.* *Prior to initiating rulemaking, DEQ sponsored 11 workshops around the State to discuss the litigation, existing rule, the EPA Guidance and rulemaking options available to the State with Oregonians. Over the past 3 years, DEQ worked extensively with Policy and Technical Advisory Committees to develop drafts of these rules. These discussions included detailed descriptions of how the beneficial use maps and tables were compiled.* *DEQ stresses that the timeframe associated with this rulemaking was driven by a settlement agreement to litigation brought by one of these comment providers. DEQ staff, with support from the US EPA, U.S. Fish and Wildlife Service, NOAA Fisheries and the ODFW, have made tremendous efforts to revise these administrative rules and create accurate beneficial use maps. This rule is based on the best information currently available to DEQ. To the extent the rule could have been further improved with more time or supporting documentation, such an option was unfortunately foreclosed by the above-*

	mentioned litigation.

Dissolved Oxygen Comments 340-0041-0016	
Issue	**Comment(s)**
Comment 65 Spawning areas	• Identify Klamath, Malheur River, and Powder Basin Tables (Tables 180B, 201B, and 260B) as waters identified with spawning areas. (25) • DO spawning criteria narrative does not reference spawning dates as applicable time periods. Needs clarification. (45, 49) • Clarify that Figures and Tables are used for IGDO provision. 340-041-0016(1)(b). (34, 45, 49)
Response	*DEQ agrees. The tables have been converted to beneficial use maps and added to the cross reference in the rule.* *DEQ agrees that the dissolved oxygen and the IDGO rules should include a cross reference to the spawning beneficial use maps and tables and has revised the rule accordingly.*
Comment 66 Unnecessary text	340-041-0016 (1)(c) is unnecessary because the IGDO criterion has changed from 6.0 to 8.0 mg/l. (21, 23)
Response	*DEQ agrees and has deleted the provision from the rule.*

Temperature Mixing Zone Comments 340-041-0053(2)(d)	
Issue	**Comment**
Comment 67 Clarify definition and application of temperature mixing zones	• Additional detail regarding the designation of temperature mixing zones is needed. (24, 33, 35) Definition does not set a standard for mixing zones. (33) • Mixing zones don't clarify if they refer to point or nonpoint sources. Nonpoint sources should be referenced. (24) • ODEQ should specify that compliance may be based on modeling. (40)
Response	*Mixing zones are only available for point sources and are implemented through limits contained in NPDES permits. Generally, effluent limits are back-calculated so that they apply at the outfall (i.e., "end-of-pipe") rather than at the edge of the mixing zone. Compliance is determined by the quality of the effluent rather than by ambient quality of the water body.* *The details on how and when a mixing zone is used in an NPDES permit are set out in section OAR 340-041-0053 of this rule. DEQ also relies on permit*

	writer's guidance on establishing mixing zones to supplement the requirements of the rule. DEQ is adding new text addressing temperature considerations. These supplement the general provisions already set out in the existing rule. DEQ may consider adding detail to the mixing zone rule in the future as warranted.
Comment 68 Acute Impairment language needs clarification	Language is not technically correct or supported by scientific literature "which generally occurs… for more than 2 seconds" should be replaced with "can be experienced with exposures starting at…for more than 4 seconds". (40).
Response	*DEQ disagrees. The concern over more than a two second exposure was documented in the EPA Temperature Guidance and the technical papers supporting the guidance. The provisions have also been vetted by the U.S. Fish and Wildlife Service and NOAA Fisheries. No changes were made in response to this comment.*
Comment 69 Thermal Shock language needs clarification	Language is not workable; temperature values are not derived from specific scientific literature. (40)
Response	*DEQ disagrees. Thermal shock impacts are documented in the EPA Temperature guidance and the technical papers supporting the guidance. The provisions have also been vetted by the U.S. Fish and Wildlife Service and NOAA Fisheries. No changes were made in response to this comment.*
Comment 70 Migration Blockage	• Indicate that the 25% cross-section area will be used with the full (100%) 7Q10 flow allocation, consistent with the water quality standard calculations for other parameters in NPDES permits. (27, 29, 32) • Language should reflect that in some cases, there is more than adequate fish passage with a mixing zone that is greater than 25% of the cross-section of the receiving stream. Language should be included that these can be approved on a case by base basis where adequate fish passage can be demonstrated. (26)
Response	*DEQ agrees and has revised the final rule to indicate that the 25% cross section area will be based on 100% of the 7Q10 low flow condition.* *While DEQ agrees that there may be adequate fish passage in larger water bodies if more than 25% of the cross section of the water body was used for a mixing zone, we disagree that facilities should be given a larger mixing zone in these circumstances. Therefore, the final rule does not include the additional flexibility to designate temperature mixing zones using more than 25% of the stream flow.*

Comment 71 Temperature Mixing Zone Violates Clean Water Act	Mixing zone rule does not meet the minimum requirements of the Clean Water Act; violates Clean Water Act's Anti-degradation policy by allowing for degradation in water bodies that are not high quality. (34)
Response	*The federal NPDES program has long acknowledged the use of mixing zones. EPA rules acknowledge the use of mixing zones with water quality standards (see 40 CFR 131.13). In addition, EPA guidance discusses the use of mixing zones and water quality standards (see the EPA's "Water Quality Standards Handbook," Pages 5-1 through 5-9, Aug. 1994).* *DEQ does not believe that the use of mixing zones is contrary to the antidegradation concept and has clarified the antidegradation rule to that effect as well.*

General Where and When Comments (Fish Use Maps and Tables)	
Issue	**Comment(s)**
Comment 72 Canals and irrigation channels	If constructed waterways are designated as fish use waters, provisions should be put in place to protect the constructed waterways for the purposes for which they were constructed. (15)
Response	*The use designations apply to all waters of the State. Constructed waterways upstream of designated fish uses are assigned fish use designations in order to support and protect the downstream fish use.*
Comment 73 Clarify Mapping Assumptions	There is no indication of sources or rational behind production of maps. Explanation of how the fish uses were designated and mapped should be included in the final rule. (23, 24, 33, 34)
	Maps are not specific to a particular species. There should be separate "species maps" for distribution and habitat use. (24)
	Unclear if maps address only anadromous or also resident salmonids; unclear if maps represent actual or potential presence of species. (28)
	Maps should reference TMDL's that will supercede the temperature criteria on the map; refer to site specific criteria approved by the EPA, on maps. (26, 27, 28, 29, 32, 34, 50)
	ODEQ should outline a process for updating and revising the maps as better data become available. (27)
Response	*Refer to EQC Packet EQC Packet Attachment H for a complete description of methodologies used in the map-making process. The attachment describes information sources, the fish beneficial use designations, and the process DEQ used in constructing the maps.*

	DEQ believes that the fish beneficial use maps are a sufficient representation of the fish being protected in the basins; individual maps for each species are unnecessary. *The rule text (in the Basin-Specific Criteria sections where the fish use maps are referenced) includes a list of the approved TMDL's for each basin. Therefore, DEQ believes that adding these references to the maps is unnecessary.* *DEQ realizes that updates and revisions to these fish use maps will be necessary as better data become available. The fish use maps are incorporated into the Division 41 Rule. Updates to the maps are considered updates to the beneficial use designations. Therefore, when the maps are revised, the public will be notified of the proposed revisions and an opportunity to comment on the updates will be made available. In addition, these revisions would require approval from the EPA.*
Comment 74 Colder Water Salmon and Steelhead Habitat	Coastal basins are lacking sufficient colder water salmon and steelhead habitat (proposed 16°C); ODEQ should incorporate areas determined to be currently meeting the 16°C designation (based on monitoring data available to ODEQ) as additional streams with colder water fish use designation. (23, 24)
Response	*DEQ has added additional areas as core cold water habitat. Coastal basin waters, as well as streams in the Hood, Sandy Grande Ronde, and Deschutes Basins that are currently meeting the 16°C designation have been added, as well as areas determined to be "salmon anchor habitat" by Ecotrust. In addition, in order to meet the downstream temperature criterion of 18°C, there will necessarily be colder waters upstream.*
Comment 75 Cool Water Aquatic Life	"Cool water" fish communities would do well with upper temperature limits of approximately 24-26°C as a MWMT. (5)
	DEQ needs to use best available science in determining appropriate Redband criterion. Higher criterion is expected. (30)
	Redband and Lahontan cutthroat trout habitat should be 64°F unless scientific evidence can show that it is not biologically optimal. (36)
Response	*DEQ is not setting numeric criteria for cool water species at this time. The text of the rule provides a narrative to protect cool water species.* *Recent research shows that redband trout perform well at warmer temperatures than other salmonids. Refer to Attachment C2 for more detailed information regarding redband temperature criteria.*
Comment 76 Critical Period Use Designations	DEQ should protect for fish uses at all times, not just during "critical periods". Unclear if standards would be applied during non-critical periods. (39)
Response	*The temperature standards apply at all times, unless they are superceded by more stringent spawning criteria, or approved site-specific criteria. The "critical*

	period" is established to ensure that the standards are met during the warmest time periods of the year where the fish use is present. If the standards are met during the "critical period" months, then the temperatures during the remaining months of the year will be cool enough to support the beneficial fish use.
Comment 77 Default Spawning Dates	The default date decision is appropriate, but needs a process for variance based on sound evidence. (24)
	The default spawning dates are oversimplified and not reflective of fish uses. (39)
	Timing standards should take in the entire spawning bell curve, not truncate the beginning and end dates. This runs the risk of distorting the diversity of the spawning runs. (3)
	Methodology used to designate fish use is too conservative; early spawning dates are too conservative and are likely to yield meaningless 303(d) listings. (44)
Response	*Default dates have been adjusted to better reflect actual fish uses. Refer to EQC Packet EQC Packet Attachment H for the methodologies used to determine default spawning dates. DEQ believes that the revised spawning dates are more reflective of species variability.* *DEQ slightly truncated the beginning and ending spawning dates to better reflect the geographical range of the data and the use by particular species in the stream reach. Refer to EQC Packet EQC Packet Attachment H, Section IV, "Beneficial Use Designations for Salmon and Steelhead Through Emergence" for a detailed description of the methodology.*
Comment 78 Definitions are unclear	"Unassigned", when referring to streams in the maps legends, is unclear. (24)
Response	*DEQ agrees; For clarity, "unassigned" will be changed to "no salmonid use".*
Comment 79 Fish Distribution/Habitat Data	Maps don't illustrate fish-use designations accurately (22, 24, 39, 47)
	CRITFC has the most up to date fish distribution and use for the John Day basin. (24) (Note: CRITFC data not submitted during comment period)
	Maps indicate that criteria will be applied at times and locations that are unrealistic (based on modeling or current temperatures). (47)
	Fish-use maps should not reflect distribution data from species that are non-native to the basin. Non-native species should not be used to establish more stringent temperature criteria. (2)
	Maps don't take into consideration areas that are intermittent, or ephemeral. These streams should not be designated as fish habitat; include clarification in rule language. (22, 24)

Response	*Please refer to EQC Packet EQC Packet Attachment H for a complete description of the data used to generate the beneficial fish use maps. DEQ relied primarily on ODFW data to make the maps. DEQ feels strongly that the information sources used to make the maps is consistent, comprehensive and scientifically sound. Where additional data have been submitted during the comment period, DEQ will share with ODFW. Because of time constraints, DEQ was unable to analyze all of the additional data submitted and incorporate it into this set of maps. DEQ is committed to making the beneficial fish-use maps as accurate as possible, and will incorporate updated data into future revisions. (Refer to response to Comment 73 regarding updating the maps)* *The fish-use maps reflect species that are native to the basin; based upon ODFW data.* *Intermittent streams support beneficial fish uses when there is water flowing in the stream. These streams are addressed like any other Waters of the State, and are assigned temperature criteria based upon fish distribution and timing, as determined through the designation methodology. Refer to EQC Packet EQC Packet Attachment H for further information.*
Comment 80 Fish-Use Barriers/ Upstream waters	Maps should be proofed on the ground to verify natural barriers. (38); Streams with barriers that prohibit fish passage should not be assigned a critical period fish use designation or shown as spawning habitat. (15, 22, 24, 47, 48) Upstream or contributing waters should not be subject to downstream fish use designations. (24, 44)
Response	*Waters upstream of major dams that block fish use were not assigned as spawning habitat.* *Waters upstream of habitats the support fish uses have been assigned critical period fish use designations because they provide cold water to the areas where the fish use occurs.*
Comment 81 Fish Use Tables	Language "All other…waters" has unclear implications; does it imply waters with or without fish presence? (22)
	Table 101B for the Columbia River beneficial fish uses is unclear; map should be provided for Columbia River. (34)
Response	*The term "All other…waters" when used in the fish use tables refers to all of the waters of the specified subbasin that have not already been called out on the tables. It refers to all of the other streams in the basin that have not been specifically addressed by name or river mile. The term itself does not imply fish presence, but instead refers to the waters that the designated fish use applies.* *DEQ disagrees. Table 101B clearly shows the beneficial fish uses for segments of the Columbia River. Additionally, basin maps that include stretches of the Columbia River also include critical period temperature*

	designations. No changes were made in response to this comment.
Comment 82 Interior Basins	Maps for the Klamath, Malheur River, and Powder Basins should be made available by ODEQ. (25, 24)
Response	*DEQ agrees; the maps for these basins will be referenced in the final rule.*
Comment 83 Resident Trout Criteria	There should be separate criteria for trout spawning where there is no overlapping distribution with salmon and steelhead. (24)
Response	*DEQ feels that the temperature criterion established for salmon and steelhead will also be protective of resident trout.*
Site-Specific When and Where Comments	
General Comment	Location Specific Comment (comment provider) *Response*
Comment 84 Fish–use is blocked; streams should not be designated as fish-use	Deschutes Basin Mainstem Deschutes upstream of Pelton Dam: Fish passage impossible at dam; remove 16°C designation. (*15*) *Response: The temperature designation has been changed to 18°C; the data do not show bull trout migration during July or August.* Deschutes, Rogue, and Umatilla basins: Many named irrigation conveyances (many are screened) are designated. Should not be designated fish-use habitat. (*15*) *Response: The maps reflect ODFW distribution and timing data. Future updates of the ODFW data will be incorporated into the fish use maps. See also response to Comment 80. No changes were made in response to this comment at this time.* John Day Basin Granite Boulder Creek has a natural barrier. (24) *No changes were made in response to this comment.* Klamath Basin A canal (straight section between Klamath R and Lost R) (also called Lost R Diversion): canal is screened. (24) *Response: This reach is designated as cool water aquatic life, not for salmon and steelhead use.* *No changes were made in response to this comment.* Mid Coast Basin South Fork Coquille River, M Fork Coquille above Twelve Mile Creek, E Fork Coquille above Steel Cr: These reaches are above barriers to anadromous fish. DEQ should remove these reaches from the map or change designation to "Colder Water Salmon,

	Steelhead, *and Trout* Rearing Habitat". (*47*) *Response: Reaches are designated because they are upstream supporting waters. No changes were made in response to this comment.* <u>Rogue basin</u> Lost Creek Dam, Applegate Dam, Emigrant Lake Dam: Impassable to ocean-going fish. (*48*) *Response: Reaches above Lost Creek Dam have changed to 18°C. Others already 18°C, no change. This area is blocked to anadromous fish passage, but there are resident trout species upstream. The 18°C designation is because of trout fish use. See EQC Packet EQC Packet Attachment H for further information.* Rogue River (RM171 and RM 158.4), South Fork Big Butte Cr (RM14), South Fork Little Butte Creek (RM 32): No "salmon and steelhead rearing habitat" above these points because of barriers (one is a dam at Lost Creek Lake). Many other blockages that limit salmon and steelhead in upper reaches of Upper Rogue subbasin. (24) *Response: These reaches designated because they are upstream supporting waters.* Applegate Lake: Dam at lake does not provide for fish passage; above RM 46.3 there is no rearing habitat. (24) *Response: These reaches designated because they are upstream supporting waters.* <u>Umatilla Basin</u> McKay Creek has fish barrier. Lower section (below McKay Dam) has juvenile steelhead rearing. Upstream of reservoir, flow is ~0; no rearing habitat. Thus 16C designation should be removed from McKay Cr upstream of reservoir. (*15*) *Response: The 16°C designation above the reservoir has been changed to 18°C; the fish distribution data do not show anadromous fish or bull trout above the dam.* <u>Umpqua Basin</u> West Fork Smith River barrier removed; Otter Creek has impassible barrier. (22) *Response: ODFW data do not support these comments.* <u>Willamette Basin</u> Above Blue River Dam: Change designation from 16°C to 18°C because of lack of Spring Chinook historical upstream of falls; now submerged in reservoir. (24) *Response: These reaches designated because they are upstream supporting waters.* ***Response:*** *DEQ checked the above streams for distribution errors or delineation errors in the beneficial fish-use delineation process (refer to EQC Packet EQC Packet Attachment H for a detailed description of this methodology). Current ODFW fish distribution data or DEQ and FWS bull trout*

	distribution data do not support these use changes. Additionally, waters upstream of fish-use habitats were designated as they provide cold water to support the downstream beneficial use. *Unless specifically noted below the individual comment, no changes were made at this time in response to these comments.*
Comment 85 Bull Trout Fish-Use/distribution information on maps is inaccurate	<u>Deschutes Basin</u> Upper Deschutes Basin: All bull trout spawning and rearing designations (except Odell Lake and its tributaries) should be removed from this basin. (15) *DEQ and US FWS data do not support these changes. No changes were made in response to this comment.* Whitefish Creek: ODFW says bull trout not historically present, USFWS says proposed critical habitat. Lower section of stream goes dry each fall; there is a fish barrier at Mountain Creek. (24) *Response: DEQ potential bull trout spawning habitat distribution covers all of Whitefish Creek from headwaters to Crescent Lake; Mountain Creek designated because it is upstream supporting water. No changes have been made in response to this comment.* Upper Little Deschutes River and tributaries, including Hemlock Creek: DEQ temperature data should show Hemlock Creek and Little Deschutes too warm to support bull trout. (24) *Response: ODFW fish use timing data is unavailable for these reaches to provide 16°C, and DEQ's timing do not show use in the critical period. DEQ potential bull trout spawning habitat distribution covers Hemlock Creek and DEQ existing bull trout spawning habitat distribution covers the upper Little Deschutes. No changes have been made in response to this comment.* Fly Creek (flows into Lake Billy Chinook): Only fish species currently in this stream is redband trout. (24) *Response: This designation has been changed to 18°C because DEQ and US FWS bull trout distribution data do not include Fly Creek.* Long Creek to Long Lake: Why is this in table 180B at all? It has brook trout; should not be included as potential bull trout stream. (24) *Response: This was changed to reflect redband and Lahontan cutthroat trout species.* Tumalo Creek, Squaw Creek, and Big Marsh Creek: Neither ODFW nor USFWS show bull trout historical presence or critical habitat for these creeks. Falls and fish barriers exist on Tumalo and Squaw; no 16°C water for migration, foraging, and connectivity. DEQ temperature data should show Big Marsh Cr too warm to support bull trout. (24) *Response: Tumalo Creek designated because it is upstream supporting water. Squaw Creek bull trout designation removed. Big Marsh Creek is shown to be potential bull trout spawning habitat by the DEQ technical workgroup.* Fall River from mouth to source: Ephemeral tributaries shown with bull trout.

	Should be removed from bull trout habitat designation. (24) *Response: These reaches designated because they are upstream supporting waters* Deschutes: Unconnected streams should not be designated 12°C for bull trout. (24) *Response: DEQ agrees; these unconnected streams have been designated "waters with no salmonid use".* <u>Grande Ronde Basin</u> Rock Creek, Weller Creek, Slicker Creek, Fairview Creek: Should not be designated as bull trout habitat. (24) Response: *DEQ bull trout data show that these streams are either bull trout habitat or waters supporting bull trout habitat. No changes were made in response to these comments.* Jubilee Lake: There are no bull trout present above Jubilee Lake. *Response: the streams above Jubilee lake are designated as bull trout habitat because they are supporting waters.* Crooked Creek (Wenaha Basin), Five Points Creek (middle Grande Ronde), portion of Sheep Creek (upper Grande Ronde), Grande Ronde between two 12C sections upstream of Sheep Creek, small section of Bear Cr in Wallowa R: Citing Proposed Bull Trout Critical Habitat data (USFWS), these areas are omitted. They should be changed to reflect bull trout spawning and rearing. (25) *Response: These areas and their supporting upstream waters (within Oregon) were incorporated to reflect areas designated as bull trout spawning and rearing habitat by US FWS.* <u>Hood Basin</u> Elliot Branch (Hood Basin): Elliot Branch flows into Middle Fork Hood R (w/diversion ditch at RM .25), not E Fork Hood R. Should be designated bull trout spawning and rearing habitat. (25) *Response: Reach changed to bull trout spawning and rearing habitat.* <u>John Day Basin</u>: Indian Creek (South Fork John Day): No longer considered as [bull trout] spawning and rearing habitat. (25) *Response: The Indian Creek that flows into the South Fork John Day is not designated as bull trout spawning and rearing habitat. The Indian Creek that flows into the John Day River [just above Pine Creek] is designated as bull trout spawning and rearing habitat by US FWS.* Canyon Creek: Isolated sightings of bull trout should not be used to designate as bull trout habitat. (24) *Response: US FWS bull trout distribution includes Canyon Creek, East Fork and Middle Fork Canyon Creek as bull trout spawning and rearing (SR) critical*

	habitat. No changes have been made in response to this comment. North Fork John Day-Big Creek and Winom Creek: Not occupied bull trout habitat. (24) *Response: These reaches designated because they are upstream supporting waters.* Hidaway Creek: Is this occupied or historic bull trout habitat? (24) *Response: Hidaway Creek designated because of DEQ potential spawning habitat.* Pete Mann ditch (in headwaters of North Fork John Day River): Mapped as bull trout habitat, "ditch conveys water, [does] not provide habitat". (24) *Response: These reaches designated because they are upstream supporting waters.* North Fork John Day: lower section of Big Creek, Granite Creek to mouth, & Desolation Creek; Middle Fork John Day: lower section of Big Creek, Granite Creek to mouth, and Clear Creek to mouth): Should be designated bull trout spawning and rearing. (25) *Response: These reaches are now designated bull trout spawning and rearing habitat.* Squaw Creek, Fly Creek, Crawford Creek, Idaho Creek, Summit Creek (tributaries to Upper Middle Fork John Day): These waters do not have the current habitat to support bull trout nor have the potential to support bull trout. (24) *Response: These tributaries designated because they are upstream supporting waters.* <u>Willamette Basin</u> Smith River, lower 5 miles (tributary of Upper McKenzie): This should not be designated as bull trout habitat. (13) *Response: DEQ data shows this segment designated as potential bull trout spawning habitat.* Middle Fork Willamette River upstream of Lookout Point Reservoir: Bull trout habitat. (24) *Response: DEQ and US FWS bull trout habitat distributions do not extend below Hills Creek Lake. No changes were made in response to this comment.* Upper Middle Fork Willamette River above Hills Creek Dam: Bull trout transplanted there; migrated to Salmon Creek Falls, Salt Creek Falls, North Fork of Middle Fork to falls below Waldo Lake; all are now open to bull trout for spawning and rearing. (24) *Response: Except for a small segment of Salmon Creek below Wall Creek, DEQ and US FWS bull trout habitat distributions indicate spawning habitat in these streams. No changes were necessary in response to this comment.*

	Waters above Tamolitch Falls: Intermittent flow upstream of falls; thus not spawning and rearing habitat for bull trout (should be designated as resident habitat). (24) *Response: These reaches designated because they are upstream supporting waters.* South-flowing drainages between Frissell and Mill Creek: Not bull trout habitat. (24) *Response: These reaches designated because they are upstream supporting waters.* ***Response**: DEQ checked these streams for distribution errors or delineation errors in the beneficial fish-use delineation process (refer to EQC Packet EQC Packet Attachment H for a detailed description of this methodology). No errors in the delineation process were found, and DEQ Bull Trout report and USFWS bull trout distribution data do not support these use changes. Additionally, waters upstream of bull trout fish-use habitats were designated as they provide cold water to support the downstream beneficial use.* *Unless specifically noted below the individual comment, no changes were made at this time in response to these comments.*
Comment 86 Fish-Uses/Distribution information on maps are inaccurate; better data are available	<u>Grande Ronde Basin</u> Jarboe Creek and other Grande Ronde streams: Should be designated as Redband habitat. (24) *Response: The waters are designated based on the most sensitive beneficial use. Although there are Redband trout present in the Grande Ronde basin, there are more stringent beneficial fish uses applying to the waters of the basin.* Lower Wenaha River from Crooked Creek to Troy: Salmon and steelhead migration habitat; winter rearing only; should not be designated spawning habitat. (24) *Response: ODFW distribution data shows this reach to be designated as summer steelhead spawning habitat. The spawning dates have changed to January 1- June 15.* Dry Gulch, Burnt Canyon, Cross Canyon Creek, Jassaud Creek, Elk Creek and others: Not salmon and steelhead habitat or bull trout habitat. (24) *Response: These streams are upstream of DEQ and US FWS designated bull trout spawning habitat. They are assigned the 12°C criterion because they support the downstream fish use.* Mainstem Snake R: Sub-divide from Hells Canyon Dam (RM 247.5) u/s to Oregon/Idaho state line (RM 409) into three segments (at RM 285, RM 335, and state line). Salmon use in these reaches is different (cites TMDL). (*19*) *Response: Based on the proposed Snake River/Hells Canyon TMDL, the temperature target for salmonid spawning is only applicable on the Downstream Snake River segment (RM 247 to 188). In addition, we did not*

	find any support for a cool water species fish use designation above the Hells Canyon Dam in the SR-HC TMDL document. Therefore, we did not sub-divide the segment as suggested. However, the spawning dates that apply to the downstream segments have been adjusted to reflect the findings of the SR-HC TMDL. <u>John Day Basin</u> Why are there no redband habitat designated waters in John Day basin? (24) *Response: The waters are designated based on the most sensitive beneficial use. Although there are Redband trout present in the John Day basin, there are more stringent beneficial fish uses applying to the waters of the basin.* Cascade streams that flow toward upper Klamath Lake: Lowest reaches are irrigation ditches. May be restored in the future but currently do not provide habitat. (24) *Response: Fort Creek Ditch is the only reach designated as bull trout habitat; based on US FWS data.* Lost River, Klamath River to Keno Dam Redband trout are in the Lost River, thus should not be designated cool water species (no salmonid use). (24) *Response: Reach is currently designated as "cool water species" and does not refer to salmonid use.* Two tributaries to Rock Creek; Dry Creek (tributary to Sevenmile Creek): These flow only during runoff. In table, streams listed "to headwaters and tributaries" should be changed to "perennial tributaries" because Klamath Basin has a lot of intermittent/ephemeral streams. (24) *Response: These reaches designated because they are upstream supporting waters.* <u>Rogue Basin</u> Lost Creek Lake: Streams down from this are inherently warm, cannot meet standard. (24) *Response: These streams designated because of ODFW fish distribution and timing data.* Lost Creek Dam (Rogue Basin): There are no anadromous salmonids including Chinook salmon, or bull trout, upstream of the dam. Thus change 16C waters in Upper Rogue subbasin to 18C. (*49*) *Response: Reaches upstream of the Lost Creek dam have been changed to 18°C.* <u>South Coast Basin</u> Steel Creek: There are no salmon above Brewster Gorge, which is approximately 1 mile upstream of Steel Creek. (22) *Response: These reaches are steelhead-only spawning and have new designation of January 1-June 15*

	Umatilla Basin Willow Creek to Heppner: Occupied steelhead habitat. (24) *Response: ODFW distribution database does not show steelhead distribution here. Timing units also state this is a non-anadromous timing unit.* Umpqua Basin Soda Springs Dam: There are no anadromous salmonids including Chinook salmon, or bull trout, upstream of the dam. Thus change 16°C waters in North Umpqua subbasin to 18°C. Note: PacifiCorp has agreed to provide fish passage at Soda Springs Dam; this will allow Chinook access to a few more miles of North Umpqua River (to Slide Creek Dam) and Fish Creek up to a natural cascade. Then could reduce temp to 16°C. *(49)* *Response: Reaches above dam have been changed to 18°C, and show "no salmonid use" on spawning map.* Willamette Basin Lower Rickreall Creek (Willamette Basin): Cool water aquatic life beneficial use category applies (not 18°C). (*9*) *Response: This reach (from river mile 10 to mouth) has been changed to 18°C and shows "no salmonid use" on spawning map.* Multiple Basins Malheur, Klamath, Powder Basins: Do not include designated uses for colder water salmon and steelhead rearing (16°C) or salmon and steelhead rearing (18°C). 12°C water flows directly into 20°C water with no added stipulation for cold water refugia. Bull trout need 16°C areas in these basins. (*25*) *Response: Added areas of 16°C in the Upper Klamath Lake subbasin, Upper Malheur River subbasin.* Fish distribution data for multiple areas of the State available from BLM (provided on CD). (22) *Response: Unable to analyze data because of time constraints.* Siuslaw, Siltcoos, Coos, Sixes, Chetco, Necanicum, Rogue: Basins with little or no 16°C waters with distinct populations of Coho. (*23*) *Response: Coastal subbasins with minimal 16°C waters now include Ecotrust salmon anchor habitat data, as well as reaches that currently meet 16°C based upon DEQ temperature data. Refer to EQC Packet EQC Packet Attachment H for further details.* Illinois River (Lower Sucker Creek), Umpqua (little R), Nestucca R, Tillamook, N Coast, Grande Ronde: GIS layer: temperature data show reaches where designation should be changed. (*23*) *Response: These reaches have all been changed to 16°C.* Lower Mainstem John Day River, S Fork John Day River, Lower Grande Ronde R (Joseph Creek); Sandy River, Hood River, Lower Grande Ronde (Snake River): Reaches of no or little 16°C waters that have distinct

	populations of steelhead. (23) *Response: At this time, no changes have been made to incorporate 16°C reaches based solely on steelhead populations.*
Comment 87 Timing data are incorrect; should be changed.	<u>Grande Ronde Basin</u> From Hells Canyon Dam to Salmon River (RM 247.5-RM 169): Spawning dates on map are Oct 15-May 1; change to Oct 23-May 10 (according to Snake R/Hells Canyon TMDL). (41) *Response: The spawning dates for this segment have been changed to October 23-May 15 based on the development of the Snake River/Hells Canyon TMDL.* Brownlee Dam to inflow at Brownlee Reservoir (Table 120B): Redband trout over-wintering time should be Sept 22-May 30. (19) *Response: DEQ is not establishing Redband over-wintering at this time. This change is not reflected on Table 120B.* <u>John Day Basin</u> John Day River below Cottonwood Bridge (RM 39.5): Remnant fall Chinook run; change spawning dates to Oct 1-April 1. (24) *Response: ODFW distribution shows no fall Chinook spawning; Steelhead only, thus spawning range changed to January 1-May 15.* South Fork John Day River (above Dayville): Change to "orange" color on map; orange color dates should change from Oct 15-June 15 to April 1-June 15. (24) *Response: Spawning dates changed to January 1-May 15 because of spawning by steelhead only* Other John Day streams, referring to Figure 170B: "Light blue" dates (Sept 1-June 15) should change to Sept 1-July 15; "Yellow" streams (Oct 15-May 15) have steelhead eggs/fry in gravel from March 1-June 15, so timing should reflect that. (24) *Response: Oct 15-May 15 dates have been changed to January 1-May 15 because of spawning by steelhead only.* <u>Mid Coast Basin</u> Upper Alsea River, Upper Drift Creek, and Upper Nestucca Basin: Should not be designated 16°C. Fish biologists (unnamed) do not think spring Chinook spawning occurs before Sept 15. (24) *Response: ODFW timing table for Alsea timing unit shows spring Chinook spawning begins September 1. No changes were made in response to this comment.* <u>South Coast Basin</u> Steel Creek, Salmon Creek: Why do these streams have more than one spawning date range (22) *Response: The multiple date ranges reflect established spawning default dates; the ranges depend on which species are overlapping in what*

	temperature water. Big Creek (18°C summer max) has Coho, fall Chinook and winter steelhead but NOT spring Chinook. Steel and Salmon creeks have 16°C summer max because of spring Chinook, and therefore was assigned a wider variety of default dates. Refer to EQC Packet EQC Packet Attachment H for a detailed description of the methodology used to create the maps. Middle, East and South Forks Coquille River: Spawning events are anecdotal events, and are not believed to represent a true, historic run. Likely are stray Chinook from Umpqua or Rogue basins. (*47*) *Response: ODFW's timing table for the Coquille River and tributaries shows spring Chinook spawning beginning September 1, peak use beginning September 15. No changes were made in response to this comment.*
Comment 88 Temperature and Stream Flow were not considered when designating fish uses	<u>Deschutes Basin</u> Moore Creek: Lower section is intermittent; only non-native brook trout present in headwaters. Should be designated 18°C. (24) *Response: Moore Creek has been changed to 18°C; not shown on DEQ and FWS distributions.* <u>Grande Ronde Basin</u> Below Hells Canyon Dam: Fall Chinook spawning is fully supported at temps higher than those proposed in rule. (41) *Response: The spawning dates for this segment have been changed based on the development of the Snake River/Hells Canyon TMDL.* Inflow to Brownlee Reservoir to Oregon/Idaho State line (Table 120B): New column "Cool Water Species (no salmonid use)" should be added and have an "x" in it. (19) *Response: ODFW distribution data do not reflect the changes proposed in this comment. No changes were made at this time in response to this comment.* Grande Ronde: Gordon Creek, Howard Creek above confluence with Wise Creek, Wise Creek, Squaw Creek (tributary to Minam River): All are largely dry throughout summer therefore 12°C is nonsensical. (48) *Response: These streams are not designated as bull trout spawning habitat (12°C). No changes were necessary in response to this comment.* <u>Klamath Basin</u> Klamath Basin streams: Detailed table provided, compares Technical Working Group, Proposed Temperature Rule Table 180B, and US FWS Proposed Critical Habitat. (24) *Response: DEQ used US FWS spawning and rearing critical habitat data, along with DEQ existing and potential spawning habitat data to designate bull trout habitat. At this time, we are not incorporating areas as bull trout habitat that do not fall under these designations or are not waters supporting these downstream designations. Refer to EQC Packet EQC Packet Attachment H for further detail. No changes were made in response to this comment.* <u>Mid Coast Basin</u> South Fork Siletz River (Siletz River upstream of Jaybird Creek) (*48*) Upstream of dam is limited shade and impossible to meet 16°C

	Response: Critical period designations were made based on ODFW fish use distribution and timing data. Refer to EQC Packet Attachment H for further detail. No changes were made in response to this comment.

DEQ WQ Standards Revision Official Public Comment Contacts					
Source #	**Contact Name**	**Organization**	**Address**	**Phone Fax email**	**Date & Format**
1	Charles J. Hurliman	Tillamook County	201 Laurel Avenue, Tillamook, OR 97141	503- 842-3403	9/8/2003 letter
2	Leo Grand Montaine	self	46760 Hwy 242, Myrtle Point, OR 97458		9/15/2003 Public hearing
3	Glen Spain	Institute of Fisheries Resources; Pacific Coast Federation of Fishermen's Association.			9/17/2003 Public hearing and letter
4	Hector Macpherson	self	29626 Church Drive, Albany, OR 97321		9/18/2003 letter
5	Chris Mebane	self	2257 Elderberry Place Boise, ID 82706	mebane@ rmci.net	9/23/2003 email
6	Ray Kopacz	Stanfield Irrigation District	100 W Coe, P.O. Box 416 Stanfield OR 97875		9/29/2003 fax
7	Tim Unterwegner	ODFW- John Day District		tjunterwegner@ centurytel.net	9/29/2003 email
8	Liz VanLeeuwen	Linn SWCD	Linn Soil and Water Conservation District, 33630 McFarland Rd. Tangent, OR 97389	541- 967-5927	9/29/2003 letter
9	Roger Jordan	City of Dallas, OR	Roger Jordan, City Manager, City of Dallas, P.O. Box 67 Dallas, OR 97338		9/29/2003 email letter
10	Mac Kerns	self		vicki-wares@ or.nacdnet.org (for Mac Kerns)	9/29/2003 email
11	Robert L. Braun	Heinz Frozen Food company	P.O. Box 10 Ontario, OR 97914-0010	541- 889-0354	9/30/2003 fax
12	Pat Larson	Oregon Cattlemen's Association	61931 Cottonwood Rd. La Grande, OR 97850	thermochick@ oregontrail.net	9/30/2003 email
13	Mike McCann	Eugene Water and Electric Board	500 East 4th Avenue, Eugene, OR 97440-2148	541- 484-2411	10/1/2003 fax

14	Elizabeth Lawrence	City of Pendleton Wastewater Treatment Plant	500 SW Dorion Ave. Pendleton, OR 97801	541- 276-3372	10/3/2003 letter fax
15	J. William McDonald	US Dept. of the Interior, Bureau of Reclamation, Pacific Northwest Region	1150 North Curtis Road, Suite 100 Boise, ID 83706	541- 276-3372	10/1/2003 letter
16	Brad Harper	Water for Life, Inc.	P.O. Box 12248 Salem, Oregon 97309	503-375-6003 ph 503-375-9017 fax info@waterforlife.net	10/1/2003 letter
17	Katie Fast	Oregon Farm Bureau	3415 Commercial Street S.E. Suite 117, Salem OR 97302	503-399-1701 ph 503-399-8082 fax	10/2/2003 letter
18	Peter Ruffier	City of Eugene, Public Works		Peter.J.RUFFIER@ ci.eugene.or.us	10/3/2003
19	Norman M. Semanko	Idaho Water Users Association		iwua@iwua.org	10/3/2003 email
20	David Ponganis	ACOE, Army Corps of Engineers, Pacific Northwest Region			10/3/2003 fax
21	Mary Lou Soscia	EPA, Environmental Protection Agency, Region 10		socia.marylou@ epamail.epa.gov	10/3/2003 letter
22	Rosy Mazaika	BLM, Bureau of Land Management		rmazaika@ or.blm.gov	10/3/2003 letter
23	Jeff Lockwood	NOAA Fisheries		jeffrey.lockwood@ noaa.gov	10/3/2003 letter fax
24	Trish Carroll	USFS, Pacific Northwest Region		tcarroll@fs.fed.us	10/3/2003 letter
25	Elizabeth Materna	FWS, US Fish and Wildlife Service		Elizabeth_Materna @ fws.gov	10/3/2003 fax
26	Frank Tiwari	City of Woodburn, Public Works	2815 Molalla Road Woodburn, OR 97071	503-982-5284 ph 503-982-5285 fax	10/3/2003 letter
27	Janet Gillaspie	ACWA, Oregon Association of Clean Water Agencies	537 SE Ash St., Suite 12 Portland OR 97214	503-236-6722	10/3/2003 fax

28	Frank Wildensee	BES, City of Portland Bureau of Environmental Services	1120 SW Fifth Ave, R00m 1000 Portland, OR 97204	503-823-2926	10/3/2003 letter
29	Paula Brown	City of Ashland	20 E. Main Street Ashland, OR 97520	541-552-2411	10/3/2003 fax
30	Robbin Finch	Boise Public Works		Dkalim@ cityofboise.org	10/2/2003 email
31	Anita Winkler	OWRC, Oregon Water Resources Congress			10/3/2003 fax
32	James Hill	City of Medford		Norma.Fascilla@ ci.medford.or.us 541-774-2100	10/3/2003 email
33	Patti Howard	CRITFC, Columbia River Inter-Tribal Fish Commission	729 NE Oregon, Suite 200 Portland OR 97232	HOWP@critfc.org	10/3/2003 letter
34	Nina Bell	NWEA, Northwest Environmental Advocates	P.O. Box 12187, Portland, OR 97212	503-295-0490	10/3/2003 letter
35	Kathleen Feehan	Confederated Tribes of the Umatilla Indian Reservation	P.O. Box 638, Pendleton, OR 97801	541-276-3447	10/3/2003 fax
36	Doug Heiken	ONRC, Oregon Natural Resources Council		Doug Heiken onrcdoug@efn.org	10/2/2003 email
37	George Ice	NCASI, National Council for Air and Stream Improvement, Inc.	P.O. Box 458, Corvallis OR 97339	gice@wcrc-ncasi.org 541-752-8801	10/3/2003 letter
38	Sherri Groh	Confederated Tribes of Siletz Indians	P.O. Box 549, Siletz OR 97380	541-444-2532	10/3/2003 fax

39	Brent Foster	Willamette Riverkeeper (also on behalf of Columbia Riverkeeper, NW Environmental Defense Center, Oregon Sierra Club, and OSPRIG)	380 SE Spokane ST., Suite 305, Portland, OR 97202	brentfoster@ ecoisp.com 503-223-6418	10/3/2003 email
40	Llewellyn Mathews	NWPPA, Northwest Pulp and Paper Association		sherill@ nwpulpandpaper.org	10/3/2003 email letter
41	James Tucker	Idaho Power		DParkes@ idahopower.com	10/3/2003 letter
42	Russell Rhodes	Ochoco Irrigation District		ochocoid@ crestviewcable.com	10/3/2003 email
43	Kent Smith	Self		insightconsultants@ centurytel.net	10/3/2003 email
44	Chris Jarmer	OFIC, Oregon Forest Industries Council		Chris Jarmer Chris@OFIC.com	10/3/2003 letter
45	John Ledger	AOI, Associated Oregon Industries		ledger@aoi.org	10/3/2003 letter email
46	Marvin Lewallen	Weyerhaeuser			10/3/2003 letter
47	Jeff Light	Plum Creek Timber Co.		Jeff.Light@ plumcreek.com	10/3/2003 email
48	Jeff Barry	Boise Cascade Corp.		JeffBarry@BC.com	10/3/2003 letter
49	John P. Sample	PacifiCorp		Carole.Meyer@Pacifi corp.com	10/3/2003 letter

Attachment C1
A Summary of DEQ's Water Quality Standards Policy Advisory Committee Discussions on the Temperature Standard

The Policy Advisory Committee Purpose and Membership

The Department of Environmental Quality (DEQ) convened a Policy Advisory Committee (PAC) in December 1999 to assist with review of water quality standards over the following three years. The three years turned to four and we very much appreciate the time and effort PAC members gave to participate in this forum, which requires listening to and discussing important issues with others who have a very different perspective, and which often does not produce the results each individual member would prefer. We particularly appreciate the efforts of the two chairpersons. Pat Amedeo chaired the committee from 1999 to 2002 and Bill Blosser chaired the committee in 2003. They were both adaptable and responsive to the changing needs and time lines of the Department and they both helped the Department try to make the meetings informative and productive.

The purpose of the PAC was to advise the Department on policy considerations for its rulemaking proposals related to water quality standards. The PAC membership, shown in Table 1 below, represents a broad range of interests in Oregon's water quality and regulations and as such, provided the Department with valuable and diverse perspectives on the policy issues and concerns associated with developing water quality standards for temperature and the other parameters under review during this period (toxics, turbidity and bio- criteria).

To assist the PAC in its deliberations, the Department provided the Committee with technical background information developed by the EPA Temperature Project Technical Workgroup (on which DEQ participated), the DEQ Temperature Technical Advisory Committee and DEQ staff. The PAC was asked to provide input and recommendations, if possible, with respect to: 1) desired level of protection or acceptable level of risk to the beneficial uses, 2) social and economic impacts, and 3) other policy issues related to options and/or proposals. The temperature standard is controversial and affects many social, environmental and economic interests in the state. As a result, the PAC was not able to reach consensus on recommendations to the Department. However, the PAC did raise concerns and provide early feedback on temperature policy issues, which was helpful to the Department.

The PAC had ample time to discuss the development of the EPA guidance on temperature, but discussion of DEQ's rule development was limited due to the short time DEQ had to do our rulemaking after the guidance was completed. DEQ was to have one year from completion of the guidance to revise the Oregon rule, but due to a court decision, our schedule was shortened to 8 months. Also due to the court decision, DEQ had to complete significant additional beneficial use designation work within the same time period and at the same time lost one of the three standards staff due to state budget

cuts. Therefore, we simply had limited time and staff resource to dedicate to working with the PAC during this last year. Fortunately, the issues discussed during development of the guidance were very much the same issues that pertain to the DEQ rulemaking.

Five agency advisors participated on the PAC as shown in the table below. They represented federal and state agencies with expertise in fish, human health, the Clean Water Act or the Endangered Species Act. Because of their role in approving State standards, DEQ felt it was extremely important that the EPA, NOAA Fisheries and US Fish & Wildlife Service participate on this committee as ex-officio members throughout the triennial review.

Table 1. Water Quality Standards Policy Advisory Committee Membership

PAC MEMBER	*ORGANIZATION*
Bill Blosser	Committee Chair (2003)
Pat Amedeo	Committee Chair (1999 through 2002)
Nina Bell	Northwest Environmental Advocates
Sharon Beck	Oregon Cattlemen's Association
Sherri Groh	Confederated Tribes of the Siletz (CTSI)
Chris Jarmer	Oregon Forest Industries Council
John Ledger	Associated Oregon Industries
Karen Lewotsky	Oregon Environmental Council
Charles Logue	Clean Water Services
Peter Ruffier	League of Oregon Cities
Aubrey Russell	Oregon Trout
Glen Spain	Pacific Coast Fed. Of Fishermen's Association
Kathryn VanNatta	NW Pulp & Paper Association
Jean Wilkinson	Oregon Farm Bureau

ALTERNATES	*PAC MEMBER*
Marvin Lewallen	Kathryn Van Natta
Jim McCauley	Chris Jarmer
Carol Whitaker	John Ledger

ADVISOR	*AGENCY*
Robert Anderson	National Marine Fisheries Service
Dru Keenan	US Environmental Protection Agency,10
Rick Kepler	Oregon Dept. of Fish & Wildlife
David Leland	Oregon Health Services
Elizabeth Materna	US Fish & Wildlife Service

PAC Quorum & Process for Making Recommendations to DEQ and the EQC

The PAC was comprised of 12 voting members, a voting Chair, and 5 non-voting agency advisors. Early in the process there was a quorum of members needed to hold a meeting. Later this was changed so that no quorum was needed to hold a meeting, but a quorum of 6 voting members was maintained for the purpose of voting on recommendations. The committee also identified how many votes would be needed to pass a proposal as a PAC recommendation, which was higher than a simple majority to encourage the group to work toward consensus and to enhance the value of a PAC recommendation. In practice, however, the PAC did not vote on recommendations related to the temperature standard, preferring to provide the perspectives of their individual organizations to the Department. All PAC meetings were open to the public for observation. The committee typically made time on the agenda to allow public comment if someone was present who wanted to speak. Further information on the PAC role, process and rules for participation are available upon request.

EPA Guidance Development

Staff updated the PAC regularly on the work of EPA's technical and policy workgroups and the development of the EPA Region 10 Temperature Criteria Guidance. When technical summary papers were completed they were presented. Two drafts of the EPA guidance were made available for public review (in 2001 and 2002). These documents were presented to the PAC and discussed with EPA staff that attended those meetings as well as with DEQ staff. Scientific peer review comments on the technical papers and the draft guidance documents were also available to the PAC and the general public.

Court Decision

Northwest Environmental Advocates (NWEA) challenged EPA and NOAA Fisheries on their approval of the Oregon's 1996 standards, including temperature. The Federal Court decision was issued by Judge Hagerty in March of 2003. This was discussed at the following PAC meeting, in April. The implications of the decision as understood by staff were discussed as well as how the decision affected our work and timeline. DEQ informed the PAC that it would try to revise the State standards to comply with the judge's opinion in a timeframe that would allow EPA and the Services to approve the State rules. Otherwise, EPA is required to promulgate a federal rule for the State. Most PAC members favored DEQ moving forward to revise the Oregon standards.

Policy Objectives for Oregon's Temperature Standard

The PAC generally agreed that the objectives of Oregon's temperature criteria are to:

1) **Protect fish and aquatic life,** and support the survival and recovery of listed salmonid populations;
2) Recognize the natural thermal patterns and potential of Oregon streams;
3) Provide an allowance for human presence & activity on the landscape;
4) **Be scientifically defensible; and**

5) **Be efficiently administered and implemented** by the State through CWA regulatory programs and voluntary water quality management programs.

There was consensus agreement on the three bolded objectives above (numbers 1, 4 and 5). Many, but not all PAC members also agreed with objectives 2 and 3.

Policy issues and possible "sub-objectives" relating to the above objectives were discussed with the PAC at a conceptual level prior to writing rule language. The PAC provided input on these issues and questions posed to them by the Department during the meetings and via email between meetings. Many of these also have a technical component to them and some of them may be primarily technical in nature. The input was helpful, but opinions varied and the PAC did not take votes or make recommendations as a group. Information on the comments of PAC members is available in meeting summaries available on the DEQ standards web site or from DEQ staff. At the preference of the PAC, the meeting summaries do not attribute comments to individual members.

1) Protect fish and aquatic life, and support the survival and recovery of listed salmonid populations.

Sub-objectives for discussion:

1. Determine and include in the standard, numeric water temperature criteria that prevent or minimize the risk of adverse effects to fish, considering chronic and acute, lethal and sub-lethal effects (the "optimal" range).
2. Protect natural thermal regimes by limiting human alteration of natural thermal regimes. Limit the allowable increase in temperature due to human activity.
3. Protect existing coldwater habitats and refugia.
4. Prevent further warming of degraded streams.
5. Take "all feasible steps" to restore degraded habitats.
6. Prevent cumulative impacts.

2) Recognize the natural thermal patterns and potential of Oregon streams

Sub-objectives:

1. Include in the criteria an efficient way to deal with temporal variability.
2. Include in the criteria an efficient way to deal with spatial variability. Some reaches naturally get warm and some have the potential to stay colder than the criteria.
3. Protect salmonid populations within their subbasin, recognizing that thermal conditions will not be optimal at all time and all places. Even under natural thermal regimes, there is some risk to some individuals at some times. Not all habitats are suitable for all species and life stages year round.

3) Provide an allowance for human presence & activity on the landscape

Sub-objectives:

1. The goal of the water quality standard is not to require restoration to pre-settlement natural conditions across the landscape.
2. Include a "de minimus" allowance for human use, even where stream temperatures exceed "optimal" thresholds.
3. Allow mixing zones for point sources. Apply additional criteria inside the mixing zone to prevent acute or localized impacts.
4. Determine how the State should deal with "irreversible" anthropogenic impacts that exceed the de minimus allowance.

5) State can administer and implement the criteria through the CWA regulatory programs

Sub-objectives:

1. Limit the number of species/life stage categories to a manageable number and to those needed to protect the natural thermal regime. Evaluate the incremental environmental benefit for each additional category compared with the additional resource to implement it. For example:
    a. separate bull trout criteria for spawning, juvenile rearing, and sub-adult/adult life history stages,
    b. 2 categories for salmonid rearing: 'core rearing' and 'rearing and migration,'
    c. a separate criterion for smoltification,
    d. one criterion for Lahontan cutthroat and redband trout rearing/adult presence, and/or
    e. a separate salmonid spawning criterion.

    For each category the State must specify the criterion and determine where and when the use occurs (i.e. when and where the criterion applies).
2. Determine under what circumstances expensive, data-intensive mechanistic modeling is really necessary and under what circumstances DEQ could rely on existing data, professional judgment, and/or extrapolation to adjust temperature or TMDL targets for a watershed/stream.
3. Determine how to target thermal restoration to areas or actions that will be most likely to increase or protect fish populations.
4. Write the standard in a way that allows for flexibility in site specific application, i.e. as combined numeric-narrative criteria for now, and work toward adopting site specific numeric criteria for each basin/subbasin in the State over time.
5. Write the standard in a way that allows for adaptive management. Work with the Services to determine how adaptive management may fit within the ESA tests that will have to be met to get approval of the standard.
6. Determine how the State will deal with uncertainty. Options: precautionary principle, no economic impact unless harm can be proven, compounding conservatism, balanced assumptions with reasonable "margin of safety."
7. Do not lose progress made under the current criteria.

Policy Questions:

1. Is the desired level of protection or acceptable level of risk different for ESA-listed species than for those that are not listed?
2. Should there be an allowance for human activity or an allowed "de minimus" increase? How should it be handled for point sources? For nonpoint sources?
3. Should the criteria include an "all feasible steps" or "irreversible" activities provision to address stream alterations or impacts that can not feasibly be removed or restored within some specified time horizon? If so, what activities fall into this category (e.g. large dams, urban development, major highways, major dikes, etc.)?
4. Should the Temperature Management Plan provision be retained?
5. Should the criteria be written to facilitate implementation in both regulatory and voluntary water quality programs to address both point and nonpoint sources of stream warming? How could this be done?
6. Is it desirable to focus implementation efforts on those improvements that will produce the most environmental gain for the least cost? How could this be facilitated through the criteria language?

DEQ Rulemaking

Following the court decision and issuance of EPA guidance, DEQ discussed the developing temperature criteria with the PAC in April, June, July and September of this year. In addition to policy objectives and issues listed above, technical information was presented by a member of the Temperature TAC (see Attachment C2), draft rule language was provided for early comment, and the methods for designating fish uses were presented for discussion, as well as some early draft maps of use designations.

The draft temperature rule and fish use designations were released for public comment on August 15 and these drafts were discussed at the September PAC meeting. EPA also reviewed with the PAC at that meeting its process and schedule for promulgating a temperature standard for Oregon.

At the November PAC meeting, DEQ will present to the PAC a summary of the major public comments we received on the draft proposed rule and how we are responding. DEQ has made a number of changes to the proposed rules based on public comment.

Attachment C2
A Summary of the Discussion and Findings of DEQ's Technical Advisory Committee on Water Quality Criteria for Temperature

DEQ assembled a technical advisory committee (TAC) of experts in fields pertinent to the review of our water quality standard for temperature, including fish biologists, stream ecologists, hydrologists and an environmental engineer. The committee met periodically between April, 2001 and October, 2003. The membership is shown in the table below.

The purpose of the TAC was to assist the Department in 2 tasks. The first task was DEQ's participation in the development of EPA Region 10 "Guidance for Temperature Water Quality Standards." The second was DEQ's review and revision of the State's water quality standards for temperature.

The discussion, findings and recommendations of the committee are summarized below, according to topic.

DEQ Temperature Technical Advisory Committee Membership

Name	Organization	Specialty
Dr. Bob Danehy	Weyerhaeuser Company	Aquatic Ecologist
Dr. Larry Crawshaw	Portland State University	Biologist, Physiologist
Dr. Christian Torgersen	US Geological Survey, Forest and Rangeland Ecosystem Science Center	Fish Biologist
Dr. Joe Ebersole	EPA Western Ecology Division	Fish Biologist
Dr. Sherri Johnson	USDA Forest Service Pacific Northwest Research Station	Stream Ecologist
Tim Downey	Eugene Water & Electric Board	Fish Biologist
Dr. Robert Beschta	Oregon State University	Forest Hydrologist
Michael McNamara	Wallowa-Whitman National Forest	Forest Hydrologist
Dr. Alan Yeakley	Portland State University	Hydrologist
Bob Eimstad	Carollo Engineers	Environmental Engineer
Ex-officio:		
Jeff Lockwood	National Marine Fisheries Service	Aquatic Ecologist
Elizabeth Materna	US Fish & Wildlife Service	Fish Biologist
Staff:		
Debra Sturdevant	Oregon Dept. of Environmental Quality	Water Quality Specialist

Literature Reviews

From fall of 1999 to spring of 2001, an EPA Technical Workgroup developed 5 technical summary papers and a "Technical Synthesis" paper to review and summarize the current scientific literature on dynamics of stream temperature in the natural environment and on how water temperature affects salmonids. DEQ participated in this technical workgroup and the development of these papers.

The papers were reviewed by a scientific peer review panel assembled by an EPA contractor hired for the specific purpose of providing this outside expert peer review. The members of the peer review panel and their comments can be found on the EPA Temperature Project web site. The 5 technical summary papers include:

1. Salmonid Behavior and Water Temperature,
2. Salmonid Distribution and Temperature,
3. Spatial and Temporal Patterns of Stream Temperature,
4. Temperature Interaction
5. Summary of Technical Literature Examining the Physiological Effects of temperature on Salmonids.

DEQ asked the Temperature TAC to review these papers to determine whether they generally presented a good scientific basis for our review, or whether they saw significant issues or gaps. In general, the TAC found the papers provided a complete and accurate summary of the current scientific literature.

The TAC generally concurred with the conclusions of the physiology paper. There were some concerns that the bull trout literature, which is limited, had been "over-interpreted" in the EPA findings. There have been additional bull trout papers published since the EPA summaries. These are discussed in the section under bull trout below.

The TAC had a few questions on the behavior effects paper, but agreed with several findings. Preference studies are reported in this paper and the TAC recognized that final preference is a valuable statistic for indicating physiological optimum. The committee also agreed with the finding that fish will move into refugia, if it is available, as temperatures become stressful. The committee recommended we look at a new paper on refugia and behavior by Ebersole et al, 2001.

The TAC agreed that ideally, stream temperature criteria should approximate as closely as possible the natural seasonal thermal regime of a stream or river ecosystem to provide for all the beneficial uses which are influenced by temperature.

EPA Guidance for Temperature Water Quality Standards

The EPA Region Temperature Project was initiated to develop EPA guidance to States and Tribes in the Pacific Northwest on temperature criteria to protect salmonids, with the focus on species listed under the federal Endangered Species Act (ESA). EPA formed a technical workgroup, mentioned above, and a policy workgroup. Both workgroups included members from federal, state and tribal agencies and DEQ staff participated in both workgroups.

The Temperature TAC assisted DEQ with our participation in EPA's technical workgroup by providing DEQ input and comment on documents during the development of the EPA guidance. The TAC was asked to review and comment on two draft guidance documents released in October 2001, and October 2002. These discussions helped DEQ formulate our comments and recommendations to EPA and helped to shape the final EPA guidance document.

The final EPA guidance was issued in April 2003. The TAC was asked to provide input to DEQ on our draft proposed temperature criteria. The recommendation from the EPA guidance was always one of the options considered. In a few cases, the TAC recommended that DEQ adopt something different from the EPA recommendation. These are discussed below.

Temperature Standard – General Framework

The TAC agreed that the objective of the temperature standard is to protect the fish population in a sub-basin or watershed; that this makes sense as a definition of protecting the beneficial use and it would not make sense to say the objective is to protect each individual fish from any thermal affects. Another way to say this is while we may want to provide for the "greatest good for the greatest number" we would not expect even natural conditions to be optimal for fish everywhere at all times.

The TAC supports the use of biologically based numeric criteria within the standard on a limited basis, with the recognition that they are only one component of the temperature standard and that it is recognized in some places these criteria are not attainable and would not be attainable absent human influence. The TAC recommends that the criteria "preamble" include language recognizing that we do not believe every stream will meet the criteria. The criteria can, however, serve to point us to places where we should look at the system and see what can be done to cool those streams (reduce or remove human caused warming). The closer the thermal regime is to its natural potential, the better the conditions will be for cold water fishes and native aquatic communities as a whole. Therefore, where numeric criteria are unachievable, the target should be natural potential.

Where streams are impacted only by nonpoint source activities, it is safe to assume that managing or restoring the stream to meet the criteria or natural thermal potential in the warm summer months will also allow that stream to maintain its natural thermal regime throughout the year. For this reason, it is not necessary to have "off season" numeric criteria for all species life stages. However, this assumption does not hold up below major reservoirs or point source discharges where it is possible that fall or winter heat loads may alter the water temperature more than they do during the summer.

The TAC also noted that there is added benefit to restoring the natural functioning of stream systems (e.g. re-vegetation of channel banks and riparian areas) besides providing appropriate thermal conditions. Habitat will be improved for salmonids and other species, food will be more available and perhaps higher quality, and sediment loads will be reduced. It is even possible that stream flows may be enhanced due to increased floodplain storage and discharge of groundwater into the stream during low flow periods.

Temperature Criteria Metric The TAC agreed that the 7-day average of the daily maximum stream temperature is a reasonable metric to use for the temperature criteria and should be maintained. The 7-day average maximum metric provides a simple indicator of a complex thermal regime. If the 7-day average maximum temperature is reduced in a particular stream, this is a good indicator of improved thermal conditions. Also, daily maximum temperatures are more telling regarding possible effect to biota than daily mean temperatures alone. Daily maximum temperatures can impact fish if they get warm enough, even if the stream is hot for only part of the day. A major concern with using a 7-day average of the daily mean temperature, is that this metric often masks high temperatures (which may be stressful to fish and other aquatic organisms) because these higher temperatures are averaged with cooler temperatures that occur at night. A daily mean temperature value alone provides less information on the maximum temperature the fish will be exposed to during the day unless the diurnal temperature fluctuation is known as well. Another advantage of using a daily maximum metric over a daily mean is that it will be more sensitive to improvements in stream management or condition.

Advantages of using the 7-day average of the daily maximum rather than the annual maximum (single highest daily maximum) are that it is not dependent on a single measurement, it will exhibit somewhat less year-to-year variability than the annual maximum, and it will be less impacted by the measurement interval of the recording instrument. In addition, since the temperature ranges used to set the criteria are aimed at preventing sub-lethal or chronic effects, the exposure of the fish to temperatures over a period of time, such as a week, rather than a single short term exposure, is biologically more relevant.

One disadvantage of the 7-day average maximum is that when considering laboratory studies to evaluate the chronic effects of stream temperature criteria

on fish, such as growth rates, we must keep in mind that most studies are reported as continuous or mean temperature and there is a need to translate from the metric used in the study to the daily maximum metric used for the criteria. This translation is possible, however. For example, maximum growth rates for some salmonid species occur at about 15°C as a mean or continuous exposure. But this does not mean that the daily maximum temperature must be 15 to maximize growth. For example, a stream having a daily maximum of 18° and a diurnal flux of 6°C (a common diurnal fluctuation for Oregon streams in the summer), would have a daily mean of 15°C. A second possible disadvantage is that a stream with a low diel fluctuation will spend more time at warmer temperatures than one with a larger diel flux. This could affect biota even though the 7-day average maximum of both rivers is the same. A combination of metrics may provide more information on the actual exposure of fish to various temperatures given the thermal regime of the river, but becomes difficult to implement as a criterion. Overall, as a single metric, the 7-day average remains the preferred metric to use for the criteria for the reasons stated above.

The TAC recommended that DEQ convert all the temperature criteria into degrees Celsius. They also recommended that all criteria be stated to the nearest whole degree and that the de minimis allowance be stated to the nearest one-tenth of a degree (0.2 or 0.3). Stating the de minimis as 0.25, gives a false notion of accuracy to the hundredth of a degree.

Natural Condition/Thermal Potential The TAC supports the idea of targeting natural conditions or thermal potential for purposes of protecting native fish populations where the numeric criteria are unattainable. They did not support the idea of adopting numeric criteria based on the estimated natural thermal potential of a given reach of stream or river. Rather, the numeric criteria or "natural condition" should remain the ultimate target. The reason for this preference is because of the limits and uncertainties in our ability to predict the natural thermal potential. For example, there are uncertainties in modeling and perhaps even greater uncertainty around whether we are making the correct estimates and assumptions about the natural or site potential stream conditions we use in our modeling analysis and whether we can fully restore those conditions. That said, given the extent that watersheds, flows, and streamside systems have been altered, modeling is ultimately the only realistic means of estimating the natural thermal regime of most streams and rivers. Stream temperature models and modeling techniques are continually evolving and reaching increased levels of sophistication and applicability for determining stream natural thermal conditions. We should expect that TMDLs may need to be revised in the future as data and analysis capabilities improve and our estimates of natural conditions get better.

Cold Water Protection

Anthropogenic warming of stream reaches that are colder that the numeric criterion should be limited for 3 reasons. First, the natural thermal regime of a

stream is presumed to provide the best thermal conditions for the native aquatic communities. Second, there is value to having a diversity of thermal habitats, including reaches that are colder than the criteria. And third, added heat will remain in the water for some distance downstream, providing the possibility for accumulative warming if multiple sources of warming overlap. This can cause the stream to exceed the criteria further upstream, reducing the amount of optimal or suitable habitat available within a sub-basin.

The TAC felt is would be appropriate to have a narrative criterion limiting human caused increases to: 1) summer maximum stream temperatures in reaches or sub-basins with T&S species and in reaches designated as ecologically significant cold-water refugia (including all bull trout spawning & juvenile rearing habitat); and 2) April and May temperatures in waters where steelhead rearing and smoltification is occurring.

In most cases, reaches that remain colder than the criteria in the summer will be in upper portions of the sub-basin, impacted primarily or only by nonpoint sources. In these areas, the de minimis increase could be applied cumulatively over a 6th field HUC scale. A small number of spatially limited increases greater than 0.3 degrees may be possible without impacting fish if they are located in areas without fish and managed in a way that the impact is no longer measurable at the base of a 6th field HUC. Other issues related to a de minimis increase are discussed below under "de minimis increase allowance for human use.

The TAC agreed that there should also be a limit to anthropogenic warming in the winter. Due to a lack of time and data, however, they were not able to investigate this sufficiently to provide a recommendation on what the limit should be. There has been much less temperature data collection and analysis for wintertime temperatures than during the summer. The TAC noted that the concerns with raising temperature in the winter include egg survival and the timing of hatch and emergence in spawning areas, as well as a general shift in aquatic community composition and ecology that would accompany large changes to the thermal regime.

The temperature criterion for spawning applies from the onset of spawning through the emergence of fry from the gravel. It is assumed that the natural thermal regime between these 2 points of time will be colder than the 13°C spawning criterion, and that this further winter cooling is needed to fully protect egg incubation. If the timing of emergence is altered by an altered thermal regime, fry may emerge when streamflow and food availability are not conducive to their survival. Timing of emergence is affect by degree-days, such that it could be impacted by a relatively small increase in temperature that occurs over a long period of time.

Another issue that should be considered when assessing winter time impacts from point source discharges is whether the heat added to a river may dissipate

more quickly than it does in the summer. If this is the case, the impact may be limited to a small area. The TAC was not able to make a finding on this issue, however, due to the lack of wintertime data analysis or modeling to date. More analysis of winter time temperature data is needed to answer this question.

De minimis Increase Allowance for Human Use

This provision would provide a limited allowance for human use of the waters of the State and the landscape by allowing a de minimus increase in stream temperature from human activity, even where the numeric criteria are exceeded. Because nearly every sub-basin in the State will contain reaches that will not be able to attain the numeric criteria, the natural thermal conditions narrative will be the most widely applied criteria in the temperature standard. The de minimis allowance for human use is based on the assumption that not all waters need to be at an absolute natural thermal condition, absent any human warming, in order to protect salmonids; that some small increment of warming due to human activity will be inconsequential to the aquatic biota.

The following are some of the observations and comments of the TAC related to the de minimis increase allowance:

1. The TAC agrees that some small increment of warming above the criteria or natural condition is probably not going to harm fish. The numeric criteria are conservative. An increase of 0.2 or 0.3°C is within the range of uncertainty in the thermal requirements of fish and the ability to estimate natural conditions.
2. Whether the de minimis allowance is 0.2 or 0.3°C is a policy call. However, the farther temperature gets from the natural condition, the greater the risk for aquatic life. The effect occurs on a continuum, it is not a threshold.
3. The incremental increase in maximum temperatures that can occur without causing harm will depend on the background temperature.
4. The de minimis allowance should be stated to the nearest one-tenth of one degree. It should not be stated to the one-hundredth of a degree, giving a false sense of precision.
5. The error of temperature recording instruments is currently about 0.2 degrees C but is likely to decrease over time as newer and more precise temperature sensors become available. From a practical perspective, the ability to measure the difference in temperature between 2 points in space or time with a limited number of data points could be twice that amount.
6. For nonpoint sources, the "per source" limit could not be applied to each activity or landowner due to the large number of nonpoint source activities along a stream. The de minimis increase could be defined as either: a) establishing management measures and practices aimed at causing no anthropogenic warming, knowing that they will be imperfect and take a long time to have their desired result; or b) establishing management measures or practices aimed at causing no more than a de minimis increase over a 6th field HUC spatial scale. In this case, not every 6th field HUC would be monitored or modeled, but this could be a "design criteria" for those defining management practices and

conducting sufficiency analyses. Meeting a 0.3°C cumulative increase over a 6th field HUC scale would be difficult and would likely be masked by interannual variability.
7. Cumulative effects should be considered. One possibility would be to add a 1.0°C cumulative increase cap at the scale of a 4th field HUC for both point and nonpoint sources that would be implemented during the TMDL process. Analyzing for cumulative impacts would require modeling as that is the only way to currently address the large number of variables affecting stream/river temperatures.
8. It may be simpler to implement the allowable increase for point source and nonpoint source separately, rather than trying to do a cumulative impact analysis of both types of sources together. Option 6 b above, for nonpoint sources, could be very difficult to implement as it would require modeling and it can be difficult to determine "baseline" conditions and interannual variability. Determining cumulative loads for point sources is less complex if streamflow data is available.

Possible approaches for the de minimis allowance for human use:
1. No more than a 0.1 or 0.2°C increase from a single point source or dam above the numeric criterion or estimated thermal potential assuming complete mix with 100% of the 7Q10 flow at the point of discharge. Another possibility is to limit the increase from a single source to 0.2 or 0.3°C at the edge of the mixing zone, which allows less than the full flow of the river for mixing (e.g. often 25% of the cross sectional area of the stream).
2. No more than a 1.0°C increase above the numeric criteria or estimated thermal potential (whichever is higher) due to all point and nonpoint sources and dams cumulatively within a 4th field HUC, at any given location. This would be implemented with the development of a sub-basin scale TMDL.
3. Nonpoint source de minimis: Even though the cumulative impact analysis under # 2 would include nonpoint sources effects over a 4th field HUC scale, this is such a large scale that localized impacts may be masked. The single source limit in #1 above should not apply per activity or land owner due to the large number of nonpoint source activities along a stream. One of the following would prevent an unacceptable amount of warming at a smaller scale due to nonpoint sources:

a. A de minimis warming (i.e. 0.3°C) above the numeric criterion or estimated thermal potential from all nonpoint sources cumulatively over a 6th field HUC. This would be implemented by meeting load allocation surrogate measures developed in a TMDL and/or following stream protection rules/targets in Forest Practices rules, Agricultural Water Quality Management Plans and other nonpoint source water quality management plans. If forest practices or agricultural WQMPs are not applicable, this may be determined by monitoring and/or modeling. This provides a target for designing land management practices and water quality management plans and analyzing their sufficiency to meet water quality criteria. OR

b. Nonpoint source management practices and measures should be designed to prevent anthropogenic warming of the stream. The uncertainties and imperfection in our ability to implement these practices and measures and the presence of permanent infrastructure (such as bridges) and unavoidable disturbances will be considered the de minimis allowance for human activity.

Temperature Criteria for Salmon & Trout

Rearing The TAC found that 18°C as a 7-day average maximum is highly protective for salmon and trout rearing and that colder habitat will be available if the 18° criterion is applied to the warmest (furthest downstream) rearing habitat. They felt the "core rearing" criterion (16°) recommended in EPA's guidance document was not well defined. In addition, they noted that if the 13° spawning criterion is met at the appropriate times (which in some locations apply from early or mid-September to mid-June), summer maximums in those areas would likely stay colder. In addition, the cold water protection narrative prevents waters currently colder than the criterion from being significantly warmed.

The TAC did not think the term "core rearing" was appropriate for the 16° criteria application. Biologists use the term differently, there are various definitions, and core rearing is not actually being used to determine where this use should be designated. They suggested some alternative terms to consider, such as cold water conservation reaches, landscape scale thermal refugia or core cold-water habitat.

Migration The TAC supports the 20°C criterion for migration corridors. These are reaches that don't have rearing in the warmest summer months and are used largely as migration corridors. There may not be much migration during the warmest weeks of the year, but neither is 20 an optimal thermal condition for migration. The idea is that when the bulk of the migration occurs, temperatures will not be their peak and migration will be protected. It is also important in these reaches to protect the natural thermal heterogeneity, such as cold water refugia, colder tributary inputs, and natural diurnal fluctuations that provide cooler temperatures during a portion of each day.

Salmonid Spawning The TAC recommended that DEQ not adopt a separate numeric criterion for salmonid spawning. The reasons for this include:
1. Spawning criteria aren't necessary in many places because the mechanisms to control the summer maximum and spawning temperatures are the same. Peak and shoulder temperatures are coupled in natural streams. The exception to this is below reservoirs and major point sources. These situations would be better addressed on a site specific basis with a narrative that requires the source to mimic the natural thermal regime. This would allow incubation conditions, which require colder temperature than the onset of spawning, to be addressed as

well. Such a narrative could be implemented through permits, TMDLs and 401 certifications.
2. We do have not data showing that spawning temperatures are a problem on a broad scale.
3. There is a large amount of spatial and temporal variability in spawning within and among streams, and in particular a high degree of interannual variability in the timing of the onset of spawning.
4. There is a fair amount of plasticity in when salmon spawn, as they respond to local conditions. They wait for temperature to drop or rise, within limits, depending on whether they spawn in the fall or spring. When stream temperatures drop will vary from year to year, but they tend to drop quickly.
5. There is uncertainty in the data on when and where spawning occurs and a lack of good data on emergence. The resolution of the ODFW timing data in many cases is quite coarse (some of the timing units are quite large).

The TAC found that 13° is protective and conservative. They felt that 14°C would also be protective of spawning. For this reason and the reasons listed above, the TAC recommended that if DEQ does go forward with a spawning criterion, that the criterion apply to "peak use" and that it apply only for salmon and steelhead species and not resident trout. The TAC noted that more data collection and analysis of fall and winter temperature regimes is needed.

Steelhead Smoltification

The EPA guidance recommends a criterion of 14°C for steelhead smoltification. They suggest that it apply throughout major tributaries to their mouths at the Columbia River and the Pacific Ocean for the months of April and May, but not to the main stem of the Columbia River, until basin specific information on when and where smoltification occurs is available.

The TAC recommends that DEQ not adopt a smoltification criterion. It is safe to assume that application of the combination of other numeric and narrative criteria included in the temperature standard will yield stream conditions that sufficiently protect the thermal regime in the spring to meet the thermal needs of smolts. Monitoring studies could be done to test this assumption in the future.

Reasons to not adopt a smoltification criterion at this time include:

a. There is uncertainty about when smoltification begins and ends, how it progresses with downstream migration and how and when temperature plays a significant role in this physiological process. Some O. mykiss migrate to the ocean their first year, some their second year and some remain resident fish. If they migrate they are steelhead, if they remain resident they are rainbow trout. Whether and when a juvenile migrates and becomes a smolt may depend on several factors. One is considered to be growth rate. Temperature may be another, as may be competition for limited freshwater habitat.

b. While there are studies that show that temperature can affect ATPase levels, there is uncertainty about how the ATPase levels in turn affect the smoltification process.
c. Meeting 14°C at the stated times and locations is not typically a problem. The additional criterion would add complexity and expense to implementing the temperature standard without providing a significant additional fish protection benefit.

Temperature Criteria for Bull Trout *(Salvelinus confluentus)*

The TAC recommends that DEQ change the criterion for bull trout juvenile rearing to 12°C. This criterion would provide a high degree of protection and a low level of risk for rearing bull trout. This criterion should apply in and near natal streams and potential natal streams; this is where juvenile rearing also occurs. For example it could should be applied to the areas in which redds are found and somewhat downstream of these areas, such as to the next stream confluence downstream.

The 12° criterion for bull trout juvenile rearing is recommended in the EPA temperature guidance. In addition to the EPA technical summaries, the TAC considered some bull trout papers published after the EPA papers were completed, as well as the report of a Peer Review Panel assembled by the USFWS to address questions about bull trout (Myrick, 2002).

The TAC found that the available literature would support a criterion of 13° as protective from thermal impacts. However, for the following reasons they recommended that DEQ adopt a criterion of 12:

1. the amount of work done on the effects of temperature on bull trout is still relatively limited,
2. there is some uncertainty,
3. the species are listed under the federal ESA, and
4. there are concerns about the possibility of limited food in bull trout streams, which influences thermal effects on fish.

The 12° criterion is not intended to be applied to areas used by migrating or foraging sub-adult and adult bull trout. This life stage would be protected by meeting a 7-day average maximum criterion of 16°C. Data from the Wenaha River in Northeastern Oregon, a river that is relatively un-impacted by human activity in the upper reaches, showed that the highest relative abundance of sub-adult and adult bull trout were found where 7-day average maximum temperature was greater than 16 (data presented by Christian Torgersen, TEMPERATURE TAC meeting, January, 2003).

The TAC found that a separate numeric criterion is not necessary for bull trout spawning. The assumption is that if 12°C is met as a MWMT (7-day average maximum for the warmest week of the year), that temperatures of 9 or 10 should

be available for spawning at the appropriate times. Because this assumption would not necessarily hold true for spawning areas below reservoirs, a narrative has been added to the rule that prohibits more than a de minimis warming from above to below the reservoir when during spawning and egg incubation times.

Temperature Criteria for Lahontan Cutthroat Trout *(Oncorhynchus clarki henshawi)*

Lahontan cutthroat trout are resident trout located in the interior great basin area of southeastern Oregon. Only a small portion of the Lahontan cutthroat trout range, which is largely in Nevada and also extends into southwestern Idaho, is located in Oregon. Because Oregon's current temperature criteria were based primarily on anadromous salmon and steelhead and rainbow trout, there has been concern that the criteria are not appropriate for the interior resident trout of the more arid portions of the state. DEQ agreed to review the available science for Lahontan cutthroat trout and redband trout (discussed below) and was provided some funding to contract with University researchers to provide additional information.

DEQ contracted with Dr. Jason Dunham, then with the University of Nevada Biological Resources Research Center, to review and summarize the available information on the temperature requirements of Lahontan cutthroat trout and to make recommendations on the Department on an appropriate temperature criterion. His report, *Stream temperature criteria for Oregon's Lahontan cutthroat trou*t Oncorhynchus clarki henshawi, *Final Report*, was completed April 31, 1999 (Dunham, 1999).

Dr. Dunham's report was provided to the TAC to review. In addition, Dr. Dunham joined one of our TAC meetings via conference call to provide an overview of his report and answer questions. Dr. Dunham recommended a numeric criterion for Lahontan cutthroat trout of 68°F, or 20°C, as a 7 day average daily maximum. A 7-day average maximum of 68° would present a very low possibility of exceeding 72°F on the warmest day of the 7 day period. He concluded that this criterion would protect Lahontan cutthroat trout from both chronic and acute impacts and noted that this value includes a 2° margin of safety, as recommended by the EPA temperature guidance at the time (National Academy of Sciences, 1972).

Physical evidence corroborated the findings of Dr. Dunham. Temperature modeling was done on Willow Cr., a Lahontan cutthroat stream, and estimated that the thermal potential of the stream with site potential vegetation restored was about 68°F.

The US Fish & Wildlife Service Recovery Plan for Lahontan Cutthroat Trout (1995), which are listed as a threatened species, states that optimal habitat is characterized by an average maximum summer temperature of less than 22°C (72°F). (p. 39)

The TAC felt comfortable with Dr. Dunham's review, analysis and recommendations, and endorses the Department's proposal to adopt a 20°C criterion for Lahontan cutthroat trout.

Temperature Criteria for Redband Trout *(Oncorhynchus mykiss* ssp.)

Like the Lahontan cutthroat trout, redband trout are an interior resident trout and concerns were raised about whether the current 64°F (17.8°C) temperature criterion is appropriate for these fish. Redband are the native rainbow trout found in the semi-arid and arid portions of the State east of the Cascade Mountains. They have sufficient differences from coastal rainbow trout that they have been identified as a distinct subspecies (Behnke, 1992).

Little information was available on the thermal requirements of redband trout during the development of DEQ's current criteria, which were adopted in January 1996. Also, the review at that time did not specifically look for literature available for redband separately from rainbow trout. Since that time, however, additional research has been done on redband trout.

New research on this species has been published since DEQ's last temperature standard review. DEQ contracted with 2 researchers involved with the redband research work to conduct a literature review and make recommendations for appropriate temperature criteria for redband trout (Gamperl & Rodnick, 2003). This information was presented by the researchers and reviewed and discussed by the TAC. The information and TAC discussion and recommendations are summarized in Appendix A (attached).

The TAC recommended that DEQ adopt a criterion of 20°C for redband trout. It is also recommended that this criterion apply only to basins that do not have anadromous trout (steelhead). In basins with steelhead, also an O. mykiss, there is the possibility of genetic mixing. Much uncertainty remains concerning the classification of redband trout, variability in thermal tolerance within the species, and the applicability of thermal tolerance studies conducted on interior lakes basin redband trout to other populations. For these reasons, the TAC urged caution in applying this criterion broadly. Until more is known about the redband trout other areas, the redband criterion is proposed only for basins that currently do not have steelhead, which are the interior lakes basins, the Powder, Burnt, Malheur River, Owyhee and Klamath basins.

Methodology for Determining Fish Use Designations

The methodology being used by an interagency team to develop the proposed beneficial use designations for fish use in Oregon is described in the EQC Staff Report Attachment H. This methodology was discussed with the Temperature TAC at two meetings as it was being developed and some early examples of

maps were presented for review. The TAC was not asked to make a recommendation approving the methodology as it was still under development and the time for their review was limited. Below are comments from the TAC discussion.

The TAC did not like the term "core salmon & trout rearing" to describe the colder water reaches, because the method being used to identify these colder waters is for the most part not based on rearing information. Juvenile rearing density information is not widely available. In addition, the TAC does not presume that the highest densities of fish would necessarily correlate with streams that maintain a 7-day average maximum temperature less than 16° C throughout the summer. The TAC provided several alternative suggestions for the name of this use type (listed under the section on rearing criteria above). This use designation is intended to provide: 1) assurance that optimal salmon & steelhead rearing temperatures are available all summer long in portions of the sub-basin, 2) protection for sub-adult and adult bull trout foraging and migration where it occurs during July & August, and 3) some areas of colder holding waters for pre-spawning adults.

In looking at a couple examples of maps, the TAC felt that the colder water areas (bull trout use and core cold-water habitat) were showing up where you would expect. Looking at the example of the John Day, one member who has done fisheries research in the areas felt like the extent of the colder water areas was larger than where you would expect "core rearing" to occur, but a reasonable estimation of the downstream extent of colder water habitat (Christian Torgersen, personal communication).

Uncertainties

There are uncertainties in both the biological and physical sciences related to stream temperature dynamics and the thermal requirements of salmonids and other aquatic life. There is much information to work from as well, however, and in some areas fairly good consensus among the scientists in these fields.

Some of the uncertainties in the biological information include:
1. Translating the results of laboratory studies on the effects of temperature on fish to natural stream conditions. The results will vary somewhat depending on factors such as the availability of food and dissolved oxygen and whether the temperature is constant or fluctuating.
2. There can be multiple stressors in the field acting on the fish at the same time. These may include disease, competition, chemical contamination, low dissolved oxygen, a lack of food and others.
3. Fish have the ability to thermo regulate behaviorally, by moving. When we set criteria for the well mixed flow of the river, we are not incorporating the role of thermal refugia, which may provide some relief or reduce the actual exposure of the fish in the field to warm temperatures.

4. The translation from effects of temperature on individual fish to affects on populations is uncertain.
5. How changes in temporal or spatial patterns of thermal diversity impact populations, even when maximum or mean temperatures remain the same, is not well understood. If fish use temporal thermal diversity (migrating or foraging during cooler nighttime temperatures) or spatial thermal diversity (using cold-water refugia during mid-day) then impacts to the "pattern" of temperature could be as significant as changes to the mean or maximum temperature.

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Appendix A
Staff Proposal: Temperature Criteria for Redband Trout

Temperature Criteria Proposal

Combine Redband trout and Lahontan cutthroat trout into one "guild" for the purpose of applying temperature criteria.

The criterion proposed is 20°C as a 7-day average maximum (or MWMT, maximum weekly maximum temp.) for all life stages except spawning & incubation.

Background

Oregon's redband trout inhabit streams in the semi-arid eastern and central portions of the state, which often have large diurnal temperature fluctuations (6-12°C), relatively high maximum daily temperatures during the summer, and large seasonal fluctuations in flow (Gamperl and Rodnick, 2003).

Thermal Requirements of Redband Trout

1. Preferred temperature of juvenile redband (Bridge Creek and Little Blitzen R., Oregon) = ~13°C (Gamperl, et. al. 2002). This value is not higher than the preferred temperature of other rainbow trout.

2. Critical thermal maxima values for redband trout from 3 streams in southeastern Oregon ranged from 28.0 to 30.8°C for individual fish, with an average for all streams and size classes of 29.4 +/-0.1°C (Rodnick, et al. 2002)

3. Optimum temperature for growth >19°C (cited in Behnke 1992, cited in Gamperl and Rodnick 2003).

4. Maximum oxygen consumption and metabolic power values at 24°C were elevated for redband trout from streams in southeast Oregon as compared to rainbow trout (Rodnick et al, 2003). Also, maximum oxygen consumption and metabolic power values were comparable or higher at 24°C than they were at 12°C. Gamperl and Rodnick (2003) state:

> These data suggest that: 1) short term exposure to stream temperature up to 24°C is unlikely to have a negative impact on redband trout populations; and 2) strongly promote the idea that the redband trout does have an enhanced capacity to function, and probably flourish, at warmer temperatures than most salmonids.

5. As an indicator of sub-lethal stress, Rodnick et al (2003) measured routine metabolic rate as water temperature was increased by 2°C per hour. They found that redband trout began to experience sub-lethal stress at 24°.

6. Rainbow trout (O. mykiss) begin to synthesize heat shock proteins (an indicator of stress) between 25 and 26°C (multiple sources cited in Gamperl and Rodnick, 2003). Lahontan cutthroat trout begin to synthesize heat shock proteins between 24 and 26°C (L. Weber unpub. cited in Dunham, 1999).

7. Redband trout from the Catlow Basin (State?) showed the best growth at 19°C, the highest temperature tested, whereas rainbow trout grew best at 15-16°C (Dwyer et al, 1986, in EPA, 2001).

8. Sonski (1982) found that redband trout grew at the maximum rate at 20°C and that growth rates were reduced at both 15 and 22.8°C (in EPA, 2001).

9. Sonski (1982; 1984) found that redband trout cease feeding when temperatures get above 25 to 27°C.

10. Upper incipient lethal temperature (UILT) for sub-yearling redband trout were measured at 26 to 27°C (Sonski, 1984 in EPA, 2001). These values are similar to UILT values for other rainbow trout.

11. Redband trout have been observed feeding and surviving in streams that reached 27-28°C (Behnke 1992, Sonski 1986, Bowers et al. 1979; in EPA 2001). It is unclear, however, where the stream temperatures were measured in these studies relative to the location of the fish or whether the fish may have been utilizing cooler refugia within the stream.

Discussion

Gamperl et al (2002) state that while redband trout have a similar genotype and thermal preference to other salmonids, they display differences in physiology, biochemistry, and morphology. Gamperl and Rodnick (2003) recommended to DEQ a temperature criterion of 22°C as a 7-day average of the daily maximum temperatures applied to the warmest week during the summer, or a combined criterion of 18.5°C as a weekly mean temperature and 24° as a maximum daily temperature.

DEQ staff find that the literature supports the conclusion that redband trout, like Lahontan cutthroat trout, have the ability to function unimpaired at somewhat higher temperatures that other salmonids. Therefore, there is a scientific basis for a somewhat higher temperature criterion for these species during summer maximum conditions.

However, the DEQ proposal above (20°) is more conservative that the recommendation suggested by Gamperl and Rodnick for the following reasons:

1. There are still relatively few studies on the thermal optimums and tolerances of redband trout. Some caution should be exercised until these results are corroborated by further study.
2. The work by Gamperl, Rodnick et al. was done in the southern portion of the State. Gamperl et al 2002 note that for some measures of physiological performance (metabolism and swimming speed), there are differences between redband trout and rainbow trout, and even between redband trout from different streams having different thermal regimes. We do not know if redband trout in other basins in the state have developed the same degree of resistance to thermal stress as the populations studied. Yet our temperature criterion will apply wherever redband trout are the most sensitive salmonid species present throughout the State.
3. It is acknowledged that a limited food supply would reduce the temperatures at which sub-lethal stress would occur.
4. The studies of metabolic rate and swimming performance have not yet looked at the combined effects of warm temperature with reduced dissolved oxygen levels to determine whether the higher physiological performance hold up under these conditions. Yet it is known that dissolved oxygen levels decline as temperatures increase.
5. No safety factor was added to the recommendation because it was not based on UILT values.

DEQ recognizes that many streams inhabited by redband trout will exceed the 20° criterion even under natural conditions, at least in the lower reaches of the stream system. Streams that exceed the criteria due to natural conditions are not in violation of water quality standards. However, it is important that streams at these temperatures not be further warmed as the result of human activity. Likewise, it is important that streams that are able to maintain cooler, preferred temperatures, are not warmed by human activity. Finally, it is important that cold-water pools, springs or tributaries that provide refuge for these fish during hot conditions be protected and restored.

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Attachment D

State of Oregon
Department of Environmental Quality — Memorandum

To: **Michael Llewelyn**
Water Quality Administrator

Date: **October 16, 2003**

From: **Mark Charles** MDC
Presiding Officer

Subject: **Presiding Officer's Report for Public Hearing**

Title of Proposal: Rulemaking Proposal – Adoption of OAR 340-041 State Water Quality Standards, Including Temperature Criteria

Hearing Dates and Start Times	Hearing Locations	No. of Attendees
September 15, 2003 1:00 PM	Newport	5
September 16, 2003 10:00 AM	North Bend	6
September 16, 2003 6:30 PM	Medford	3
September 17, 2003 1:00 PM	Eugene	9
September 18, 2003 10:00 AM	Portland	27
September 18, 2003 6:00 PM	Portland	4
September 22, 2003 1:00 PM	Redmond	5
September 23, 2003 6:00 PM	Burns	8
September 24, 2003 10:00 AM	John Day	2
September 24, 2003 6:00 AM	La Grande	5

Report

Between September 15th and September 24th 2003, DEQ held 10 public hearings in 9 locations around the State. Despite an unprecedented aggressive public outreach effort by DEQ, only a total of 74 persons attended the 10 hearings.

All of the public hearings were scheduled for at least 3 hours in duration. The hearings were each conducted in 2 phases. During the first 2 hours, DEQ personnel Mark Charles and Debra

Sturdevant made presentations on the overview and background of the proposed rules and took questions from attendees. A copy of the presentation is attached.

Following a short break, members of the audience were invited to either hand in written comments or make verbal statements on the record. No written materials were submitted at any of the hearings. A total of 2 individuals made verbal statements which were audio recorded and subsequently transcribed. These comments were made by Mr. Leo Grandmontagne, of Myrtle Point OR at the North Bend Meeting, and Mr. Glen Spain of Eugene at the Eugene Meeting. Their comments have been included as part of the record for this rulemaking, and the issues raised in these comments are addressed in the response to comments.

Submitted By:

Mark D. Charles,
Presiding Officer
October 16, 2003

Relationship to Federal Requirements

Answers to the following questions identify how the proposed rulemaking relates to federal requirements and potential justification for differing from federal requirements. The questions are required by OAR 340-011-0029.

1. Are there federal requirements that are applicable to this situation? If so, exactly what are they?

Yes. Applicable federal requirements for water quality standards are found in the federal Water Pollution Control Act Section 303(a)-(c) (33 USC Section 1313(a)-(c)) and implementing regulations in 40 CFR Part 131. At least every three years, states must review their water quality standards and, as appropriate, modify and adopt standards to ensure beneficial uses are protected.

In April 2003, EPA Region 10 adopted guidelines (not requirements) for states and tribes on developing water quality criteria for temperature.

2. Are the applicable federal requirements performance based, technology based, or both with the most stringent controlling?

Federal requirements are performance based.

3. Do the applicable federal requirements specifically address the issues that are of concern in Oregon? Was data or information that would reasonably reflect Oregon's concern and situation considered in the federal process that established the federal requirements?

Yes. The federal requirements and guidelines for water quality standards address procedural and substantive issues of concern to Oregon.

4. Will the proposed requirement improve the ability of the regulated community to comply in a more cost effective way by clarifying confusing or potentially conflicting requirements (within or cross-media), increasing certainty, or preventing or reducing the need for costly retrofit to meet more stringent requirements later?

Proposed rules clarify specific applications of the state's water quality criteria, antidegradation policy, and mixing zone requirements and improve the readability of OAR chapter 340, division 041. They also obviate the need for EPA to adopt federal criteria for temperature and intergravel dissolved oxygen in Oregon (see (5) below).

5. Is there a timing issue which might justify changing the time frame for implementation of federal requirements?

Yes. In March 2003, the Oregon federal district court overturned EPA's 1999 approval of Oregon's temperature and intergravel dissolved oxygen criteria and

found the antidegradation provisions deficient. The court ordered EPA to cure the defects by promulgating a federal rule by March 2004. The proposed state rules are intended to address the concerns of the court and obviate the need for a federal rule.

6. Will the proposed requirement assist in establishing and maintaining a reasonable margin for accommodation of uncertainty and future growth?

The proposed rules do not directly address such issues as reserve capacity or accommodation of future growth.

7. Does the proposed requirement establish or maintain reasonable equity in the requirements for various sources? (level the playing field)

The proposed criteria will become part of Oregon's water quality standards used to develop TMDLs, develop NPDES permit limitations, evaluate proposed dredge and fill permits under section 404 of the Clean Water Act, and issue certifications under section 401 of the Clean Water Act. The revised criteria maintain reasonable equity because they apply to all sources affected by these criteria.

8. Would others face increased costs if a more stringent rule is not enacted?

Adopting less protective criteria might lead to increased costs for restoration of cold water fisheries or disapproval by EPA and promulgation of federal criteria. [Other cost savings??]

9. Does the proposed requirement include procedural requirements, reporting or monitoring requirements that are different from applicable federal requirements? If so, Why? What is the "compelling reason" for different procedural, reporting or monitoring requirements?

No. The proposed rules do not include differing procedural, reporting, or monitoring requirements.

10. Is demonstrated technology available to comply with the proposed requirement?

Demonstrated technology and management practices for point and nonpoint sources are available to comply with the revised criteria.

11. Will the proposed requirement contribute to the prevention of pollution or address a potential problem and represent a more cost effective environmental gain?

Indirectly. Proposed requirements may lead to improvements in control technology or adoption of better management practices.

DEPARTMENT OF ENVIRONMENTAL QUALITY
Chapter 340
Proposed Rulemaking
STATEMENT OF NEED AND FISCAL AND ECONOMIC IMPACT
This form accompanies a Notice of Proposed Rulemaking

Attachment F

Title of Proposed Rulemaking:	***Revision of Water Quality Criteria for Temperature***
Need for the Rule(s)	Proposed changes revise state water quality standards as follows: • revise the ambient water quality criteria for temperature; • revise the ambient water quality criteria for intergravel dissolved oxygen; • clarify specific applications of the antidegradation policy for surface waters; • add requirements for temperature mixing zones; • add definitions to support these revisions; and • reorganize Division 041. Oregon had previously committed to revise our existing temperature criteria as a condition for U.S. Environmental Protection Agency's (EPA's) 1999 approval of our existing temperature criteria. This rulemaking was accelerated in order to address the federal District Court of Oregon's decision in NWEA v EPA (March 31, 2003), overturning the 1999 U.S. Environmental Protection Agency's (EPA) approval of Oregon's existing temperature criteria. The court also held that Oregon's current intergravel dissolved oxygen criterion is not protective of salmonid spawning activities. The proposed changes also incorporate many of the recommendations in EPA's April 23, 2003, guidance to States and Tribes for developing temperature criteria. Finally, the rule eliminates nearly 180 pages of redundant rule language from Division 41 and makes the rules much more user friendly without sacrificing content.
Documents Relied Upon for Rulemaking	This proposal reflects the latest science on salmonids and temperature summarized in the document *EPA Region 10 Guidance For Pacific Northwest State and Tribal Temperature Water Quality Standards (EPA 910-B-03-002) (April 2003)*. The maps and tables indicating where and when the biological numeric criteria apply are based primarily on information provided by the Oregon Department of Fish and Wildlife. EPA's Final Temperature Guidance is available on the EPA Region 10 Web site. EPA's guidance, supporting technical documentation, and the maps are available on the DEQ Water Temperature Criteria Web site: **http://deqstage/wq/standards/WQStdsTemp.htm**.
Fiscal and Economic Impact	
Overview	The Department will use the revised water quality standards as benchmarks to assess whether the quality of state waters is adequate, to list waters that are impaired (303(d) list), to develop wastewater discharge permits and pollution load limits in Total Maximum Daily Loads (TMDLs); and to conduct other programs to achieve water quality standards and prevent pollution. Nearly all point and nonpoint sources that discharge into or impact Oregon waters may be affected by the proposed rule changes. Dischargers include individuals, small and large businesses, local and state governments, and federal agencies. The following table summarizes specific changes proposed for the standards and anticipated fiscal and economic impacts.

Changes and Expected Impacts	
Proposed change in exising criteria/standard	**Expected fiscal/economic impact**
Temperature criteria	
• Revises and expands existing biological criteria and incorporates maps and tables	Since the criteria are more detailed, it is more tailored to specific locations and prevents

	explaining the application of these criteria to specific waters of the State.	arbitrary controls from being required. Broadens the definition of de minimis discharges. Maps are consistent with current application. Creates certainty.
	• Retains natural conditions criteria as default.	Recognizes naturally warm waters. Ensures that affected parties will not be held accountable for circumstances beyond their control.
	• Expands cold water protection.	Existing cold water refugia protection is expanded to include cold streams needed to ensure compliance at downstream locations.
	• Limits application of temperature management plans to certain nonpoint sources only.	Existing rule requires all point and nonpoint sources in a 303(d) listed basin to develop a temperature management plan.
	Temperature mixing zone considerations	
	• Adds a series of factors for permit writers to consider when designing temperature mixing zones.	May require outfall retrofits (e.g., rapid diffusers) for some point source dischargers. Other point sources may have to undertake further cooling than under the existing rule to accommodate these factors.
	Dissolved oxygen (DO)	
	• Adds maps identifying salmonid spawning areas where standard applies	No impact; maps consistent with current application. Creates certainty.
	• Increases minimum [intergravel DO] from 6 to 8 mg/l	No significant impacts. Minimal effects on contributing sources or 303(d) listings.
	Antidegradation policy	
	• Clarifies how existing policy will be applied	No impact; consistent with current practices. Specifically authorizes some types of "beneficial" short term degradation (e.g., stream restoration)
	Because the proposed changes largely clarify how, when, and where existing standards are be applied and do not substantially revise those standards, the Department does not expect the proposed changes to require persons who discharge from point or nonpoint sources to substantially alter their operations, monitoring, or other practices, even if permits are revised. For that reason, the changes should not cause significant fiscal or economic impacts. Exceptions will be dischargers that are currently required to meet 17.8 Celsius (64 Fahrenheit) may now need to meet 16 Celsius (60.8 Fahrenheit) at the edge of their mixing zone.	
General public	The general public will benefit from more certain protection of beneficial uses of Oregon waters with the proposed changes. Potential fiscal and economic benefits may flow from more recreational opportunities, reduced health risks, and healthier ecosystems. The Department does not expect any significant cost increases or savings to be passed along to the public as a result of the proposed changes (e.g., in user fees, taxes, or costs of consumer goods and services). Impacts on individuals who discharge are discussed in the Overview.	
Small Business	The Department does not expect the proposed changes to have significant direct or indirect fiscal or economic impacts on small businesses that discharge from point or nonpoint sources. See discussion of impacts in Overview above.	
Large Business	The Department does not expect the proposed changes to have significant direct or indirect fiscal or economic impacts on large businesses that discharge from point or nonpoint sources. See discussion of impacts in Overview above.	
Local Government	The Department does not expect the proposed changes to have significant direct or indirect fiscal or economic impacts on local governments that discharge from point or nonpoint sourc See discussion of impacts Overview above.	
State Agencies	The Department does not expect the proposed changes to have significant direct or indirect fiscal or economic impacts on state agencies that discharge from point or nonpoint sources or	

	that are responsible for nonpoint sources addressed in TMDLs. See discussion of impacts Overview above.
DEQ	The Department already applies the existing water quality standards being revised in this rulemaking in issuing wastewater discharge permits, 401 certifications, and TMDLs; in monitoring water quality; and in developing the 303d list of impaired waters. The Department does not expect implementation of the proposed changes to require a shift in staff or funding. The rules identify a future need to establish site-specific temperature criteria in the event a water of the State cannot achieve either the biologically based criteria or the natural conditions criteria. The proposed rules do not generate revenue for the Department.
Other agencies	The Department of Forestry will need to ensure that the Forest Practices Act requirements are aligned with these criteria. Similarly, the Department of Agriculture will need to ensure that the Agricultural Water Quality Management Plan program is aligned with these criteria.
Assumptions	Assumptions are stated in the Overview above. The analysis also assumes that increased protection of aquatic life and human health will lead to increased long-term benefits to society.
Housing Costs	The Department has determined that this proposed rulemaking will have no effect on the cost of development of a 6,000 square foot parcel and the construction of a 1,200 square foot detached single family dwelling on that parcel.
Administrative Rule Advisory Committee	DEQ developed this proposal in consultation with a Technical Advisory Committee, a Policy Advisory Committee of stakeholders, the Oregon Department of Fish and Wildlife, EPA, NOAA Fisheries and the U.S. Fish and Wildlife Service.

Prepared by	Printed name	Date
Approved by DEQ Budget Office	Printed name	Date

State of Oregon
DEPARTMENT OF ENVIRONMENTAL QUALITY

Rulemaking Proposal
for
Water Quality Standards – Temperature and Intergravel Dissolved Oxygen

Land Use Evaluation Statement

1. **Explain the purpose of the proposed rules.**

   Proposed changes to state water quality standards would:
   - revise the ambient water quality criteria for temperature;
   - revise the ambient water quality criteria for intergravel dissolved oxygen;
   - clarify specific applications of the antidegradation policy for surface waters;
   - add requirements for temperature mixing zones;
   - add definitions to support these revisions; and
   - reformat Division 041.

2. **Do the proposed rules affect existing rules, programs or activities that are considered land use programs in the DEQ State Agency Coordination (SAC) Program?**

   Yes **x** **No**___

   a. **If yes, identify existing program/rule/activity:**

   Water Quality Division:
   - Approval of Wastewater System and Facility Plans;
   - Issuance of NPDES and WPCF Permits;
   - Requirement of an Implementation Plan to Meet Restrictions for Waste Load Allocations on Water Quality Limited Waterways (TMDLs); and
   - Certification of Water Quality Standards for Federal Permits, Licenses.

   b. **If yes, do the existing statewide goal compliance and local plan compatibility procedures adequately cover the proposed rules?**

   Yes **x** **No**____ **(if no, explain):**

Programs and activities are existing DEQ land use programs and require an approved Land Use Compatibility Statement (LUCS) from affected local governments to ensure consistency with local comprehensive land use plans.

c. If no, apply the following criteria to the proposed rules.

Staff should refer to Section III, subsection 2 of the SAC document in completing the evaluation form. Statewide Goal 6 - Air, Water and Land Resources is the primary goal that relates to DEQ authorities. However, other goals may apply such as Goal 5 - Open Spaces, Scenic and Historic Areas, and Natural Resources; Goal 11 - Public Facilities and Services; Goal 16 - Estuarine Resources; and Goal 19 - Ocean Resources. DEQ programs and rules that relate to statewide land use goals are considered land use programs if they are:

1. Specifically referenced in the statewide planning goals; or

2. Reasonably expected to have significant effects on
   a. resources, objectives or areas identified in the statewide planning goals, or
   b. present or future land uses identified in acknowledged comprehensive plans.

In applying criterion 2 above, two guidelines should be applied to assess land use significance:
- The land use responsibilities of a program/rule/action that involved more than one agency, are considered the responsibilities of the agency with primary authority.
- A determination of land use significance must consider the Department's mandate to protect public health and safety and the environment.

In the space below, state if the proposed rules are considered programs affecting land use. State the criteria and reasons for the determination.

3. If the proposed rules have been determined a land use program under 2. above, but are not subject to existing land use compliance and compatibility procedures, explain the new procedures the Department will use to ensure compliance and compatibility.

Not applicable

Division _____ Intergovernmental Coord. _____ Date _____

Attachment H
A Description of the Information and Methods Used to Delineate the Proposed Beneficial Fish Use Designations for Oregon's Water Quality Standards

I. Background

DEQ worked together with an interagency team to delineate fish use designations for the waters of the State of Oregon and to develop maps and tables showing the applicable fish uses for each basin. Beneficial use designations are part of Oregon's Water Quality Standards, as required by the federal Clean Water Act, and the fish use designations shown on the maps and tables are proposed to be adopted into the Oregon Administrative Rules by reference. The agencies that participated in this effort include the US Environmental Protection Agency, the US Fish and Wildlife Service, NOAA Fisheries and the Oregon Department of Fish and Wildlife. The proposed fish use designation maps and tables may be viewed on the DEQ web site at http://www.deq.state.or.us/wq/standards/WQStdsTemp.htm or at any DEQ office.

Most of Oregon's basins have 2 maps to represent fish uses, one for uses that occur throughout the year, including the warmest period (July and August), and a second for salmon and steelhead spawning use (spawning through fry emergence). Water quality criteria apply for the uses shown on the "Fish Use Designation" maps year round except when a more stringent spawning criterion applies. The spawning criteria apply to the reaches and date ranges shown on the "Salmon & Steelhead Spawning Use Designation" maps. In many cases, more than one fish use occurs in the same water body. In this case, the use designation is based on the most sensitive species or life stage. The criteria applied to the most sensitive use will also protect the less sensitive uses present.

II. Information Sources

DEQ primarily relied on the Oregon Department of Fish and Wildlife (ODFW) for information on fish distribution and life stage timing. This information can be viewed on the internet at http://osu.orst.edu/dept/nrimp/information/fishdistdata.htm. The ODFW methodology for developing their database is described in the "1:24K Fish Habitat Distribution Development Project Procedures Manual" (Oregon Department of Fish and Wildlife, February 26, 2002). The database is the product of a multi-year effort by ODFW to develop consistent and comprehensive fish distribution data for a number of salmonid species. This database has recently been completed for all basins or sub-basins in Oregon that have anadromous fish. The distribution data represent known fish use based on documented observations, as well as the best professional judgment of local field biologists' as to where use is likely to occur based on suitable habitat (i.e., waters near areas of documented life stage presence on the same water body that have similar habitat features, such as flow volume, gradient, gravel size, and pool frequency, and no known obstructions or reasons why the use would not also be present in these waters). ODFW compiled and reviewed fish distribution information from a variety of sources, including state

and federal fisheries agencies, federal land management agencies, tribal entities, watershed councils and other interested public or private organizations. The ODFW fish distribution data reflect areas of fish use based on information collected over the past five life cycles for a particular species, which ranges from 15 to 35 years. In addition to spatial fish distribution data that describe where a life stage use is known or likely to occur, the ODFW database also includes information describing when a life stage use is known or likely to occur.

DEQ believes the ODFW database is scientifically sound and, together with the additional sources identified below, represents the best information readily available. The use of both data and professional judgment is appropriate because of the practical limitations of monitoring every stream mile, and because fish distributions vary from year to year for any given water body. Salmonid use designations should be based on fish presence studies over multiple years or best professional judgment about the interannual variability.

DEQ also relied upon the following sources of information to identify the proposed salmonid designated uses:

1. *Bull Trout Habitat Designation Report: Technical Work Group Recommendations* (DEQ, July 2003),
2. USFWS proposed critical habitat for bull trout spawning and juvenile rearing (67 FR 71236, November 29, 2002),
3. Personal communication with USFWS (Elizabeth Materna, October, 2003) on timing of Feeding, Migration and Over wintering (FMO) use in the upper N. Fork Sprague River,
4. Salmon Anchor Habitat Strategy for the Tillamook and Clatsop State Forests, (Ecotrust, 2002),
5. Ecotrust Salmon Anchor Habitat in the Siuslaw River sub-basin, and
6. Temperature data (ODEQ database, 2003).

A DEQ Technical Workgroup on Bull Trout was assembled specifically for the purpose of identifying current and potential bull trout habitat needed to allow survival and recovery of current populations of Bull trout in Oregon. This workgroup met for over one year and included bull trout experts from various agencies and organizations around the state. They identified current and potential year round bull trout use and current and potential bull trout migration. The workgroup also provided some estimates of migration timing.

III. Beneficial Use Designations for Fish Use (Uses that occur throughout the summer)

The following is a summary of the methods used to delineate the proposed fish use designations based on the information sources described above. This methodology was agreed upon by DEQ, EPA, US Fish and Wildlife Service and NOAA fisheries.

Bull Trout Juvenile Rearing and Spawning

The Bull trout juvenile rearing and spawning use was designated based on DEQ's *Bull Trout Habitat Designation Report: Technical Work Group Recommendations* (2003) and USFWS' proposed critical habitat for bull trout juvenile rearing and spawning. DEQ believes it is necessary and appropriate to designate areas identified as potential bull trout rearing and spawning habitat (identified in both of the above reports) in additional to where current use occurs because bull trout habitat in the State has been greatly reduced and fragmented, and because Bull trout are listed under the federal Endangered Species Act (ESA). The additional habitat will allow local populations to grow to the point they: (1) are reconnected with other local populations and with foraging habitats, (2) are large enough to withstand losses due to natural stresses and events (e.g., drought); and (3) maintain the genetic diversity to support a viable population.

DEQ proposed to designate bull trout rearing and spawning use for: (a) waters classified in DEQ's report as known bull trout spawning and juvenile rearing habitat (BTHD1) or potential bull trout spawning and juvenile rearing habitat necessary for long-term health and viability of bull trout populations (BTHD3), (b) any additional waters identified by the USFWS as proposed bull trout spawning and rearing critical habitat, and (c) waters upstream of these habitats that support the bull trout use by providing cold water to the areas where bull trout use occurs. Because USFWS' critical habitat designations are currently proposed and undergoing public review, DEQ may revise the Bull trout use designations in the future to be consistent with the final critical habitat designations.

Core Cold-Water Habitat

Core cold-water habitat designations identify and ensure the protection of colder water habitats that provide more optimal conditions for salmon and steelhead juvenile rearing and that protect summer bull trout sub-adult and adult foraging and migration. In addition, these areas would provide colder holding waters for pre-spawning adults.

The following indicators were used to identify where these colder water habitats occur or are likely to occur:

1. Waters where spring Chinook spawn during the late summer months (August 1 through September 15).
2. Waters having sub-adult and adult bull trout use where available timing data indicate that use occurs during July or August. The timing data used is primarily from ODFW. Where ODFW timing data was not available, DEQ used timing information provided by the DEQ Bull Trout Workgroup or personal communications with USFWS biologist if it was available.
3. Waters identified as "salmon anchor habitat" in Ecotrust (2000) and Dewberry (2003). These studies collected data on juvenile rearing density and identified areas of high production for Coho (salmon), steelhead (trout), and Chinook (salmon). DEQ designated

stream segments as core cold-water habitat in the North Coast Basin (an upper portion of the Necanicum River, Ecola Creek and Plympton Creek) and Mid-Coast Basin (Siuslaw River) based on this data.

4. Waters upstream of the areas identified in 1-3 above that also support salmon & steelhead rearing or provide cold water to these areas.

5. Waters where water temperature data that meets DEQ's data quality requirements indicate that current 7-day average maximum stream temperature for the warmest week of the year stays below 16°C.

If additional scientifically credible data becomes available in the future, DEQ may designate additional reaches as core cold-water habitat. This will require a rulemaking process to revise the beneficial use designations and an opportunity for public comment.

DEQ believes that sufficient cold-water habitat will be available to protect listed salmonid species due to the proposed designations of core cold-water habitat and due to the fact that additional colder water reaches (waters that stay 16°C or less) will be available in each sub-basin (4^{th} field HUC) in order to meet the 18° criteria throughout the extent of the waters designated for salmon and trout rearing use. In order to attain 18°C in the lower portions of sub-basins, most upstream waters must be colder than 18°C. Thus, the salmon and trout juvenile rearing and migration summer maximum criterion will, in effect, protect additional core cold-water habitats upstream.

Salmon and Trout Juvenile Rearing and Migration

DEQ proposes to designate "Salmon and Trout Rearing and Migration Use" for waters where:

1. salmon or steelhead rearing occurs in July or August;
2. rainbow or coastal cutthroat trout rearing occurs; and
3. all waters upstream of the waters identified above.

The data and information supporting these determinations is contained in the ODFW database on the distribution and life stage timing of salmonid fishes descried under the information sources section above. This use designation is also intended to protect for upstream migration of adult salmon and steelhead.

Salmon and Steelhead Migration Corridors

DEQ proposes to designate waters as "salmon and trout migration corridors" where ODFW distribution and timing information indicates there is migration use but no rearing use in July or August or information suggests a lower mainstem river is primarily a migration corridor during the period of summer maximum temperatures, and there is some evidence to suggest that temperatures would naturally reach 20°C/68°F. At this time DEQ is proposing migration corridor designation for the following reaches:

1. the lower Willamette River (from the mouth to river mile 50),
2. the lower John Day River (from the mouth to the confluence with the North Fork John Day River),

3. the Columbia River mainstem from the mouth to the Washington-Oregon border,
4. the Snake River from the Washington-Oregon border to Hells Canyon Dam, and
5. three small reaches of the lower Coos and Coquille Rivers.

Lahontan Cutthroat and Redband Trout Use

These two trout species are found in Eastern Oregon. ODFW has not updated their distribution database in this part of the State or collected life stage timing data for interior basins that do not have anadromous fish, so DEQ had to rely on other sources of information. Lahontan Cutthroat tout are limited to the Upper Quinn and Alvord Lakes basins in southeastern Oregon (USFWS, 1995; Dunham, 1999).

Redband trout occur throughout much of eastern Oregon (Behnke, 1992). Recent research done on the performance of redband trout done in the interior basins have shown they do quite well at somewhat warmer temperature than salmon and steelhead (Gamperl & Rodnick, 2003). The redband trout use designation is reserved at this time for basins that do not have steelhead because both redband trout and steelhead are subspecies of the species O. mykiss. In basins with steelhead, it is more difficult to determine with certainty which species are present. Also, because these fish can interbreed and because the research done on the performance of redband at warmer temperature was done in the interior basins, it is unknown whether redband in basins with steelhead have developed the same warmer water adaptations. Therefore, at present redband trout use designation is reserved for the native resident O. mykiss in the Goose and Summer Lakes, Malheur Lake, Malheur River, Powder, Burnt, Owyhee and Klamath basins. For more information see the DEQ report on Temperature Technical Advisory Committee (EQC Staff Report attachment C2, 2003).

In addition, redband trout use is designated for some tributaries to the lower Umatilla River and Middle Columbia River/Lake Wallula that do not have anadromous fish use according to ODFW's distribution data. These streams include: Willow Creek and its tributaries, several tributaries to the middle Columbia/Lake Wallula and Butter Creek, a tributary of the lower Umatilla River, as shown on the Umatilla Basin fish use designation map (Figure 310A). These streams were shown as having redband trout use in the draft proposed rule and DEQ received no comment to revise this use. Further information should be collected in the future to confirm the appropriate fish use for these streams.

Cool Water Species

There are a limited number of streams or stream reaches within the anadromous basins of the State that either have no salmonid fish use during the warmest part of the summer (July or August). If ODFW information is available that shows a stream reach has no salmonid fish use (rearing or migration) during July or August, it may be designated for cool water species. Cool water fish use designation is proposed for the following reaches:

a. the mainstem Long Tom river below Fern Ridge reservoir (ODFW database, Personal communication with ODFW biologist, 2003);

b. Rickreall Creek (EQC Report, October 1997 and attached letters from ODFW); and
c. Butter Creek, Willow Creek, and additional small tributaries to the mid Columbia River/Lake Walula (ODFW database).

In the non-anadromous basins there are additional streams or stream reaches designated for cool water fish use. Cool water fish use is currently designated for reaches of the lower Owyhee, Malheur and Klamath Rivers and for the Lost River (Klamath basin). There are more streams in the interior lakes basins of Oregon that have no salmonid use or no salmonid use during the summer months, but the distribution of the redband trout is not as readily available. DEQ proposing redband trout and cool water fish uses for these basins according to the best information we have readily available (Behnke, 1992; ODEQ, 2003; USFWS, 1998). Where information is not available, we are proposing the more sensitive redband trout use. Additional information needs to be assembled for these basins and when this is done, these use designations will be corrected accordingly.

Borax Lake Chub

The Borax Lake Chub are located in a very limited area in the Alvord Lake Subbasin in the waters associated with Borax Lake and Lower Borax Lake in Harney County.

IV. Beneficial Use Designations for Salmon & Steelhead Spawning Through Emergence

DEQ considered identifying each different combination of species locations and time periods where the ODFW database shows salmon or steelhead spawning through emergence occurs. However, this resulted in over 30 different spawning date ranges for just one basin. Because this approach seemed overly complicated and difficult to implement, the interagency team considered ways we could simplify our method for designating spawning use time periods and still protect this use. After reviewing the timing information for all salmon species and steelhead, we agreed on the approach described below.

1. In waters designated for salmon and trout rearing use during the summer months:
    a. Spawning through emergence use applies from October 15 through May 15 to reaches with fall spawners (Chinook, Coho or chum), or a combination of fall and spring (steelhead) spawners.
    b. Spawning through emergence use applies from January 1 to May 15 to reaches that have only steelhead spawning use.
2. In waters designated as core cold-water habitats, spawning may begin earlier and/or emergence may end later. The above spawning through emergence dates apply unless they are extended as follows:
    a. Spawning use for Chinook salmon begins 2 weeks after the earliest spawning date in the timing unit for that species according to the ODFW timing tables, but no later than October 15. If the initial spawning date is identified as "peak use," there is no 2 week

delay.

b. Emergence use for steelhead spawning reaches ends June 15.

3. In waters designated as migration corridors, the best available site specific information will be used to determine dates of spawning use. This occurs in only 2 locations.

a. In the Columbia River mainstem, chum salmon spawning use dates are based on site specific information available from ODFW.

b. In the Snake River mainstem below Hell's Canyon dam, fall Chinook spawning use dates are based on site specific information assembled during the development of the temperature TMDL.

The rationale for the two week delay after the spawning start date in 2a above is that the date shown in the ODFW timing tables applies to a "timing unit," which in many cases is fairly large. The spawning criterion will apply throughout the designated reach the date this use begins, yet it is most likely that the earliest spawning begins in cooler upstream waters, tributaries or springs. Also, the first 2 weeks of is often identified as "lesser use" by ODFW, meaning a few fish are beginning to spawn at this time, or perhaps in some years, but the bulk of them spawn during the "peak use" time.

The later emergence end data for steelhead in 2B above is used because in these colder waters, steelhead spawning and emergence typically occurs later. Although steelhead fry may emerge even later than June 15 in some waters, those waters are typically a colder upstream (i.e., high elevation) portion of where this use is designated, or in cold spring waters. In order to attain the spawning criterion (i.e., 13°C/55°F) on June 15 in the downstream extent of spawning reaches, temperatures would remain colder in the upstream waters and therefore would not likely reach 13°C/55°F until later in the year.

The reasons for using site specific timing information for spawning through emergence in the migration corridors as described in 3 above, is that there are a limited number of spawning reaches in these larger mainstem rivers, they are shorter segments (thus no need for the 2 weeks delay for upstream/downstream variability), they each have spawning by only a single species, and there is more site specific timing information available.

V. References

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Ecotrust. 2000. A Salmon Anchor Habitat Strategy for the Tillamook and Clatsop State Forests. Portland, Oregon.

Dewberry, T.C. 2003. Development and Application of Anchor Habitat Approaches to Salmon Conservation: A synthesis of data and observations from the Siuslaw watershed, coastal Oregon. Ecotrust, Portland, Oregon.

Dunham, J. 1999. Stream temperature criteria for Oregon's Lahontan cutthroat trout, *Oncorhynchus clarki henshawi*, Final Report to DEQ. Portland, Oregon.

Gamperl, A.K. and K. J. Rodnick. 2003. Metabolic and Thermal Physiology of Eastern Oregon Redband Trout: Recommendations for Appropriate Numeric Temperature Criteria, Final Report. to the Oregon Department of Environmental Quality. Portland, Oregon.

ODEQ. 2003. Bull trout Habitat Designation: Technical Work Group Recommendations. Portland, Oregon.

ODEQ. 2003. Draft Alvord Lake subbasin TMDL.

ODEQ. 2003. Snake River – Hells Canyon Total Maximum Daily Load. Pendleton, Oregon.

ODFW, 2003. Fish life stage distribution and timing database. Portland, Oregon.

USFWS. 1995. Recover Plan for the Lahontan Cutthroat Trout. Portland, Oregon.

USFWS. 1998. Recovery Plan for the Threatened and Rare Native Fishes of the Warner Basin and Alkali Subbasin. Portland, Oregon.

Table 101A

Designated Beneficial Uses
Mainstem Columbia River
(340-41-0101)

Beneficial Uses	Columbia River Mouth to RM 86	Columbia River RM 86 to 309
Public Domestic Water Supply[1]	X	X
Private Domestic Water Supply[1]	X	X
Industrial Water Supply	X	X
Irrigation	X	X
Livestock Watering	X	X
Fish & Aquatic Life[2]	X	X
Wildlife & Hunting	X	X
Fishing	X	X
Boating	X	X
Water Contact Recreation	X	X
Aesthetic Quality	X	X
Hydro Power		X
Commercial Navigation & Transportation	X	X

[1] With adequate pretreatment and natural quality that meets drinking water standards.

[2] See also Table 101B for fish use designations for this river.

Table produced November, 2003

Table 121A

Designated Beneficial Uses
Mainstem Snake River
(340-41-0120)

Beneficial Uses	Snake River RM 176 to 409
Public Domestic Water Supply[1]	X
Private Domestic Water Supply[1]	X
Industrial Water Supply	X
Irrigation	X
Livestock Watering	X
Fish & Aquatic Life[2]	X
Wildlife & Hunting	X
Fishing	X
Boating	X
Water Contact Recreation	X
Aesthetic Quality	X
Hydro Power	X
Commercial Navigation & Transportation	X

[1] With adequate pretreatment and natural quality that meets drinking water standards.

[2] See also Table 102B for fish use designations for this river.

Table produced November, 2003

Table 130A

Designated Beneficial Uses
Deschutes Basin
(340-41-0130)

Beneficial Uses	Deschutes River Main Stem from Mouth to Pelton Regulating Dam	Deschutes River Main Stem from Pelton Regulating Dam to Bend Diversion Dam and for the Crooked River Main Stem	Deschutes River Main Stem above Bend Diversion Dan & for the Metolious River Main Stem	All Other Basin Stems
Public Domestic Water Supply[1]	X	X	X	X
Private Domestic Water Supply[1]	X	X	X	X
Industrial Water Supply	X	X	X	X
Irrigation	X	X	X	X
Livestock Watering	X	X	X	X
Fish & Aquatic Life[2]	X	X	X	X
Wildlife & Hunting	X	X	X	X
Fishing	X	X	X	X
Boating	X	X	X	X
Water Contact Recreation	X	X	X	X
Aesthetic Quality	X	X	X	X
Hydro Power		X		
Commercial Navigation & Transportation				

[1] With adequate pretreatment (filtration and disinfection) and natural quality to meet drinking water standards.

[2] See also Figures 130A and 130B for fish use designations for this basin.

Table produced November, 2003

Table 141A

Designated Beneficial Uses
Goose and Summer Lakes Basin
(340-41-0140)

Beneficial Uses	Goose Lake	Freshwater Lakes & Reservoirs	Highly Alkaline & Saline Lakes	Freshwater Streams
Public Domestic Water Supply[1]		X		X
Private Domestic Water Supply[1]		X		X
Industrial Water Supply		X	X	X
Irrigation		X		X
Livestock Watering	X	X		X
Fish & Aquatic Life[2]	X	X	X	X
Wildlife & Hunting	X	X	X	X
Fishing	X	X	X	X
Boating	X	X	X	X
Water Contact Recreation	X	X	X	X
Aesthetic Quality	X	X	X	X
Hydro Power				
Commercial Navigation & Transportation				

[1] With adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards.

[2] See also Table 140B for fish use designations for this basin.

Table produced November, 2003

Table 151A

Designated Beneficial Uses
Grande Ronde Basin
(340-41-0151)

Beneficial Uses	Main Stem Grande Ronde River (RM 39 to 165)	All Other Basin Waters
Public Domestic Water Supply[1]	X	X
Private Domestic Water Supply[1]	X	X
Industrial Water Supply	X	X
Irrigation	X	X
Livestock Watering	X	X
Fish & Aquatic Life[2]	X	X
Wildlife & Hunting	X	X
Fishing	X	X
Boating	X	X
Water Contact Recreation	X	X
Aesthetic Quality	X	X
Hydro Power	X	X
Commercial Navigation & Transportation		

[1] With adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards.

[2] See also Figures 151A and 151B for fish use designations for this basin.

Table produced November, 2003

Table 160A

Designated Beneficial Uses
Hood Basin
(340-41-0160)

Beneficial Uses	Hood River Basin Streams
Public Domestic Water Supply[1]	X
Private Domestic Water Supply[1]	X
Industrial Water Supply	X
Irrigation	X
Livestock Watering	X
Fish & Aquatic Life[2]	X
Wildlife & Hunting	X
Fishing	X
Boating	X
Water Contact Recreation	X
Aesthetic Quality	X
Hydro Power	X
Commercial Navigation & Transportation	
[1] With adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards.	
[2] See also Figures 160A and 160B for fish use designations for this basin.	

Table produced November, 2003

Table 170A

Designated Beneficial Use
John Day Basin
(340-41-0170)

Beneficial Uses	John Day River & All Tributaries
Public Domestic Water Supply[1]	X
Private Domestic Water Supply[1]	X
Industrial Water Supply	X
Irrigation	X
Livestock Watering	X
Fish & Aquatic Life[2]	X
Wildlife & Hunting	X
Fishing	X
Boating	X
Water Contact Recreation	X
Aesthetic Quality	X
Hydro Power	
Commercial Navigation & Transportation	
[1] With adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards.	
[2] See also Figures 170A and 170B for fish use designations for this basin.	

Table produced November, 2003

Table 180A

Designated Beneficial Uses
Klamath Basin
(340-41-0180)

Beneficial Uses	Klamath River from Klamath Lake to Keno Dam (RM 255 to 232.5)	Lost River (Rm 5 to 65) & Lost River Diversion Channel	All Other Basin Waters
Public Domestic Water Supply[1]	X	X	X
Private Domestic Water Supply[1]	X	X	X
Industrial Water Supply	X	X	X
Irrigation	X	X	X
Livestock Watering	X	X	X
Fish & Aquatic Life[2]	X	X	X
Wildlife & Hunting	X	X	X
Fishing	X	X	X
Boating	X	X	X
Water Contact Recreation	X	X	X
Aesthetic Quality	X	X	X
Hydro Power	X		
Commercial Navigation & Transportation	X		

[1] With adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards.

[2] See also Table 180B for fish use designations for this basin.

Table produced November, 2003

Table 190A

Designated Beneficial Uses
Malheur Lake Basin
(340-41-0190)

Beneficial Uses	Natural Lakes	All Rivers & Tributaries
Public Domestic Water Supply[1]		X
Private Domestic Water Supply[1]		X
Industrial Water Supply		X
Irrigation	X	X
Livestock Watering	X	X
Fish & Aquatic Life[2]	X	X
Wildlife & Hunting	X	X
Fishing	X	X
Boating	X	X
Water Contact Recreation	X	X
Aesthetic Quality	X	X
Hydro Power		
Commercial Navigation & Transportation		

[1] With adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards.

[2] See also Table 190B for fish use designations for this basin.

Table produced November, 2003

Table 201A

Designated Beneficial Uses
Malheur River Basin
(340-41-0201)

Beneficial Uses	Malheur River (Namorf to Mouth) Willow Creek (Brogan to Mouth) Bully Creek (Reservoir to Mouth)	Willow Creek (Malheur Reservoir to Brogan) Malheur River (Beulah Dam & Warm Springs Dams to Namorf)	Reservoirs Malheur Bully Creek Beulah Warm Springs	Malheur River & Tributaries Upstream from Reservoirs
Public Domestic Water Supply[1]	X	X	X	X
Private Domestic Water Supply[1]	X	X	X	X
Industrial Water Supply	X	X	X	X
Irrigation	X	X	X	X
Livestock Watering	X	X	X	X
Fish & Aquatic Life[2]	X	X	X	X
Wildlife & Hunting	X	X	X	X
Fishing	X	X	X	X
Boating	X	X	X	X
Water Contact Recreation	X	X	X	X
Aesthetic Quality	X	X	X	X
Hydro Power				
Commercial Navigation & Transportation				

[1] With adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards.

[2] See also Table 201B for fish use designations for this basin.

Table produced November, 2003

Table 220A

Designated Beneficial Uses
Mid Coast Basin
(340-41-0220)

Beneficial Uses	Estuaries & Adjacent Marine Waters	Fresh Waters
Public Domestic Water Supply[1]		X
Private Domestic Water Supply[1]		X
Industrial Water Supply	X	X
Irrigation		X
Livestock Watering		X
Fish & Aquatic Life[2]	X	X
Wildlife & Hunting	X	X
Fishing	X	X
Boating	X	X
Water Contact Recreation	X	X
Aesthetic Quality	X	X
Hydro Power		X
Commercial Navigation & Transportation	X	
[1] With Adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards.		
[2] See also Figures 220A and 220B for fish use designations for this basin.		

Table produced November, 2003

Table 230A

Designated Beneficial Uses
North Coast Basin
(340-41-0230)

Beneficial Uses	Estuaries and Adjacent Marine Waters	All Other Steams & Tributaries Thereto
Public Domestic Water Supply[1]		X
Private Domestic Water Supply[1]		X
Industrial Water Supply	X	X
Irrigation		X
Livestock Watering		X
Fish & Aquatic Life[2]	X	X
Wildlife & Hunting	X	X
Fishing	X	X
Boating	X	X
Water Contact Recreation	X	X
Aesthetic Quality	X	X
Hydro Power		
Commercial Navigation & Transportation	X	

[1] With Adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards.

[2] See also Figures 230A and 230B for fish use designations for this basin.

Table produced November, 2003

Table 250A

Designated Beneficial Uses
Owyhee Basin
(340-41-0250)

Beneficial Uses	Owyhee River (RM 0-18)	Owyhee River (RM 18-Dam)	Reservoirs Antelope Cow Creek Owyhee	Owyhee River & Tributaries Upstream from Owyhee Reservior	Designated Scenic Waterway[3]
Public Domestic Water Supply[1]	X	X	X	X	X
Private Domestic Water Supply[1]	X	X	X	X	X
Industrial Water Supply	X	X	X	X	
Irrigation	X	X	X	X	
Livestock Watering	X	X	X	X	X
Fish & Aquatic Life[2]	X	X	X	X	X
Wildlife & Hunting	X	X	X	X	X
Fishing	X	X	X	X	X
Boating	X	X	X	X	X
Water Contact Recreation	X	X	X	X	X
Aesthetic Quality	X	X	X	X	X
Hydro Power					
Commercial Navigation & Transportation					

[1] With adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards.

[2] See also Table 250B for fish use designations for this basin.

[3] The mainstem of the South Fork of the Owyhee River from the Oregon-Idaho River border to Three Forks (the confluence of the North, Middle and South Forks Owyhee River) and the mainstem Owyhee River form Crooked Creek (river mile 22) to the mouth of Birch Creek (river mile 76) is designated by statute as a Scenic Waterway.

Table produced November, 2003

Table 260A

Designated Beneficial Uses
Powder/Burnt Basin
(340-41-0260)

Beneficial Uses	All Basin Waters
Public Domestic Water Supply[1]	X
Private Domestic Water Supply[1]	X
Industrial Water Supply	X
Irrigation	X
Livestock Watering	X
Fish & Aquatic Life[2]	X
Wildlife & Hunting	X
Fishing	X
Boating	X
Water Contact Recreation	X
Aesthetic Quality	X
Hydro Power	
Commercial Navigation & Transportation	
[1] With adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards.	
[2] See also Table 260B for fish use designations for this basin.	

Table produced November, 2003

Table 271A

Designated Beneficial Uses
Rogue Basin
(340-41-0271)

Beneficial Uses	Rogue River Estuary & Adjacent Marine Waters	Rogue River Main Stem from Estuary to Lost Creek Dam	Rogue River Main Stem above Lost Dam & Tributaries	Bear Creek Main Stem	All Other Tributaries to Rogue River & Bear Creek
Public Domestic Water Supply[1]		X	X	*	X
Private Domestic Water Supply[1]		X	X		X
Industrial Water Supply	X	X	X	X	X
Irrigation		X	X	X	X
Livestock Watering		X	X	X	X
Fish & Aquatic Life[2]	X	X	X	X	X
Wildlife & Hunting	X	X	X	X	X
Fishing	X	X	X	X	X
Boating	X	X	X	X	X
Water Contact Recreation	X	X	X	X	X
Aesthetic Quality	X	X	X	X	X
Hydro Power			X		X
Commercial Navigation & Transportation	X	X			

[1] With adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards

[2] See also Figures 271A and 271B for fish use designations for this basin.

* Designation for this use is presently under study

Table produced November, 2003

Table 286A

Designated Beneficial Uses
Sandy Basin
(340-41-0286)

Beneficial Uses	Streams Forming Waterfalls Near Columbia River Highway	Sandy River	Bull Run River and all Tributaries	All Other Tributaries to Sandy River
Public Domestic Water Supply[1]		X	X	X
Private Domestic Water Supply[1]		X		X
Industrial Water Supply		X		X
Irrigation		X		X
Livestock Watering		X		X
Fish & Aquatic Life[2]	X	X	X	X
Wildlife & Hunting	X	X		X
Fishing	X	X		X
Boating		X		X
Water Contact Recreation	X	X		X
Aesthetic Quality	X	X	X	X
Hydro Power		X	X	X
Commercial Navigation & Transportation				

[1] With adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards.

[2] See also Figures 286A and 286B for fish use designations for this basin.

Table produced November, 2003

Table 300A

Designated Beneficial Uses
South Coast Basin
(340-41-0300)

Beneficial Uses	Estuaries & Adjacent Maine Waters	All Steams & Tributaries Thereto
Public Domestic Water Supply[1]		X
Private Domestic Water Supply[1]		X
Industrial Water Supply	X	X
Irrigation		X
Livestock Watering		X
Fish & Aquatic Life[2]	X	X
Wildlife & Hunting	X	X
Fishing	X	X
Boating	X	X
Water Contact Recreation	X	X
Aesthetic Quality	X	X
Hydro Power		X
Commercial Navigation & Transportation	X	
[1] With adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards.		
[2] See also Figures 300A and 300B for fish use designations for this basin.		

Table produced November, 2003

Table 310A

Designated Beneficial Uses
Umatilla Basin
(340-41-0310)

Beneficial Uses	Umatilla Subbasin	Willow Creek Subbasin
Public Domestic Water Supply[1]	X	X
Private Domestic Water Supply[1]	X	X
Industrial Water Supply	X	X
Irrigation	X	X
Livestock Watering	X	X
Fish & Aquatic Life[2]	X	X
Wildlife & Hunting	X	X
Fishing	X	X
Boating	X	X (at mouth)
Water Contact Recreation	X	X
Aesthetic Quality	X	X
Hydro Power	X	X
Commercial Navigation & Transportation		

[1] With adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards.

[2] See also Figures 310A and 310B for fish use designations for this basin.

Table produced November, 2003

Table 320A

Designated Beneficial Uses
Umpqua Basin
(340-41-0320)

Beneficial Uses	Umpqua R. Estuary to Head of Tidewater & Adjacent Marine Waters	Umpqua R. Main from Head of Tidewater to Confluence of N. & S. Umpqua Rivers	North Umpqua River Main Stem	South Umpqua River Main Stem	All Other Tributaries to Umpqua, North & South Umpqua Rivers
Public Domestic Water Supply[1]		X	X	X	X
Private Domestic Water Supply[1]		X	X	X	X
Industrial Water Supply	X	X	X	X	X
Irrigation		X	X	X	X
Livestock Watering		X	X	X	X
Fish & Aquatic Life[2]	X	X	X	X	X
Wildlife & Hunting	X	X	X	X	X
Fishing	X	X	X	X	X
Boating	X	X	X	X	X
Water Contact Recreation	X	X	X	X	X
Aesthetic Quality	X	X	X	X	X
Hydro Power			X	X	X
Commercial Navigation & Transportation	X				

[1] With adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards.

[2] See also Figures 320A and 320B for fish use designations for this basin.

Table produced November, 2003

Table 330A

Designated Beneficial Uses
Walla Walla Basin
(340-41-0330)

Beneficial Uses	Walla Walla River Main Stem from Confluence of North & South Forks to State Line	All Other Basin Streams
Public Domestic Water Supply[1]	X	X
Private Domestic Water Supply[1]	X	X
Industrial Water Supply	X	
Irrigation	X	X
Livestock Watering	X	X
Fish & Aquatic Life[2]	X	X
Wildlife & Hunting	X	X
Fishing	X	X
Boating	X	X
Water Contact Recreation	X	X
Aesthetic Quality	X	X
Hydro Power		X
Commercial Navigation & Transportation		

[1] With adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards.

[2] See also Figures 310A and 310B for fish use designations for this basin.

Table produced November, 2003

Table 340A

Designated Beneficial Uses
Willamette Basin
(340-041-0340)

Beneficial Uses	Willamette River Tributaries						Main Stem Willamette River			
	Clackamas River	Molalla River	Santiam River	McKenzie River	Tualatin River	All Other Streams & Tributaries	Mouth to Willamette Falls, Including Multnomah Channel	Willamette Falls to Newberg	Newberg to Salem	Salem to Coast Fork
Public Domestic Water Supply[1]	X	X	X	X	X	X	X	X	X	X
Private Domestic Water Supply[1]	X	X	X	X	X	X	X	X	X	X
Industrial Water Supply	X	X	X	X	X	X	X	X	X	X
Irrigation	X	X	X	X	X	X	X	X	X	X
Livestock Watering	X	X	X	X	X	X	X	X	X	X
Fish & Aquatic Life[2]	X	X	X	X	X	X	X	X	X	X
Wildlife & Hunting	X	X	X	X	X	X	X	X	X	X
Fishing	X	X	X	X	X	X	X	X	X	X
Boating	X	X	X	X	X	X	X	X	X	X
Water Contact Recreation	X	X	X	X	X	X	X	X[3]	X	X
Aesthetic Quality	X	X	X	X	X	X	X	X	X	X
Hydro Power	X	X	X	X	X	X	X	X		
Commercial Navigation & Transportation							X	X	X	

[1] With adequate pretreatment and natural quality that meets drinking water standards.

[2] See also Figures 340A and 340B for fish use designations for this basin.

[3] Not to conflict with commercial activities in Portland Harbor.

Table produced November, 2003

TABLE 101B

BENEFICIAL USE DESIGNATIONS - FISH USES
MAINSTEM COLUMBIA RIVER

Geographic Extent of Use	**Salmon and Steelhead Migration Corridors (20°C)**	**Salmon and Steelhead Spawning through Fry Emergence**	**Shad and Sturgeon Spawning and Rearing**
Mainstem Columbia River			
Beacon Rock to Upstream of Ives Island (RM 141.5 to RM 143.5)		October 15 - March 31	
Columbia River, mouth to WA border (RM309)	X		
Columbia River (RM 147 to RM 203)			X

TABLE 121B

BENEFICIAL USE DESIGNATIONS - FISH USES
MAINSTEM SNAKE RIVER

Geographic Extent of Use	**Salmon and Steelhead Migration Corridors (20°C)**	**Redband or Lahontan Cutthroat Trout (20°C)**	**Salmon and Steelhead Spawning through Fry Emergence**
Mainstem Snake River			
Oregon/Washington Border to Hells Canyon Dam (RM 169 to RM 247.5)	X		October 23-April 15
Hells Canyon Dam to Idaho border (RM 247.5 to RM 409)		X	

TABLE 140B

BENEFICIAL USE DESIGNATIONS - FISH USES
GOOSE AND SUMMER LAKES BASIN, OREGON

Geographic Extent of Use	**Redband or Lahontan Cutthroat Trout (20°C)**	**Cool Water Species (No Salmonid Use)**
Summer Lake Subbasin		
Ft. Rock subbasin*: Silver Creek, Buck Creek and Bridge Creek	X	
Ft. Rock subbasin*: all other streams		X
Alkali Lake subbasin*		X
All other Summer Lake subbasin streams	X	
All other Goose and Summer Lakes basin streams within Oregon	X	
All other Highly Alkaline & Saline Lakes in this basin.		X

* These are 5th field HUC subbasins.

TABLE 190B

BENEFICIAL USE DESIGNATIONS - FISH USES
MALHEUR LAKE BASIN, OREGON

Geographic Extent of Use	**Redband or Lahontan Cutthroat Trout (20°C)**	**Borax Lake Chub**	**Cool Water Species (no salmonid use)**
Alvord Lake Subbasin			
Waters associated with Borax Lake and Lower Borax Lake, including lake outflows, Harney County, Oregon.		X	
Willow Creek from headwaters to the Willow Creek Well.	X		
Little Whitehorse Creek from headwaters to confluence with Whitehorse Creek	X		
Whitehorse Creek from headwaters to confluence with East Channel; including upper tributaries Little Whitehorse Creek, Cottonwood Creek and Doolittle Creek	X		
Antelope Creek from headwaters to confluence with unnamed tributary, approximately 4 RM upstream of confluence with Little Antelope Creek	X		
Denio Creek from headwaters to mouth	X		
Van Horn Creek from headwaters to mouth	X		
Group of streams NE of Alvord Desert: Pike Creek, Little Alvord Creek, Big Alvord Creek, Cottonwood, Willow Creek, Mesquito Creek, Bueno Vista Creek, and Little McCoy Creek	X		
Mann Creek from headwaters to mouth, House Creek from headwaters to mouth	X		
Little Trout Creek and Big Trout Creek from headwaters to confluences with Trout Creek	X		
Segment of Trout Creek from confluence with Big Trout Creek to confluence with Stoney Creek	X		
Pueblo Slough, from Tum-Tum Lake to Van Horn Creek			X (Alvord Chub)
Segment of Trout Creek from confluence with Stoney Creek to approx. 12 RM upstream of Alvord Lake; Segment of South Fork Trout Creek from confluence with Trout Creek upstream approx. 2 RM; Alvord Lake			X (Alvord Chub)

All other Alvord Lake subbasin waters			X (no fish use)
All other Malheur Lake Basin Waters (includes the Silver, Silvies, Harney-Malheur, Donner and Blitzen, Guano, Upper Quinn and Thousand-Virgin subbasins)	X		

TABLE 250B

BENEFICIAL USE DESIGNATIONS - FISH USES
OWYHEE BASIN, OREGON

Geographic Extent of Use	**Redband or Lahontan Cutthroat Trout (20°C)**	**Cool Water Species (No Salmonid Use)**
Lower Owyhee River Subbasin		
Mainstem Owyhee River from the mouth to the confluence with Snively Gulch (RM 18).		X
All other Lower Owyhee subbasin waters.	X	
All other Owyhee Basin waters within Oregon	X	

Table 101A

Designated Beneficial Uses
Mainstem Columbia River
(340-41-0101)

Beneficial Uses	Columbia River Mouth to RM 86	Columbia River RM 86 to 309
Public Domestic Water Supply[1]	X	X
Private Domestic Water Supply[1]	X	X
Industrial Water Supply	X	X
Irrigation	X	X
Livestock Watering	X	X
Fish & Aquatic Life[2]	X	X
Wildlife & Hunting	X	X
Fishing	X	X
Boating	X	X
Water Contact Recreation	X	X
Aesthetic Quality	X	X
Hydro Power		X
Commercial Navigation & Transportation	X	X

[1] With adequate pretreatment and natural quality that meets drinking water standards.

[2] See also Table 101B for fish use designations for this river.

Table produced November, 2003

Table 121A

Designated Beneficial Uses
Mainstem Snake River
(340-41-0120)

Beneficial Uses	Snake River RM 176 to 409
Public Domestic Water Supply[1]	X
Private Domestic Water Supply[1]	X
Industrial Water Supply	X
Irrigation	X
Livestock Watering	X
Fish & Aquatic Life[2]	X
Wildlife & Hunting	X
Fishing	X
Boating	X
Water Contact Recreation	X
Aesthetic Quality	X
Hydro Power	X
Commercial Navigation & Transportation	X

[1] With adequate pretreatment and natural quality that meets drinking water standards.

[2] See also Table 102B for fish use designations for this river.

Table produced November, 2003

Table 130A

Designated Beneficial Uses
Deschutes Basin
(340-41-0130)

Beneficial Uses	Deschutes River Main Stem from Mouth to Pelton Regulating Dam	Deschutes River Main Stem from Pelton Regulating Dam to Bend Diversion Dam and for the Crooked River Main Stem	Deschutes River Main Stem above Bend Diversion Dan & for the Metolious River Main Stem	All Other Basin Stems
Public Domestic Water Supply[1]	X	X	X	X
Private Domestic Water Supply[1]	X	X	X	X
Industrial Water Supply	X	X	X	X
Irrigation	X	X	X	X
Livestock Watering	X	X	X	X
Fish & Aquatic Life[2]	X	X	X	X
Wildlife & Hunting	X	X	X	X
Fishing	X	X	X	X
Boating	X	X	X	X
Water Contact Recreation	X	X	X	X
Aesthetic Quality	X	X	X	X
Hydro Power		X		
Commercial Navigation & Transportation				

[1] With adequate pretreatment (filtration and disinfection) and natural quality to meet drinking water standards.

[2] See also Figures 130A and 130B for fish use designations for this basin.

Table produced November, 2003

Table 141A

Designated Beneficial Uses
Goose and Summer Lakes Basin
(340-41-0140)

Beneficial Uses	Goose Lake	Freshwater Lakes & Reservoirs	Highly Alkaline & Saline Lakes	Freshwater Streams
Public Domestic Water Supply[1]		X		X
Private Domestic Water Supply[1]		X		X
Industrial Water Supply		X	X	X
Irrigation		X		X
Livestock Watering	X	X		X
Fish & Aquatic Life[2]	X	X	X	X
Wildlife & Hunting	X	X	X	X
Fishing	X	X	X	X
Boating	X	X	X	X
Water Contact Recreation	X	X	X	X
Aesthetic Quality	X	X	X	X
Hydro Power				
Commercial Navigation & Transportation				

[1] With adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards.

[2] See also Table 140B for fish use designations for this basin.

Table produced November, 2003

Table 151A

Designated Beneficial Uses
Grande Ronde Basin
(340-41-0151)

Beneficial Uses	Main Stem Grande Ronde River (RM 39 to 165)	All Other Basin Waters
Public Domestic Water Supply[1]	X	X
Private Domestic Water Supply[1]	X	X
Industrial Water Supply	X	X
Irrigation	X	X
Livestock Watering	X	X
Fish & Aquatic Life[2]	X	X
Wildlife & Hunting	X	X
Fishing	X	X
Boating	X	X
Water Contact Recreation	X	X
Aesthetic Quality	X	X
Hydro Power	X	X
Commercial Navigation & Transportation		

[1] With adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards.

[2] See also Figures 151A and 151B for fish use designations for this basin.

Table produced November, 2003

Table 160A

Designated Beneficial Uses
Hood Basin
(340-41-0160)

Beneficial Uses	Hood River Basin Streams
Public Domestic Water Supply[1]	X
Private Domestic Water Supply[1]	X
Industrial Water Supply	X
Irrigation	X
Livestock Watering	X
Fish & Aquatic Life[2]	X
Wildlife & Hunting	X
Fishing	X
Boating	X
Water Contact Recreation	X
Aesthetic Quality	X
Hydro Power	X
Commercial Navigation & Transportation	
[1] With adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards.	
[2] See also Figures 160A and 160B for fish use designations for this basin.	

Table produced November, 2003

Table 170A

Designated Beneficial Use
John Day Basin
(340-41-0170)

Beneficial Uses	John Day River & All Tributaries
Public Domestic Water Supply[1]	X
Private Domestic Water Supply[1]	X
Industrial Water Supply	X
Irrigation	X
Livestock Watering	X
Fish & Aquatic Life[2]	X
Wildlife & Hunting	X
Fishing	X
Boating	X
Water Contact Recreation	X
Aesthetic Quality	X
Hydro Power	
Commercial Navigation & Transportation	

[1] With adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards.

[2] See also Figures 170A and 170B for fish use designations for this basin.

Table produced November, 2003

Table 180A

Designated Beneficial Uses
Klamath Basin
(340-41-0180)

Beneficial Uses	Klamath River from Klamath Lake to Keno Dam (RM 255 to 232.5)	Lost River (Rm 5 to 65) & Lost River Diversion Channel	All Other Basin Waters
Public Domestic Water Supply[1]	X	X	X
Private Domestic Water Supply[1]	X	X	X
Industrial Water Supply	X	X	X
Irrigation	X	X	X
Livestock Watering	X	X	X
Fish & Aquatic Life[2]	X	X	X
Wildlife & Hunting	X	X	X
Fishing	X	X	X
Boating	X	X	X
Water Contact Recreation	X	X	X
Aesthetic Quality	X	X	X
Hydro Power	X		
Commercial Navigation & Transportation	X		

[1] With adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards.

[2] See also Table 180B for fish use designations for this basin.

Table produced November, 2003

Table 190A

Designated Beneficial Uses
Malheur Lake Basin
(340-41-0190)

Beneficial Uses	Natural Lakes	All Rivers & Tributaries
Public Domestic Water Supply[1]		X
Private Domestic Water Supply[1]		X
Industrial Water Supply		X
Irrigation	X	X
Livestock Watering	X	X
Fish & Aquatic Life[2]	X	X
Wildlife & Hunting	X	X
Fishing	X	X
Boating	X	X
Water Contact Recreation	X	X
Aesthetic Quality	X	X
Hydro Power		
Commercial Navigation & Transportation		

[1] With adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards.

[2] See also Table 190B for fish use designations for this basin.

Table produced November, 2003

Table 201A

Designated Beneficial Uses
Malheur River Basin
(340-41-0201)

Beneficial Uses	Malheur River (Namorf to Mouth) Willow Creek (Brogan to Mouth) Bully Creek (Reservoir to Mouth)	Willow Creek (Malheur Reservoir to Brogan) Malheur River (Beulah Dam & Warm Springs Dams to Namorf)	Reservoirs Malheur Bully Creek Beulah Warm Springs	Malheur River & Tributaries Upstream from Reservoirs
Public Domestic Water Supply[1]	X	X	X	X
Private Domestic Water Supply[1]	X	X	X	X
Industrial Water Supply	X	X	X	X
Irrigation	X	X	X	X
Livestock Watering	X	X	X	X
Fish & Aquatic Life[2]	X	X	X	X
Wildlife & Hunting	X	X	X	X
Fishing	X	X	X	X
Boating	X	X	X	X
Water Contact Recreation	X	X	X	X
Aesthetic Quality	X	X	X	X
Hydro Power				
Commercial Navigation & Transportation				

[1] With adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards.

[2] See also Table 201B for fish use designations for this basin.

Table produced November, 2003

Table 220A

Designated Beneficial Uses
Mid Coast Basin
(340-41-0220)

Beneficial Uses	Estuaries & Adjacent Marine Waters	Fresh Waters
Public Domestic Water Supply[1]		X
Private Domestic Water Supply[1]		X
Industrial Water Supply	X	X
Irrigation		X
Livestock Watering		X
Fish & Aquatic Life[2]	X	X
Wildlife & Hunting	X	X
Fishing	X	X
Boating	X	X
Water Contact Recreation	X	X
Aesthetic Quality	X	X
Hydro Power		X
Commercial Navigation & Transportation	X	

[1] With Adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards.

[2] See also Figures 220A and 220B for fish use designations for this basin.

Table produced November, 2003

Table 230A

Designated Beneficial Uses
North Coast Basin
(340-41-0230)

Beneficial Uses	Estuaries and Adjacent Marine Waters	All Other Steams & Tributaries Thereto
Public Domestic Water Supply[1]		X
Private Domestic Water Supply[1]		X
Industrial Water Supply	X	X
Irrigation		X
Livestock Watering		X
Fish & Aquatic Life[2]	X	X
Wildlife & Hunting	X	X
Fishing	X	X
Boating	X	X
Water Contact Recreation	X	X
Aesthetic Quality	X	X
Hydro Power		
Commercial Navigation & Transportation	X	

[1] With Adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards.

[2] See also Figures 230A and 230B for fish use designations for this basin.

Table produced November, 2003

Table 250A

Designated Beneficial Uses
Owyhee Basin
(340-41-0250)

Beneficial Uses	Owyhee River (RM 0-18)	Owyhee River (RM 18-Dam)	Reservoirs Antelope Cow Creek Owyhee	Owyhee River & Tributaries Upstream from Owyhee Reservior	Designated Scenic Waterway[3]
Public Domestic Water Supply[1]	X	X	X	X	X
Private Domestic Water Supply[1]	X	X	X	X	X
Industrial Water Supply	X	X	X	X	
Irrigation	X	X	X	X	
Livestock Watering	X	X	X	X	X
Fish & Aquatic Life[2]	X	X	X	X	X
Wildlife & Hunting	X	X	X	X	X
Fishing	X	X	X	X	X
Boating	X	X	X	X	X
Water Contact Recreation	X	X	X	X	X
Aesthetic Quality	X	X	X	X	X
Hydro Power					
Commercial Navigation & Transportation					

[1] With adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards.

[2] See also Table 250B for fish use designations for this basin.

[3] The mainstem of the South Fork of the Owyhee River from the Oregon-Idaho River border to Three Forks (the confluence of the North, Middle and South Forks Owyhee River) and the mainstem Owyhee River form Crooked Creek (river mile 22) to the mouth of Birch Creek (river mile 76) is designated by statute as a Scenic Waterway.

Table produced November, 2003

Table 260A

Designated Beneficial Uses
Powder/Burnt Basin
(340-41-0260)

Beneficial Uses	All Basin Waters
Public Domestic Water Supply[1]	X
Private Domestic Water Supply[1]	X
Industrial Water Supply	X
Irrigation	X
Livestock Watering	X
Fish & Aquatic Life[2]	X
Wildlife & Hunting	X
Fishing	X
Boating	X
Water Contact Recreation	X
Aesthetic Quality	X
Hydro Power	
Commercial Navigation & Transportation	

[1] With adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards.

[2] See also Table 260B for fish use designations for this basin.

Table produced November, 2003

Table 271A

Designated Beneficial Uses
Rogue Basin
(340-41-0271)

Beneficial Uses	Rogue River Estuary & Adjacent Marine Waters	Rogue River Main Stem from Estuary to Lost Creek Dam	Rogue River Main Stem above Lost Dam & Tributaries	Bear Creek Main Stem	All Other Tributaries to Rogue River & Bear Creek
Public Domestic Water Supply[1]		X	X	*	X
Private Domestic Water Supply[1]		X	X		X
Industrial Water Supply	X	X	X	X	X
Irrigation		X	X	X	X
Livestock Watering		X	X	X	X
Fish & Aquatic Life[2]	X	X	X	X	X
Wildlife & Hunting	X	X	X	X	X
Fishing	X	X	X	X	X
Boating	X	X	X	X	X
Water Contact Recreation	X	X	X	X	X
Aesthetic Quality	X	X	X	X	X
Hydro Power			X		X
Commercial Navigation & Transportation	X	X			

[1] With adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards

[2] See also Figures 271A and 271B for fish use designations for this basin.

* Designation for this use is presently under study

Table produced November, 2003

Table 286A

Designated Beneficial Uses
Sandy Basin
(340-41-0286)

Beneficial Uses	Streams Forming Waterfalls Near Columbia River Highway	Sandy River	Bull Run River and all Tributaries	All Other Tributaries to Sandy River
Public Domestic Water Supply[1]		X	X	X
Private Domestic Water Supply[1]		X		X
Industrial Water Supply		X		X
Irrigation		X		X
Livestock Watering		X		X
Fish & Aquatic Life[2]	X	X	X	X
Wildlife & Hunting	X	X		X
Fishing	X	X		X
Boating		X		X
Water Contact Recreation	X	X		X
Aesthetic Quality	X	X	X	X
Hydro Power		X	X	X
Commercial Navigation & Transportation				

[1] With adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards.

[2] See also Figures 286A and 286B for fish use designations for this basin.

Table produced November, 2003

Table 300A

Designated Beneficial Uses
South Coast Basin
(340-41-0300)

Beneficial Uses	Estuaries & Adjacent Maine Waters	All Steams & Tributaries Thereto
Public Domestic Water Supply[1]		X
Private Domestic Water Supply[1]		X
Industrial Water Supply	X	X
Irrigation		X
Livestock Watering		X
Fish & Aquatic Life[2]	X	X
Wildlife & Hunting	X	X
Fishing	X	X
Boating	X	X
Water Contact Recreation	X	X
Aesthetic Quality	X	X
Hydro Power		X
Commercial Navigation & Transportation	X	

[1] With adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards.

[2] See also Figures 300A and 300B for fish use designations for this basin.

Table produced November, 2003

Table 310A

Designated Beneficial Uses
Umatilla Basin
(340-41-0310)

Beneficial Uses	Umatilla Subbasin	Willow Creek Subbasin
Public Domestic Water Supply[1]	X	X
Private Domestic Water Supply[1]	X	X
Industrial Water Supply	X	X
Irrigation	X	X
Livestock Watering	X	X
Fish & Aquatic Life[2]	X	X
Wildlife & Hunting	X	X
Fishing	X	X
Boating	X	X (at mouth)
Water Contact Recreation	X	X
Aesthetic Quality	X	X
Hydro Power	X	X
Commercial Navigation & Transportation		

[1] With adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards.

[2] See also Figures 310A and 310B for fish use designations for this basin.

Table produced November, 2003

Table 320A

Designated Beneficial Uses
Umpqua Basin
(340-41-0320)

Beneficial Uses	Umpqua R. Estuary to Head of Tidewater & Adjacent Marine Waters	Umpqua R. Main from Head of Tidewater to Confluence of N. & S. Umpqua Rivers	North Umpqua River Main Stem	South Umpqua River Main Stem	All Other Tributaries to Umpqua, North & South Umpqua Rivers
Public Domestic Water Supply[1]		X	X	X	X
Private Domestic Water Supply[1]		X	X	X	X
Industrial Water Supply	X	X	X	X	X
Irrigation		X	X	X	X
Livestock Watering		X	X	X	X
Fish & Aquatic Life[2]	X	X	X	X	X
Wildlife & Hunting	X	X	X	X	X
Fishing	X	X	X	X	X
Boating	X	X	X	X	X
Water Contact Recreation	X	X	X	X	X
Aesthetic Quality	X	X	X	X	X
Hydro Power			X	X	X
Commercial Navigation & Transportation	X				

[1] With adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards.

[2] See also Figures 320A and 320B for fish use designations for this basin.

Table produced November, 2003

Table 330A

Designated Beneficial Uses
Walla Walla Basin
(340-41-0330)

Beneficial Uses	Walla Walla River Main Stem from Confluence of North & South Forks to State Line	All Other Basin Streams
Public Domestic Water Supply[1]	X	X
Private Domestic Water Supply[1]	X	X
Industrial Water Supply	X	
Irrigation	X	X
Livestock Watering	X	X
Fish & Aquatic Life[2]	X	X
Wildlife & Hunting	X	X
Fishing	X	X
Boating	X	X
Water Contact Recreation	X	X
Aesthetic Quality	X	X
Hydro Power		X
Commercial Navigation & Transportation		

[1] With adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards.

[2] See also Figures 310A and 310B for fish use designations for this basin.

Table produced November, 2003

Table 340A

Designated Beneficial Uses
Willamette Basin
(340-041-0340)

Beneficial Uses	Willamette River Tributaries						Main Stem Willamette River			
	Clackamas River	Molalla River	Santiam River	McKenzie River	Tualatin River	All Other Streams & Tributaries	Mouth to Willamette Falls, Including Multnomah Channel	Willamette Falls to Newberg	Newberg to Salem	Salem to Coast Fork
Public Domestic Water Supply[1]	X	X	X	X	X	X	X	X	X	X
Private Domestic Water Supply[1]	X	X	X	X	X	X	X	X	X	X
Industrial Water Supply	X	X	X	X	X	X	X	X	X	X
Irrigation	X	X	X	X	X	X	X	X	X	X
Livestock Watering	X	X	X	X	X	X	X	X	X	X
Fish & Aquatic Life[2]	X	X	X	X	X	X	X	X	X	X
Wildlife & Hunting	X	X	X	X	X	X	X	X	X	X
Fishing	X	X	X	X	X	X	X	X	X	X
Boating	X	X	X	X	X	X	X	X	X	X
Water Contact Recreation	X	X	X	X	X	X	X	X[3]	X	X
Aesthetic Quality	X	X	X	X	X	X	X	X	X	X
Hydro Power	X	X	X	X	X	X	X	X		
Commercial Navigation & Transportation							X	X	X	

[1] With adequate pretreatment and natural quality that meets drinking water standards.

[2] See also Figures 340A and 340B for fish use designations for this basin.

[3] Not to conflict with commercial activities in Portland Harbor.

Table produced November, 2003

TABLE 101B

BENEFICIAL USE DESIGNATIONS - FISH USES
MAINSTEM COLUMBIA RIVER

Geographic Extent of Use	**Salmon and Steelhead Migration Corridors (20°C)**	**Salmon and Steelhead Spawning through Fry Emergence**	**Shad and Sturgeon Spawning and Rearing**
Mainstem Columbia River			
Beacon Rock to Upstream of Ives Island (RM 141.5 to RM 143.5)		October 15 - March 31	
Columbia River, mouth to WA border (RM309)	X		
Columbia River (RM 147 to RM 203)			X

TABLE 121B

BENEFICIAL USE DESIGNATIONS - FISH USES
MAINSTEM SNAKE RIVER

Geographic Extent of Use	**Salmon and Steelhead Migration Corridors (20°C)**	**Redband or Lahontan Cutthroat Trout (20°C)**	**Salmon and Steelhead Spawning through Fry Emergence**
Mainstem Snake River			
Oregon/Washington Border to Hells Canyon Dam (RM 169 to RM 247.5)	X		October 23-April 15
Hells Canyon Dam to Idaho border (RM 247.5 to RM 409)		X	

TABLE 140B

BENEFICIAL USE DESIGNATIONS - FISH USES
GOOSE AND SUMMER LAKES BASIN, OREGON

Geographic Extent of Use	**Redband or Lahontan Cutthroat Trout (20°C)**	**Cool Water Species (No Salmonid Use)**
Summer Lake Subbasin		
Ft. Rock subbasin*: Silver Creek, Buck Creek and Bridge Creek	X	
Ft. Rock subbasin*: all other streams		X
Alkali Lake subbasin*		X
All other Summer Lake subbasin streams	X	
All other Goose and Summer Lakes basin streams within Oregon	X	
All other Highly Alkaline & Saline Lakes in this basin.		X

* These are 5th field HUC subbasins.

12/4-5/03 EQC Meeting, Item D handout

State of Oregon
Department of Environmental Quality Memorandum

To: Environmental Quality Commission **Date:** November 25, 2003

From: Stephanie Hallock

Subject: Additional materials for Agenda Item D: Water Quality Standards, Including Temperature Criteria

Attached are several revisions to the proposed water quality standards rules (Division 41) that you will consider for adoption on December 4, 2003. Below is a brief explanation of each change being submitted for your consideration.

1) OAR 340-041-0016, Dissolved Oxygen. Subsection (1)(a)(C) has been added. The revised wording is highlighted on the attached Page 22 of the rules. The 8.0 mg/l intergravel dissolved oxygen (IGDO) criterion for salmonid spawning, which was in the draft proposed rule, was unintentionally deleted with the paragraph below it when revising the draft rules. Therefore, this provision is proposed to be restored to the final rule.

2) OAR 340-041-0028, Temperature. Subsection (4) (f) has been revised as shown on the attached Page 26 of the rules. The revised portion of the rule affects three stream reaches in the State where bull trout spawning occurs below reservoirs. The draft rule language requires that during bull trout spawning through emergence, stream temperature may not be warmed more than 0.3° C, regardless of the background temperature of the stream. In considering public comment and in discussions with EPA and USFWS (the agency that will do the ESA consultation for bull trout), we concluded that the 0.3° limit is likely more stringent than necessary when stream temperatures are below 9°C. The proposed revised language states that when the ambient stream temperature is less than 9°C the allowable increase for the reservoirs goes up to 1.0 degree Celsius. The 9° C number is identified in the EPA Region 10 Temperature Criteria Guidance and recognized by the USFWS as the temperature that is protective of bull trout spawning. The proposed revised language is more consistent with the EPA guidance and with the fall/winter cold water protection provision for salmon and steelhead spawning found in subsection (11)(b), which also allows a 1° C increase when ambient temperatures are below the spawning criterion.

3) Fish Use and Spawning Use Designations

A: Changes to use designations based on temperature data.

ODEQ, in agreement with an interagency work group, designated some reaches "core cold-water habitat use" based on temperature data showing the streams meet 16° C as a

7-day average daily maximum throughout the summer. An error that occurred in compiling and sending this information to DEQ resulted in some stream reaches receiving the wrong use designation. To correct the error, some streams designated core cold-water habitat are now salmon and trout rearing and migration, and visa versa. Because spawning date ranges are based partly on fish use designations, the spawning use designation maps also changed in some cases. To correct these errors the fish use designation maps for the Willamette, South Coast, and Rogue basins have been revised (attached). The table below lists each stream reach that was affected and the correction that has been made.

Basin	Subbasin	Stream	Changed to Core Cold-Water Habitat Use	Changed to Salmon & Trout Rearing & Migration Use	Spawning date change
Willamette Figure 340A	Middle Willamette	Champoeg Creek, East & West Champoeg Creeks, Mission Creek, Murphy Creek, Case Creek		X	None
Willamette Figure 340A	Yamhill	Maroney Creek	X		None
South Coast Figure 300A, 300B	Sixes	Anvil Creek (tributary to Elk River)	X		Lowest reach changed from Oct 15-May 15 to Oct 15-June 15
Rogue Figure 271A, 271B	Lower Rogue	Arrastra Fork Mule Creek, Mule Creek, West Fork Mule Creek; South Fork Lobster Creek and its unnamed tribs		X	Arrastra and West Forks Mule Cr changed from Oct 15-June 15 to Oct 15-May 15; the upper reach of Mule Creek and S F Lobster Creek and tributaries changed from Jan 1-June 15 to Jan 1-May 15
Rogue Figure 271A, 271B	Applegate	Powell Creek, Wallow Creek, Honeysuckle Creek		X	Powell Creek changed from Jan 1-June 15 to Jan 1-May 15
Rogue Figure 271A, 271B	Illinois	East Fork Indigo Creek	X		None

B: Separating Lahontan cutthroat and redband trout reaches in the Malheur Lake Basin.

Beneficial Use Designations – Fish Use Table 190B for the Malheur Lake basin showed redband trout and Lahontan cutthroat trout in one use category. Lahontan cutthroat trout are a T&E species under the federal ESA and USFWS requested that we identify spawning use times for these fish in order to clarify when dissolved oxygen criteria for spawning will apply. In order to do this, reaches with Lahontan cutthroat trout are now identified separately from redband and hybrid trout on the table and the spawning use dates for Lahontan trout are specified in a footnote to the table. The spawning dates were provided by the US Fish & Wildlife Service. The revised Beneficial Use Table 190B is attached (2 pages).

If you have any questions, please contact Mike Llewelyn, DEQ Water Quality Division Administrator, at 503-229-5324 or toll-free at 1-800-452-4011 ext. 5324 in the state of Oregon.

Waters of the State must be of sufficient quality to support aquatic species without detrimental changes in the resident biological communities.
Stat. Auth.: ORS 468.735
Stats. Implemented: ORS 468B.048
Hist.: DEQ 14-1991, f. & cert. ef. 8-13-91

340-041-0016

Dissolved Oxygen

(1) Dissolved oxygen (DO): No wastes may be discharged and no activities must be conducted that either alone or in combination with other wastes or activities will cause violation of the following standards: The changes adopted by the Commission on January 11, 1996, become effective July 1, 1996. Until that time, the requirements of this rule that were in effect on January 10, 1996, apply:

(a) For water bodies identified **as active spawning areas in the places and times indicated on the following Tables and Figures set out in OAR 340-041-0101 to OAR 340-041-0340: Tables 101B, 121B, 180B, 201B and 260B, and Figures 130B, 151B, 160B, 170B, 220B, 230B, 271B, 286B, 300B, 310B, 320B, and 340B, (as well as any active spawning area used by resident trout species),** the following criteria apply **during the applicable spawning through fry emergence periods set forth in the tables and figures**:

(A) The dissolved oxygen may not be less than 11.0 mg/l. However, if the minimum intergravel dissolved oxygen, measured as a spatial median, is 8.0 mg/l or greater, then the DO criterion is 9.0 mg/l;

(B) Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 11.0 mg/l or 9.0 mg/l criteria, dissolved oxygen levels must not be less than 95 percent of saturation;

(C) The spatial median intergravel dissolved oxygen concentration must not fall below 8.0 mg/l;

(b) For water bodies identified by the Department as providing cold-water aquatic life, the dissolved oxygen may not be less than 8.0 mg/l as an absolute minimum. Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 8.0 mg/l, dissolved oxygen may not be less than 90 percent of saturation. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen may not fall below 8.0 mg/l as a 30-day mean minimum, 6.5 mg/l as a seven-day minimum mean, and may not fall below 6.0 mg/l as an absolute minimum (Table 21);

(c) The seven-day-average maximum temperature of a stream identified as having salmon and trout rearing and migration use on subbasin maps set out at OAR 340-041-0101 to OAR 340-041-0340: Figures 130A, 151A, 160A, 170A, 220A, 230A, 271A, 286A, 300A, 310A, 320A, and 340A, may not exceed 18.0 degrees Celsius (64.4 degrees Fahrenheit);

(d) The seven-day-average maximum temperature of a stream identified as having a migration corridor use on subbasin maps and tables OAR 340-041-0101 to OAR 340-041-0340: Tables 101B, and 121B, and Figures 151A, 170A, and 340A, may not exceed 20.0 degrees Celsius (68.0 degrees Fahrenheit). In addition, these water bodies must have cold water refugia that is sufficiently distributed so as to allow salmon and steelhead migration without significant adverse effects from higher water temperatures elsewhere in the water body. Finally, the seasonal thermal pattern in Columbia and Snake Rivers must reflect the natural seasonal thermal pattern;

(e) The seven-day-average maximum temperature of a stream identified as having Lahontan cutthroat trout or redband trout use on subbasin maps and tables set out in OAR 340-041-0101 to OAR 340-041-0340: Tables 120B, 140B, 190B, and 250B, and Figures 180A, 201A, and 260A may not exceed 20.0 degrees Celsius (68.0 degrees Fahrenheit);

(f) The seven-day-average maximum temperature of a stream identified as having bull trout spawning and juvenile rearing use on subbasin maps set out at OAR 340-041-0101 to OAR 340-041-0340: Figures 130B, 151B, 160B, 170B, 180A, 201A, 260A, 310B, and 340B, may not exceed 12.0 degrees Celsius (53.6 degrees Fahrenheit). From August 15 through May 15, in bull trout spawning waters below Clear Creek and Mehlhorn reservoirs on upper Clear Creek (Pine subbasin), below Laurance Lake on the Middle Fork Hood River and below Carmen reservoir on the upper McKenzie River there may be no more than a 0.3 degrees Celsius (0.5 Fahrenheit) increase between the water temperature immediately upstream of the reservoir and the water temperature immediately downstream of the spillway when the ambient seven-day-average maximum stream temperature is 9°C or greater, and no more than a 1.0 degree Celsius (1.8 degrees Fahrenheit) increase when the seven-day-average stream temperature is less than 9 degrees Celsius.;

(5) Unidentified Tributaries. For waters that are not identified on the fish use maps and tables referenced in section (4) of this rule, the applicable criteria for these waters are the same criteria as is applicable to the nearest downstream water body depicted on the applicable map.

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Deleted: when bull trout are spawning or during egg incubation

TABLE 190B

BENEFICIAL USE DESIGNATIONS - FISH USES
MALHEUR LAKE BASIN, OREGON

Geographic Extent of Use	**Redband and Hybrid Trout (20°C)**	**Lahontan Trout* (20°C)**	**Borax Lake Chub**	**Cool Water Species (no salmonid use)**
Alvord Lake Subbasin				
Waters associated with Borax Lake and Lower Borax Lake, including lake outflows, Harney County, Oregon.			X	
Willow Creek from headwaters to the Willow Creek Well.		X		
Little Whitehorse Creek from headwaters to confluence with Whitehorse Creek		X		
Whitehorse Creek from headwaters to confluence with East Channel; including upper tributaries Little Whitehorse Creek, Cottonwood Creek and Doolittle Creek		X		
Antelope Creek from headwaters to confluence with unnamed tributary, approximately 4 RM upstream of confluence with Little Antelope Creek		X		
Denio Creek from headwaters to mouth		X		
Van Horn Creek from headwaters to mouth		X		
Group of streams NE of Alvord Desert: Pike Creek, Little Alvord Creek, Big Alvord Creek, Cottonwood, Willow Creek, Mesquito Creek, Bueno Vista Creek, and Little McCoy Creek		X		
Mann Creek from headwaters to mouth, House Creek from headwaters to mouth	X			
Little Trout Creek and Big Trout Creek from headwaters to confluences with Trout Creek	X			
Segment of Trout Creek from confluence with Big Trout Creek to confluence with Stoney Creek	X			
Pueblo Slough, from Tum-Tum Lake to Van Horn Creek				X (Alvord Chub)

Segment of Trout Creek from confluence with Stoney Creek to approximately 12 RM upstream of Alvord Lake; Segment of South Fork Trout Creek from confluence with Trout Creek upstream approximately 2 RM; Alvord Lake				X (Alvord Chub)
All other Alvord Lake subbasin waters				X (no fish use)
Upper Quinn Subbasin				
Indian Creek from approximately 1.3 RM below headwaters to approximately .25 RM below confluence with Spring Creek (approximately 5.1 RM total)	X			
Sage Creek from headwaters to mouth		X		
Line Canyon Creek from headwaters to mouth		X		
All other Upper Quinn subbasin waters				X
All other Malheur Lake Basin Waters (includes the Silver, Silvies, Harney-Malheur, Donner and Blitzen, Guano, and Thousand-Virgin subbasins)	X			

Table produced November, 2003

*Spawning in these reaches occurs April 1-July 15.

14/4/03 EQC Meeting

PROPOSED TYPO CORRECTION

Item 3

Handout

(b) Emergency Situations. The Director or a designee may, for a period of time no greater than 6 months, allow lower water quality without an antidegradation review under this rule in order to respond to public health and welfare emergencies (i.e., a significant threat of loss of life, personal injury or severe property damage); and

(c) Exceptions. Exceptions **authorized by the Commission under (9) of this rule.**

(6) High Quality Waters Policy: Where the existing water quality meets or exceeds those levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, and other designated beneficial uses, that level of water quality **must** be maintained and protected. **However,** the Environmental Quality Commission, after full satisfaction of the intergovernmental coordination and public participation provisions of the continuing planning process, and with full consideration of sections (2) and **(9)** ~~(12)~~ of this rule, and 340-041-0007(5), may allow a lowering of water quality in these high quality waters if it finds:

(a) No other reasonable alternatives exist except to lower water quality; and

(b) **The action is necessary and benefits of the lowered water quality outweigh the environmental costs of the reduced water quality. This evaluation will be conducted in accordance with DEQ's "Antidegradation Policy Implementation Internal Management Directive for NPDES Permits and section 401 water quality certifications," pages 27, and 33-39 (March 2001) incorporated herein by reference;**

(c) All water quality standards will be met and beneficial uses protected; and

(d) Federal threatened and endangered aquatic species will not be adversely affected.

(7) Water Quality Limited Waters Policy: **Water quality limited waters may not be further degraded except in accordance with** section (9)(a)(**B**), (C) and (D) of this rule.

(8) Outstanding Resource Waters Policy. Where existing high quality waters constitute an outstanding State or national resource such as those waters designated as extraordinary resource waters, or as critical habitat areas, the existing water quality and water quality values must be maintained and protected, and classified as "Outstanding Resource Waters of Oregon."

(a) The Commission may specially designate high quality waterbodies to be classified as Outstanding Resource Waters in order to protect the water quality parameters that affect ecological integrity of critical habitat or special water quality values that are vital to the unique character of those water bodies. The Department will develop a screening process and establish a list of nominated water bodies for Outstanding Resource Waters designation in the Biennial Water Quality Status Assessment Report (305(b) Report). The priority water bodies for nomination include:

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PROPOSED TYPO CORRECTION

overflow, and that no increase in risk to beneficial uses, including water contact recreation, occurred because of the exceedance, no violation may be triggered, if the storm associated with the overflow was greater than the one-in-five-year, 24-hour duration storm.

(8) Storm Sewers Systems Subject to Municipal NPDES Storm Water Permits: Best management practices must be implemented for permitted storm sewers to control bacteria to the maximum extent practicable. In addition, a collection-system evaluation must be performed prior to permit issuance or renewal so that illicit and cross connections are identified. Such connections must be removed upon identification. A collection system evaluation is not required where the Department determines that illicit and cross connections are unlikely to exist.

(9) Storm Sewers Systems Not Subject to Municipal NPDES Storm Water Permits: A collection system evaluation must be performed of non-permitted storm sewers by January 1, 2005, unless the Department determines that an evaluation is not necessary because illicit and cross connections are unlikely to exist. Illicit and cross-connections must be removed upon identification.

(10) Water Quality Limited for Bacteria: In those water bodies, or segments of water bodies identified by the Department as exceeding the relevant numeric criteria for bacteria in the basin standards and designated as water-quality limited under section 303(d) of the Clean Water Act, the requirements specified in **section 11 of this rule** and in OAR 340-041-0061(11) (12) must apply.

(11) In water bodies designated by the Department as water-quality limited for bacteria, and in accordance with priorities established by the Department, development and implementation of a bacteria management plan may be required of those sources that the Department determines to be contributing to the problem. The Department may determine that a plan is not necessary for a particular stream segment or segments within a water-quality limited basin based on the contribution of the segment(s) to the problem. The bacteria management plans will identify the technologies, best management practices and/or measures and approaches to be implemented by point and nonpoint sources to limit bacterial contamination. For point sources, their National Pollutant Discharge Elimination System permit is their bacteria management plan. For nonpoint sources, the bacteria management plan will be developed by designated management agencies (DMAs) which will identify the appropriate best management practices or measures and approaches.
[ED. NOTE: The Table(s) referenced in this rule is not printed in the OAR Compilation. Copies are available from the agency.]

340-041-0011

Biocriteria

12/4/03 EQC Meeting, Item D Handout.

Revisions To Oregon's Water Quality Standards, Including Temperature

December 4, 2003

DEQ
State of Oregon Department of Environmental Quality

SESSION PREVIEW

- Background and scope of the proposed rule
- Overview of the proposal
- Issues raised during the comment period
- EPA review process

HISTORY OF TEMPERATURE CRITERIA IN OREGON

- 1967 – First temp criteria
- 1979 – Basin specific criteria
- 1996 – Existing criteria
- 1999 – EPA approved with conditions
- 2001 – EPA sued by NWEA
- 2003 – Court decision and order
- 2003 – Oregon revises criteria (?)

PURPOSE & SCOPE OF THE RULE

- Self initiated revisions to clarify the temperature criteria
- Incorporate 2003 EPA temperature criteria guidance
- Respond to the findings of the federal district court
- Streamline the water quality standards rules

EPA TEMPERATURE GUIDANCE

- Summarizes the science of temperature and salmonids
- Recommendations on protecting existing cold water
- Recommendations on numeric temperature criteria
- Alternatives to the numeric criteria
- Mixing zone considerations

NWEA vs. EPA & NMFS

- State needs antideg implementation plan
- Intergravel dissolved oxygen criterion is not protective
- Lack of information re where & when the temperature criteria apply is fatal
- NMFS's "no jeopardy" opinion is not supported by their record
- EPA shall either adopt criteria or approve revised State criteria by March 2, 2004

PROPOSED REVISIONS TO DIVISION 41

- Antidegradation policy
- Intergravel dissolved oxygen
- Temperature criteria
- Beneficial use designations – fish use
- Basin-specific criteria & TMDLs

ANTIDEGRADATION

- Initiated with a proposed new or increased pollutant discharge
- Discharges not considered degradation:
  - Discharges into existing mixing zones
  - Water conservation projects
  - De minimis increases in temperature & DO
  - Recurring (routine) activities
- Exemptions to antidegradation
  - Riparian restoration
  - Emergencies

INTERGRAVEL DISSOLVED OXYGEN CRITERION

- Proposed rule raises the minimum intergravel dissolved oxygen content from 6 mg/l to 8 mg/l
  - Applies to salmonid spawning use

TEMPERATURE RULE OBJECTIVES

- Identify fish use subcategories/locations
- Protect salmonids and other cold water aquatic communities
- Recognize the natural variability of water temperature
- Ensure the criteria are implementable
- Allow for some human activity in and around streams

FOUR TYPES OF TEMPERATURE CRITERIA

- Biologically based numeric criteria
- Natural conditions narrative
- Existing cold water protection
- Site-specific criteria

BIOLOGICALLY BASED NUMERIC CRITERIA

- Temperatures protective of fish
- Expressed as degrees Celsius
- Based on a 7-day average of the daily maximum stream temperature
- Apply "where and when" fish species and life stages are the designated use
  - Rearing/migration uses apply year round
  - Spawning use during designated times

BIOLOGICALLY BASED CRITERIA, °C (°F)

Fish Use	Proposed	Current
Bull trout spawning & rearing	12 (54)	10
Core cold water habitat (early salmon spawning, bull trout sub-/adult presence in July or Aug)	16 (61)	None
Salmon & trout rearing	18 (64)	18
Salmon & steelhead migration corridors	20 (68)	20
Redband or Lahontan cutthroat trout	20 (68)	18

BIOLOGICALLY BASED SPAWNING CRITERIA

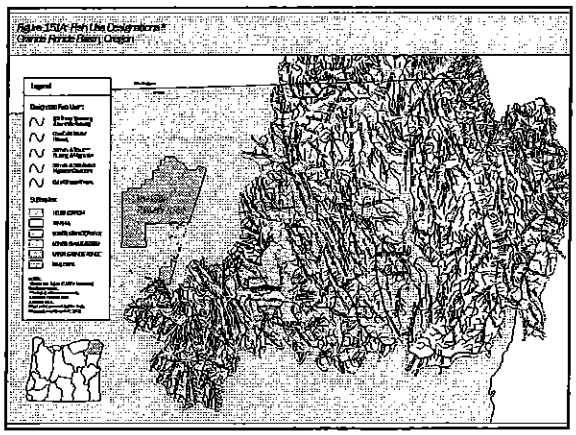
- Salmon and steelhead spawning use
  - includes spawning & incubation through fry emergence
  - 13°C applies during specified dates
- Other salmonids (resident trout):
  - No spawning criterion for temperature

RULE INCORPORATES MAPS AND TABLES

- Tables
  - Columbia and Snake main stems
  - Basins with no anadromous fish or bull trout
- Maps for all other basins:
  - Map 1: Fish rearing and migration uses (applicable criteria is 16, 18, or 20°C)
  - Map 2: Spawning use, dates when spawning criterion (13°C) applies

MAPS BASED ON FISH DISTRIBUTION & TIMING DATA

- Data from ODFW data base (reflects habitat conditions, not just current fish presence)
- Good location and timing data for basins with anadromous fish
- ODFW has process to reconcile conflicting information
- Bull trout information from DEQ workgroup and USFWS critical habitat



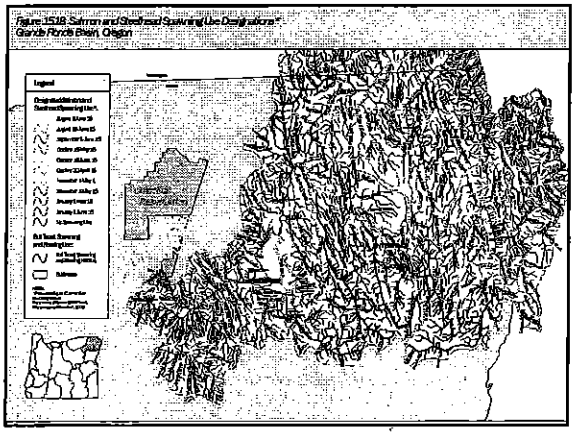


TABLE 101B
BENEFICIAL USE DESIGNATIONS - FISH USES
MAINSTEM COLUMBIA RIVER

Geographic Extent of Use	Salmon and Steelhead Migration Corridors (20°C)	Salmon and Steelhead Spawning through Fry Emergence	Shad and Sturgeon Spawning and Rearing
Mainstem Columbia River			
Beacon Rock to Upstream of Ives Island (RM 141.5 to RM 143.5)		October 15 - March 31	
Columbia River, mouth to WA border (RM309)	X		
Columbia River (RM 147 to RM 203)			X

Table produced November, 200

NATURAL CONDITIONS - aka NATURAL THERMAL POTENTIAL

- Narrative criterion
- Where natural conditions are less stringent (warmer), they automatically supercede biological criteria
- Identified through the TMDL, thermal potential modeling or other analysis
- No need for standards revision

COLD WATER PROTECTION

- Prevents cold streams from being warmed more than 0.3°C above the *current ambient stream* summer temperature
  - Fish need range of cold temperatures
  - Warming these reaches may lead to summer exceedance of criteria downstream
- Does not apply if no T/E species present, and cold water not required to meet criteria downstream
- Up to 1°C increase limit applies to spawning reaches in fall, winter and spring

ALTERNATIVE SITE-SPECIFIC CRITERIA & UAAs

- Site specific criterion - alternative criterion protective of the designated use
- Use attainability analysis (UAA) – neither the biological criteria nor natural conditions are attainable without widespread social/economic harm
  - Use designation changed
- Both require rulemaking and EPA approval

IMPLEMENTATION

- Air temperature and low flow exclusions
- Use in permits, 401 certifications, nonpoint source programs (FPA, Ag WQ Mgmt Plans, TMPs)
- Compliance methods: thermal load trading, flow augmentation, etc.
- Point source variances
  - Require EQC and EPA approval

ADDITIONAL PROVISIONS

- Human use allowance
  - Human sources/activities are allowed increase the stream temp by a de minimis amount above the numeric criteria
- Mixing zones requirements
  - Prevents acute impacts and minimize adverse effects to salmonids
  - Related to spawning redds, lethality, thermal shock and migration blockage

PUBLIC INVOLVEMENT

- Public comment on the EPA regional temperature guidance
- May – conducted 10 listening sessions around the State
- Used Policy and Technical Advisory Committees/Posted drafts on web
- Public comment on rule (8/15-10/3)
  - 10 hearings

MAJOR ISSUES RAISED

- 49 comments received
  - Specific revisions to the maps and tables
  - Add spawning dates for Lahontan trout
  - Clarify the definition and use of the allowance for human use (formerly "de minimis")
  - Clarify definition of natural conditions and explain the relationship with the biological based criteria
  - Add an NPDES variance process

FOLLOW UP TO EQC ADOPTION

- Send rule to EPA immediately
- Not effective for Federal purposes until approved (following consultation with services)
- Anticipate approval on or before March 2, 2004 per court order

EPA DECISION MAKING

- Federal *proposed* rule uses same maps and numeric temperatures. Also includes:
  - Proposed bull trout spawning number
  - Specific UAA section for federal dams
- Public comment period on EPA rule closed November 10, 2003 (3 hearings in Oregon)
- EPA evaluating comments

IF EPA ELECTS TO COMPLETE ITS RULEMAKING...

- DEQ continues to issue NPDES permits
- The regulatory process will be confusing because there will be 2 temperature rules in Oregon
- EPA becomes more involved in routine decisions re variances, site specific criteria and proposed UAAs
- The Oregon rule will be considered ASAP after federal rule finished

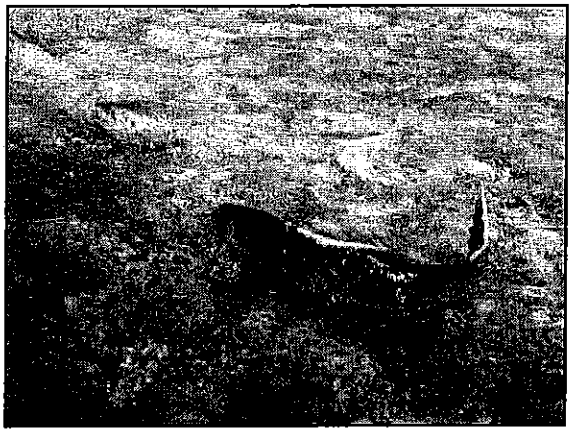


*Figure 271A: Fish Use Designations**
Rogue Basin, Oregon

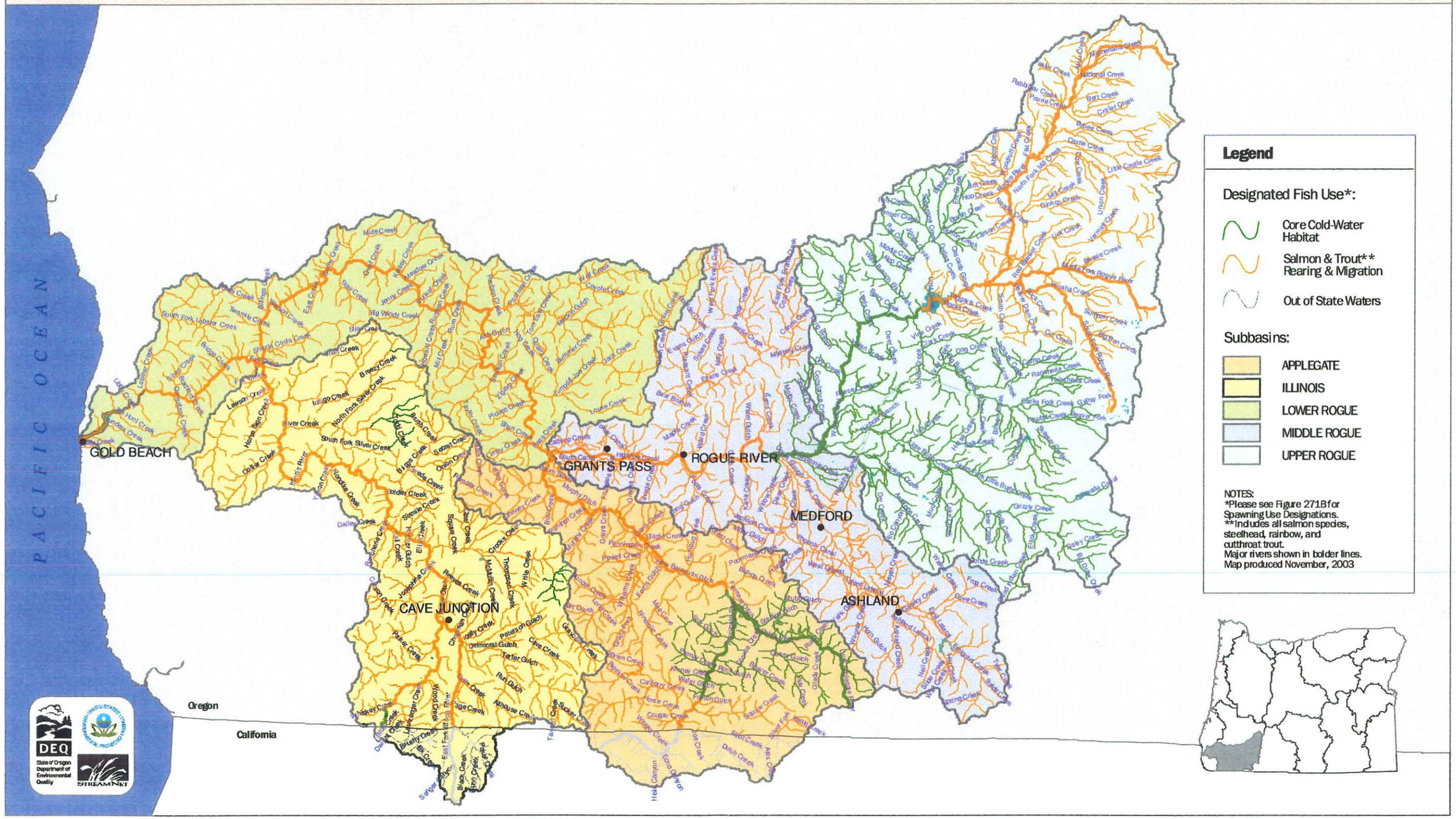


*Figure 271B: Salmon and Steelhead Spawning Use Designations**
Rogue Basin, Oregon

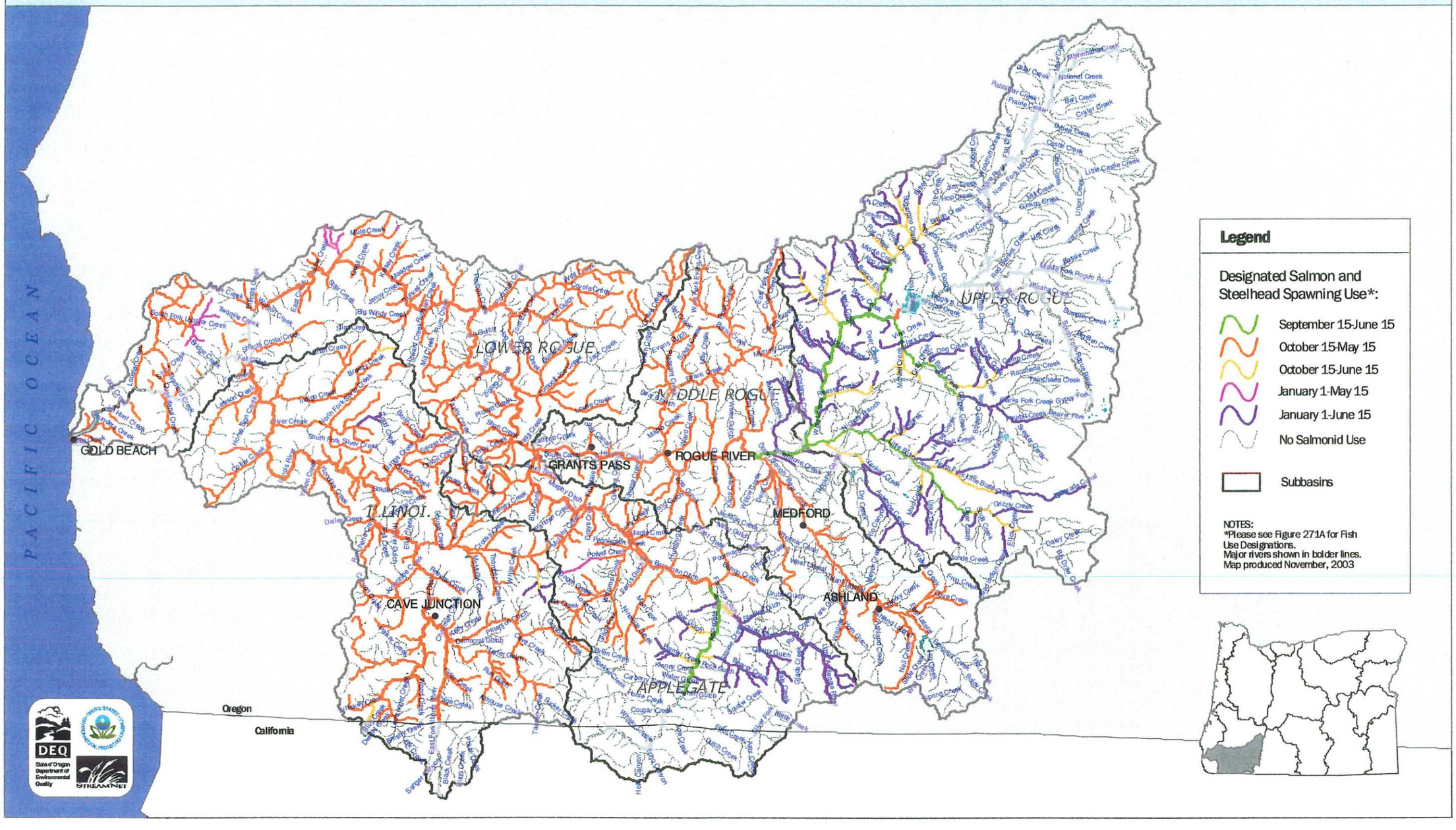


Figure 300A: Fish Use Designations South Coast Basin, Oregon*

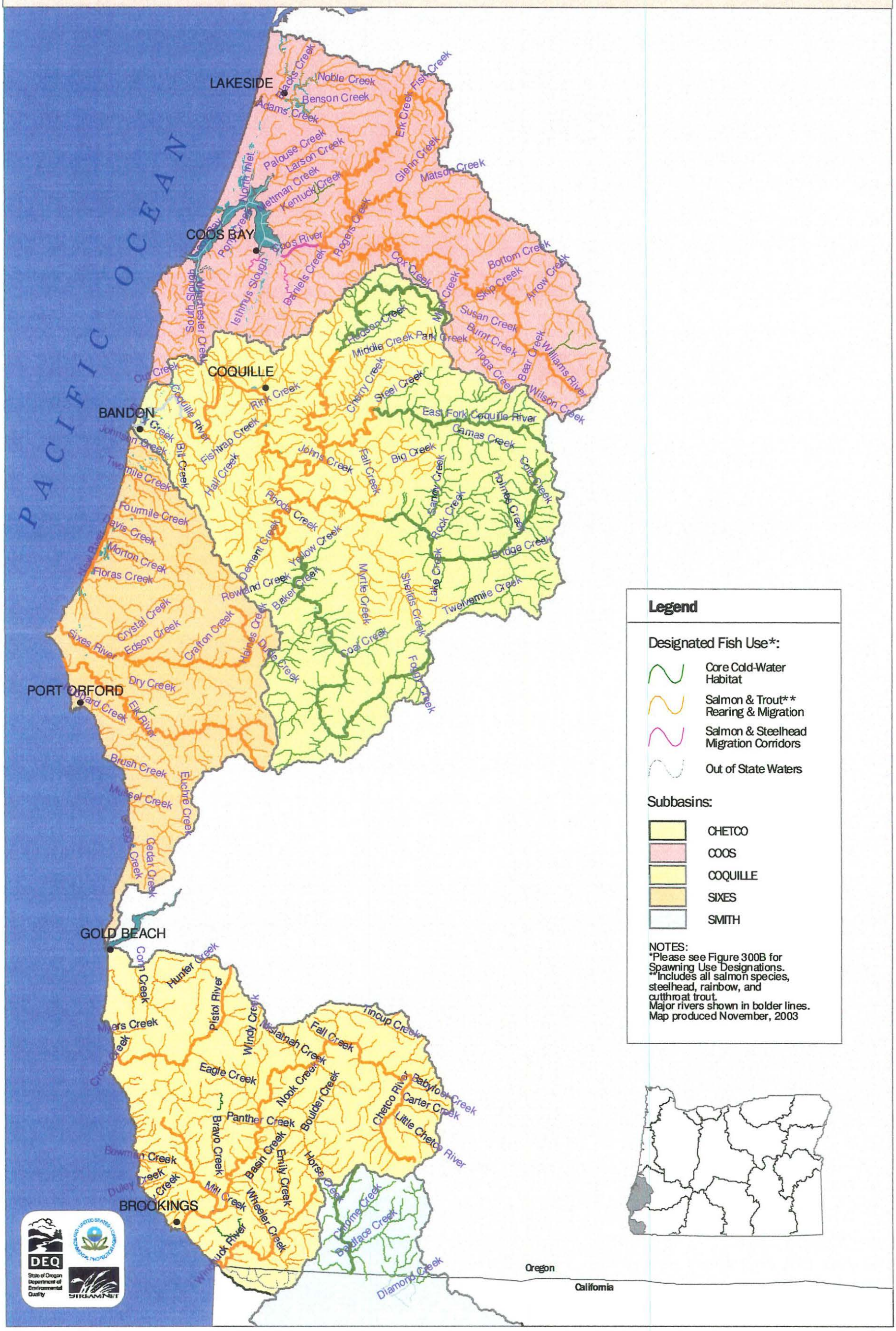


*Figure 300B: Salmon and Steelhead Spawning Use Designations**
South Coast Basin, Oregon

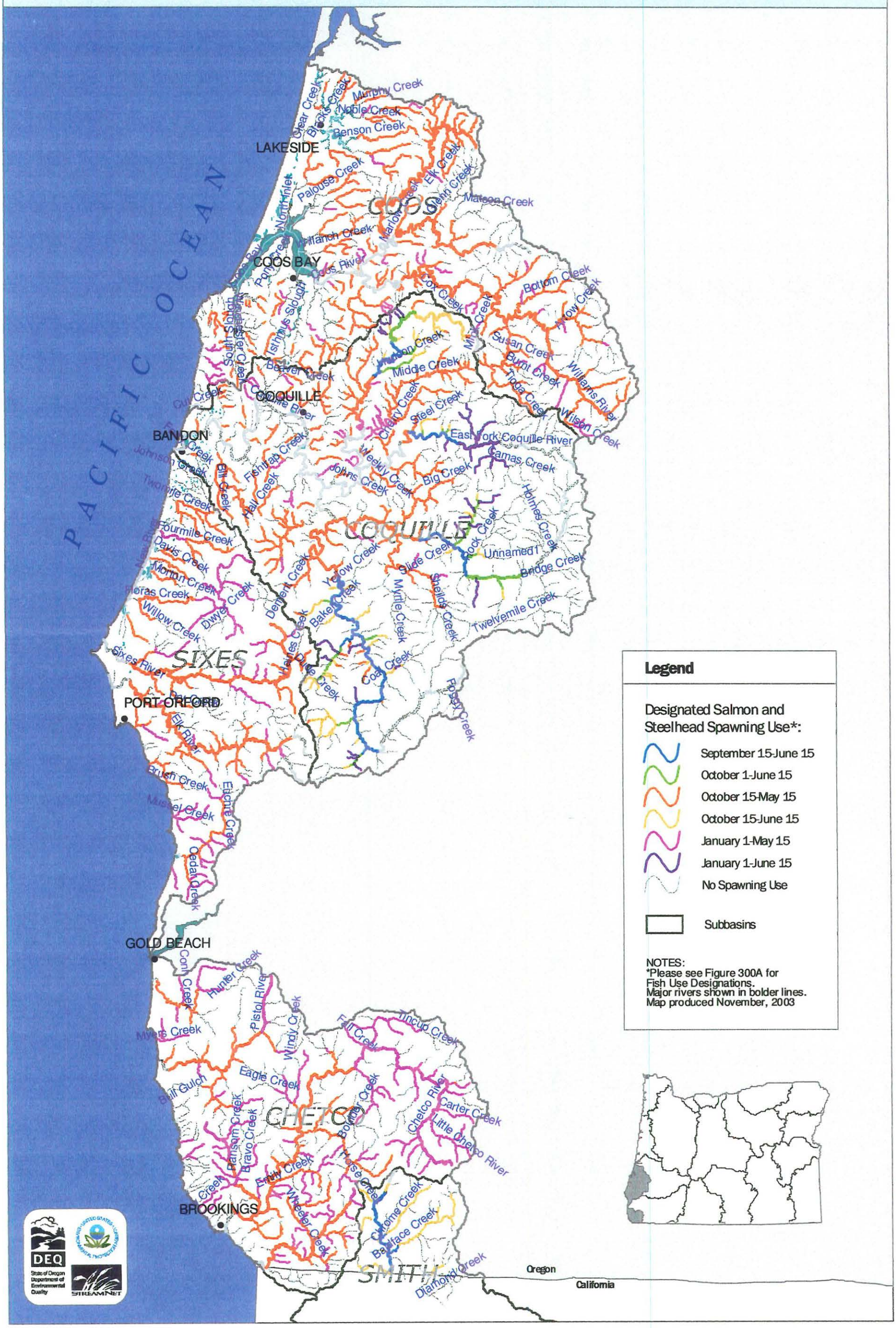
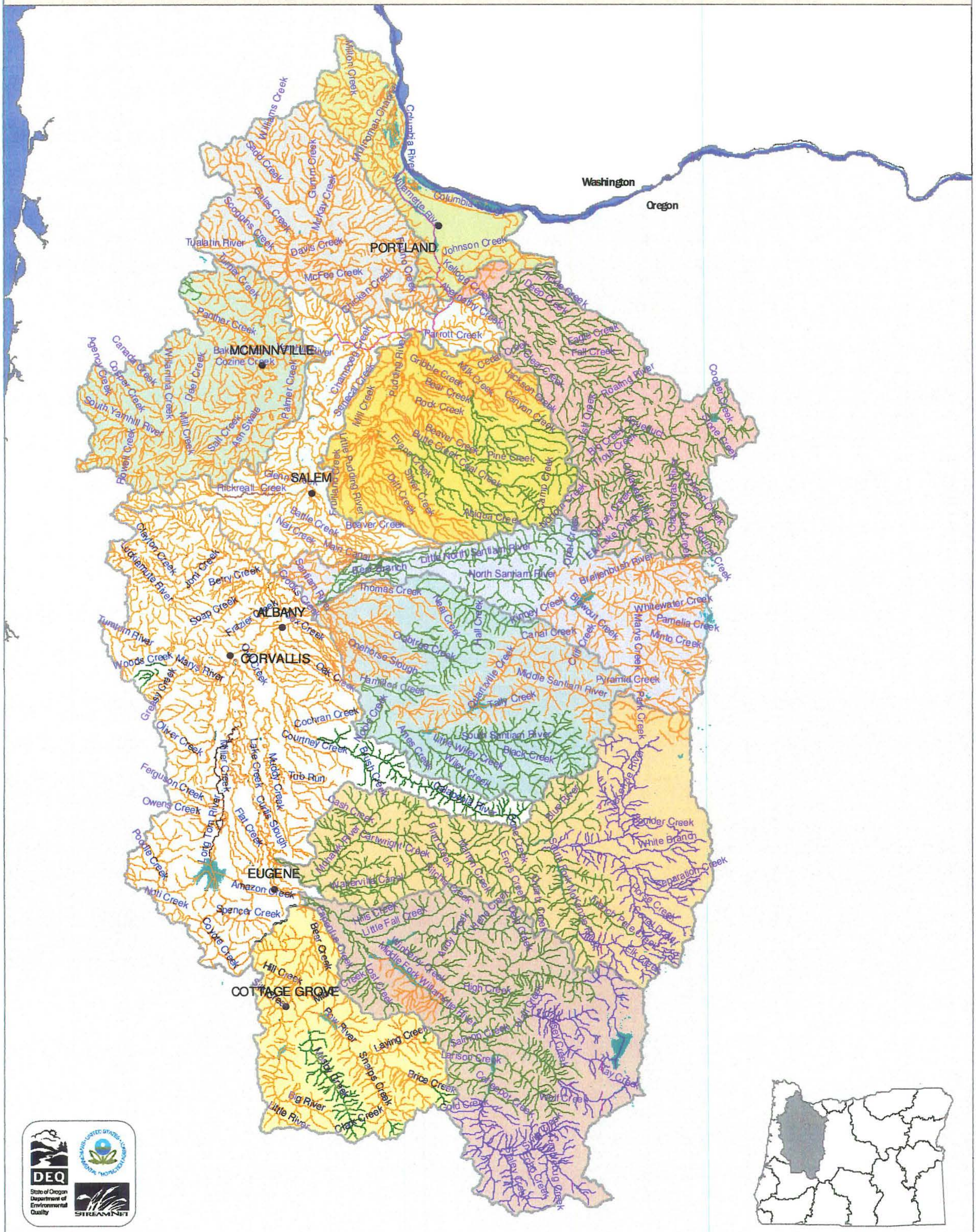


*Figure 340A: Fish Use Designations**
Willamette Basin, Oregon



Legend

Designated Fish Use*:

- Bull Trout Spawning & Juvenile Rearing
- Core Cold-Water Habitat
- Salmon & Trout** Rearing & Migration
- Salmon & Steelhead Migration Corridors
- Cool Water Species (no salmonid use)

Subbasins

- CLACKAMAS
- COAST FORK WILLAMETTE
- LOWER WILLAMETTE
- MCKENZIE
- MIDDLE FORK WILLAMETTE
- MIDDLE WILLAMETTE
- MOLALLA-PUDDING
- NORTH SANTIAM
- SOUTH SANTIAM
- TUALATIN
- UPPER WILLAMETTE
- YAMHILL

NOTES:
*Please see Figure 340B for Spawning Use Designations.
**Includes all salmon species, steelhead, rainbow, and cutthroat trout.
Major rivers shown in bolder lines.
Map produced November, 2003

Approved___
Approved with Corrections___

Minutes are not final until approved by the Commission.

Oregon Environmental Quality Commission
Minutes of the Three Hundredth and Fourteenth Meeting

October 9-10, 2003
Regular Meeting[1]

On October 8, prior to the regular meeting, members of the Environmental Quality Commission (EQC, Commission) had dinner with Department of Environmental Quality (DEQ, Department) Eastern Region staff to discuss regional activities and environmental issues in the John Day area. The dinner was held at Shoshoni Winds, located at 128 West Front Street, in Prairie City, Oregon.

Thursday, October 9, 2003

On the morning of October 9, the Commission toured the Upper John Day River Basin to see agricultural water quality improvement projects and discuss local watershed restoration efforts.

The following EQC members were present for the regular meeting, held at the U.S. Department of Agriculture Malheur National Forest Building, located at 431 Patterson Bridge Road in John Day, Oregon.

Mark Reeve, Chair
Deirdre Malarkey, Member
Harvey Bennett, Member
Lynn Hampton, Member

Chair Reeve called the regular meeting to order at approximately 1:00 p.m., and introduced Commission members, DEQ Director Stephanie Hallock, Assistant Attorney General Larry Knudsen, and Commission Assistant Mikell O'Mealy. Agenda items were taken in the following order.

A. Approval of Minutes
Commissioner Malarkey moved that the Commission approve draft minutes of the August 14-15, 2003 EQC meeting. Commissioner Bennett seconded the motion and it passed with four "yes" votes.

B. Informational Item: Overview of DEQ Air Quality Programs and Policy
Andy Ginsburg, DEQ Air Quality Division Administrator, gave the Commission an overview of major agency programs and initiatives to protect and improve Oregon's air quality in Oregon. The Commission discussed DEQ's Air Quality program with Mr. Ginsburg and Director Hallock.

C. Rule Adoption: On-Road Clean Screening and Self Service Testing of Vehicles
Andy Ginsburg, DEQ Air Quality Division Administrator, and Ted Kotsakis, DEQ Vehicle Inspection Program manager, proposed rules for DEQ's Vehicle Inspection Program (VIP), which tests emissions from cars in the Portland and Medford areas to protect air quality. Mr. Kotsakis explained that the rules would establish two new vehicle testing programs designed to make it easier to do business with DEQ. The first program, On-Road Clean Screening, would screen vehicles while on the road and send owners

[1] Staff reports and written material submitted at the meeting are made part of the record and available from DEQ, Office of the Director, 811 SW Sixth Avenue, Portland, Oregon 97204; phone: (503) 229-5990.

of the cleanest vehicles notices that their vehicles need not be tested at centralized VIP test stations. The second program, Self Service Testing, would allow customers to self-test their emissions at a designated facility twenty four hours a day and seven days a week.

The Commission discussed the proposed rules in the context of other customer service improvements DEQ has made in the program over the past two years. Commissioner Bennett moved that the Commission adopt the proposed rules and associated revisions to the State Implementation Plan for the Clean Air Act. Commissioner Malarkey seconded the motion and it passed with four "yes" votes.

D. Rule Adoption: Oregon Air Toxics Rules

Andy Ginsburg, DEQ Air Quality Administrator, and Sarah Armitage and Gregg Lande, DEQ Air Quality Specialists, proposed rules to create a state air toxics program, which was developed with the help of two stakeholder advisory committees over the past five years. Ms. Armitage explained that Oregon's program would target urban-area air toxic emissions from mobile and other small sources of pollution, complementing the industrial focus of the federal air toxics program that DEQ has implemented since 1990. The state program would take a community-based approach and create a framework for adopting concentration limits for certain air pollutants, identifying high-risk areas of the state, and implementing local emission reduction plans.

Commissioners discussed the proposed rules with Mr. Ginsburg and Director Hallock, including the need to be aware of the potential limitations of small communities to participate in the program. After consideration, Commissioner Malarkey moved that the Commission adopt the proposed Oregon Air Toxics Program Rules. Commissioner Bennett seconded the motion and it passed with four "yes" votes.

E. Informational Item: Oregon Clean Diesel Initiative

Andy Ginsburg, DEQ Air Quality Division Administrator, and Kevin Downing, DEQ Air Quality Planner, briefed the Commission on the Department's initiative to reduce pollution from diesel exhaust through the Clean Diesel Initiative, a voluntary, incentive supported program. Mr. Downing explained how the initiative would complement efforts to reduce air pollution under the Oregon Air Toxics Program. Commissioners thanked Mr. Downing for his presentation.

Chair Reeve adjourned the meeting for the day at approximately 4:30. At 5:00 p.m., the Commission held a working dinner with DEQ staff at The Outpost restaurant, located at 155 West Main Street in John Day. From 6:30 to 8:00 p.m., the Commission held a public meeting with local officials at The Outpost to discuss environmental and economic issues and opportunities in the John Day area.

Friday, October 10, 2003

At 8:00 a.m., prior to the regular meeting, the Commission held an executive session to consult with counsel concerning legal rights and duties with regard to litigation against the Department. The executive session was held pursuant to Oregon Revised Statutes 192.660(1)(h).

Chair Reeve called the regular meeting to order at approximately 8:45 a.m. Agenda items were taken in the following order.

F. Director's Dialogue

Stephanie Hallock, DEQ Director, discussed current events and issues involving the Department and the state with Commissioners.

G. Action Item: Consideration of Pollution Control Facilities Tax Credit Requests

Larry Knudsen, Assistant Attorney General, gave an overview of Pollution Control Facility Tax Credit requests prepared by the Department for Commission consideration. Mr. Knudsen asked Commissioners to declare any potential or actual conflicts of interest with regard to any tax credit requests. Commissioner Hampton stated a potential conflict of interest with application numbers 6498, 6499 and 6500. All other Commissioners declared no conflicts of interest.

After discussing the requests, Commissioner Malarkey recommended that the Commission approve a preliminary tax credit certification for the Tillamook County Creamery Association as recommended by the Department. Commissioner Hampton seconded the motion and it passed with four "yes" votes.

Commissioner Bennett moved that the Commission approve a tax credit certificate for Marion Resource Recovery Facility LLC, at an increased amount, based on new information presented by the company after the EQC first issued the tax credit in May 2003. Commissioner Malarkey seconded the motion and it passed with four "yes" votes.

Commissioner Bennett moved that the Commission approve tax credit certificates for fifty two facilities as recommended by the Department, excluding application numbers 6498, 6499 and 6500. Commissioner Hampton seconded the motion and it passed with four "yes" votes.

Commissioner Bennett moved that the Commission approve tax credit certificates for the applications numbered 6498, 6499 and 6500 as recommended by the Department. Commissioner Malarkey seconded the motion and it passed with three "yes" votes. Commissioner Hampton abstained from the vote.

Commissioner Bennett moved that the Commission deny two tax credit requests: application number 5912, which involved an untimely filing, and application number 6421, which involved an ineligible replacement facility. Commissioner Malarkey seconded the motion and it passed with four "yes" votes. The Commission postponed consideration of application number 6484 until the next EQC meeting, as requested by the Department.

Finally, Commissioner Malarkey moved that the Commission approve an order delegating to the Director the authority to sign Pollution Control Facilities Tax Credit Certificates, once the credits are approved by the Commission. Commissioner Hampton seconded the motion and it passed with four "yes" votes. Historically, the Commission Chair had signed the certificates.

H. Informational Item: Status Update on the Umatilla Chemical Agent Disposal Facility
Dennis Murphey, DEQ Chemical Demilitarization Program Administrator, briefed the Commission on the status of trial burns, public outreach efforts, and various other issues related to the Umatilla Chemical Agent Disposal Facility.

I. Informational Item: Overview of DEQ Land Quality Programs and Policy
Dick Pedersen, DEQ Land Quality Division Administrator, gave the Commission an overview of major DEQ programs and policies for solid and hazardous waste management, environmental clean-up, and "cross program" activities that address air, water and land quality issues. Commissioners discussed the Land Quality program with Mr. Pedersen and Director Hallock.

Public Forum
At approximately 11:30 a.m., Chair Reeve invited members of the audience to provide general comments to the Commission.

Kathryn Van Natta, Government Affairs Coordinator for the Northwest Pulp and Paper Association (NWPPA), talked with Commissioners about their role in administrative rulemaking, and summarized current NWPPA efforts to assist the use of science in policy making. Ms. Van Natta complimented DEQ staff working on water quality rules and standards. Chair Reeve thanked Ms. Van Natta for her comments.

Senator Ted Ferrioli, representing Senate District 30, expressed concerns about Oregon's process for dealing with water quality limited streams based on the current temperature standard. Commissioners discussed the process and standard with the Senator, and Chair Reeve thanked him for his comments.

J. Rule Adoption: Hazardous Waste Rule Amendments

Dick Pedersen, DEQ Land Quality Division Administrator, and David Rozell, DEQ Land Quality Policy Specialist, proposed amendments to hazardous waste management rules. Mr. Pedersen explained that the amendments incorporated changes in the federal Resource Conservation and Recovery Act, which were necessary to maintain federal delegation of DEQ's Hazardous Waste Program. Mr. Rozell explained that the proposed changes included adoption of procedural and technical corrections to the federal law, new federal requirements, and clarifications to state-only hazardous waste rules consistent with federal citations and references.

After discussion, Commissioner Bennett moved that the Commission approve the proposed amendments to hazardous waste rules. Commissioner Malarkey seconded the motion and it passed with four "yes" votes.

K. Rule Adoption: Underground Storage Tank Rule Revision

Dick Pedersen, DEQ Land Quality Division Administrator, and Alan Kiphut, DEQ Environmental Cleanup Manager, proposed a permanent rule to amend the definition of "underground storage tank" to clarify when such tanks are regulated by the Department. Mr. Kiphut explained that in Oregon, fuel tanks are regulated in one of two ways: the Oregon State Fire Marshal regulates above ground storage tanks and DEQ regulates underground storage tanks. Early this year, the Commission raised a question about the regulation of certain tanks that are partially covered with earthen materials. In May, to avoid ambiguity in the current state rules, the Commission adopted a temporary rule to make tank regulations more clear and directed the Department to begin a formal rulemaking process to develop a permanent rule. Mr. Kiphut presented the proposed permanent rule at this meeting, which defines "earthen" materials that may cover an underground storage tank to clearly distinguishing it from an above ground tank.

Commissioner Bennett moved that the Commission adopt the proposed permanent rule. Commissioner Malarkey seconded the motion and it passed with four "yes" votes.

L. Commissioners' Reports

Commissioner Bennett expressed his enjoyment in serving on the EQC over the past four years. This was Commissioner Bennett's last EQC meeting.

Chair Reeve thanked Commissioner Bennett for his service and expressed his appreciation for the chance to serve with him.

On behalf of the Commission, Chair Reeve awarded Director Hallock forty hours of administrative leave for the significant amount of uncompensated hours she worked during the 2003 Legislative Session, pursuant to State Policy 60.000.10. Director Hallock thanked Chair Reeve and the Commission for the award.

Chair Reeve adjourned the meeting at approximately 12:30 p.m.

State of Oregon

Department of Environmental Quality Memorandum

Date: **November 18, 2003**

To: Environmental Quality Commission

From: Helen Lottridge, Adminstrator, Management Services Division

Subject: Schedule of Director's Financial Transactions

The attached summary of the Director's financial transactions includes all information for the period December 1, 2002 through October 31, 2003. November information will be added prior to the December 5th EQC meeting.

State of Oregon

Department of Environmental Quality Memorandum

Date: **November 18, 2003**

To: Environmental Quality Commission

From: Stephanie Hallock, Director Deputy Director

Subject: Agenda Item F, Action Item: Director's Transactions for Commission Review
December 5, 2003 EQC Meeting

Proposed Action Oregon Accounting Policy 10.90.00 and DEQ Policy A10.90.00 require that the Commission review and approve certain financial transactions of the Director on an annual basis. A summary of these transactions and copies of the Director's monthly timesheets and travel expense claims through October, 2003 for the past year are attached. Timesheets and expense claims for November will be presented at the EQC meeting.

Background In 2001, the Department of Administrative Services (DAS) adopted a policy requiring Commission review and approval of the Director's transactions, including monthly time reports, vacation pay, travel expenses, and state credit card use. In September 2001, the Commission adopted a policy delegating review and approval of these transactions to the Management Services Division Administrator, with annual Commission review of the approved transactions.

Department Recommendation The Department recommends that the Commission review and approve these transactions. This review will be documented in the Commission meeting minutes as directed by State policy.

Attachments

1. Summary of Director's Financial Transactions as defined by OAM 10.90.00 for the period 12/01/02 – 11/30/03

Approved:

Section:

Division:

Report Prepared By: Judy Hatton

Phone: 503-229-5389

Summary of Director's Financial Transactions
as defined by OAM 10.90.00.PO
12/1/02 - 11/30/03

TIME REPORTING

Summary of leave taken:

Sick Leave	83
Vacation	153
Holiday	72
Personal Business	0
Governor's Leave	16

VACATION LEAVE PAYOFF: None

EXCEPTIONAL PERFORMANCE LEAVE TAKEN: 36 hours

TRAVEL EXPENSE REIMBURSEMENTS

Date	Destination	Reason for Travel	Amount
1/8 - 1/9/03	Salem, OR	1/8 Overnight lodging to attend Tom Gallagher meeting 1/9 Meet with lobbyists	$59.95
4/4/03	Seattle, WA	Pacific Northwest Directors Group Meeting	$340.75
6/25 - 6/27/03	Eugene, Roseburg, Coos Bay, OR	Western region office visits	$164.85
8/9 - 8/12/03	Salt Lake City, UT	Environmental Council of the States Meeting	$579.20
8/21 - 8/22/03	Hermiston, OR	ERP meeting and Chemical Demilitarization Citizens' Advisory Meeting	$104.40
9/4/03	Seattle, WA	Pacific Northwest Directors Group Meeting	$59.50
9/16/03	Salem, OR	Meet with the Governor	$32.40
10/7 - 10/10/03	Bend, John Day, OR	Meet with Bend Office EQC meeting	$187.50
		TOTAL:	**$1,528.55**

USE OF SMALL PURCHASE ORDER TRANSACTION SYSTEM (SPOTS) PURCHASING CARD: None

FORM # AD1743

OREGON STATE PAYROLL SYSTEM

EMPLOYEE MONTHLY TIMESHEET

FINAL COPY

PAYROLL AGENCY #	PERSONNEL AGENCY #	SHIFT	CHECK DISTRIBTN		SOCIAL SECURITY #	CONC JOB	POSITION #	CLASS	PAY BASIS	APPT TYPE	WORK SCHED	TIME SHEET #
34000	34000	1	11000	CUMMINS Stephanie H.	[redacted]	1	0800001	MESN Z7014	S	P	AA7	2-0

START TIME	O/T	BEN PKG	COST CENTER DISTRIBUTION				PERIOD ENDING
			0341002H010	100 %	%	%	%	12/31/02

LINE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	DATE - DAY PAY TYPE	REG HRS	LWOP	MISC HRS
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04																																RG			
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20																																			
**													PRELIMINARY AND FINAL TOTALS																			— —			

OTHER ADJUSTMENTS, BASED ON NUMBER OF INCIDENTS:

LEAVE BALANCES AS OF:

# OF DAYS WORKED:	FORECAST	PRELIM	FINAL
	21		

TIME SHEET | START DATE 12/01/02 | END DATE 12/31/02 | FULL TIME HOURS 176.00

SIGNED, CERTIFYING TRUE AND ACCURATE

EMPLOYEE: Stephanie Cummins

SUPERVISOR:

FORM # AD1743

OREGON STATE PAYROLL SYSTEM

EMPLOYEE MONTHLY TIMESHEET

FINAL COPY

PAYROLL AGENCY #	PERSONNEL AGENCY #	SHIFT	CHECK DISTRIBTN		SOCIAL SECURITY #	CONC JOB	POSITION #	CLASS	PAY BASIS	APPT TYPE	WORK SCHED	TIME SHEET #
34000	34000	1	11000	CUMMINS, STEPHANIE H	[redacted]	1	0000001	MESN Z7014	S	P	AA7	2-(

START TIME	O/T	BEN PKG	COST CENTER DISTRIBUTION				PERIOD ENDING
0000	NE	XX	034100214010 100.00 %	%	%	%	01/31/0

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	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	PAY TYPE	REG HRS	LWOP	MISC HRS
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02																																HO			
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05	8																			8												HO	16		
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PRELIMINARY AND FINAL TOTALS

OTHER ADJUSTMENTS, BASED ON NUMBER OF INCIDENTS:

LEAVE BALANCES AS OF:

# OF DAYS WORKED:	FORECAST	PRELIM	FINAL
	21		

IME SHEET	START DATE	END DATE	FULL TIME HOURS
	01/01/03	01/31/03	184.0

SIGNED, CERTIFYING TRUE AND ACCURATE

EMPLOYEE: Steph. McHallock

SUPERVISOR:

FORM # AD1743

OREGON STATE PAYROLL SYSTEM

EMPLOYEE MONTHLY TIMESHEET

FINAL COPY

PAYROLL AGENCY	PERSONNEL AGENCY #	SHIFT	CHECK DISTRIBTN		SOCIAL SECURITY #	CONC JOB	POSITION #	CLASS	PAY BASIS	APPT TYPE	WORK SCHED	TIME SHEET #
34000	34000	1	11000	CUMMINS, STEPHANIE H	[redacted]	1	0000001	MESN Z7014	S	P	AA7	2-(

START TIME	O/T	BEN PKG.	COST CENTER DISTRIBUTION				PERIOD ENDING
0000	NE	XX	034100214010 100.00 %	%	%	%	02/28/0

LINE	1 SA	2 SU	3 MO	4 TU	5 WE	6 TH	7 FR	8 SA	9 SU	10 MO	11 TU	12 WE	13 TH	14 FR	15 SA	16 SU	17 MO	18 TU	19 WE	20 TH	21 FR	22 SA	23 SU	24 MO	25 TU	26 WE	27 TH	28 FR	29	30	31	DATE - DAY PAY TYPE	REG HRS	LWOP	MISC HRS
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OTHER ADJUSTMENTS, BASED ON NUMBER OF INCIDENTS:

LEAVE BALANCES AS OF:

# OF DAYS WORKED:	FORECAST	PRELIM	FINAL
	19		

TIME SHEET	START DATE	END DATE	FULL TIME HOURS
	02/01/03	02/28/03	160.0

SIGNED, CERTIFYING TRUE AND ACCURATE

EMPLOYEE: Stephanie Hancock

SUPERVISOR: by [illegible]

FORM # AD1743

OREGON STATE PAYROLL SYSTEM

EMPLOYEE MONTHLY TIMESHEET

FINAL COPY

PAYROLL AGENCY #	PERSONNEL AGENCY #	SHIFT	CHECK DISTRIBTN		SOCIAL SECURITY #	CONC JOB	POSITION #	CLASS	PAY BASIS	APPT TYPE	WORK SCHED	TIME SHEET #
34000	34000	1	11000	CUMMINS, STEPHANIE H	[redacted]	1	0000001	MESN Z7014	S	P	AA7	2-(

START TIME	O/T	BEN PKG	COST CENTER DISTRIBUTION				PERIOD ENDING
0000	NE	XX	034100214010 100.00 %	%	%	%	03/31/0

LINE	1 SA	2 SU	3 MO	4 TU	5 WE	6 TH	7 FR	8 SA	9 SU	10 MO	11 TU	12 WE	13 TH	14 FR	15 SA	16 SU	17 MO	18 TU	19 WE	20 TH	21 FR	22 SA	23 SU	24 MO	25 TU	26 WE	27 TH	28 FR	29 SA	30 SU	31 MO	PAY TYPE	REG HRS	LWOP	MISC HRS
	DATE - DAY																																		
01			8	8	8	8	8			8	8	8	8	8			8	8	8	8	6			8	8	8		8				RG			
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PRELIMINARY AND FINAL TOTALS

OTHER ADJUSTMENTS, BASED ON NUMBER OF INCIDENTS:

LEAVE BALANCES AS OF:	# OF DAYS WORKED:	FORECAST	PRELIM	FINAL
		21		

TIME SHEET	START DATE	END DATE	FULL TIME HOURS	SIGNED, CERTIFYING TRUE AND ACCURATE
	03/01/03	03/31/03	168.0	EMPLOYEE: Stephc iHallock

SUPERVISOR:

FORM # AD1243

OREGON STATE PAYROLL SYSTEM

EMPLOYEE MONTHLY TIMESHEET

FINAL COPY

PAYROLL AGENCY #	PERSONNEL AGENCY #	SHIFT	CHECK DISTRIBTN		SOCIAL SECURITY #	CONC JOB	POSITION #	CLASS	PAY BASIS	APPT TYPE	WORK SCHED	TIME SHEET #
34000	34000	1	11000	CUMMINS, STEPHANIE H	[redacted]	1	0000001	MESN Z7014	S	P	AA7	2-(

START TIME	O/T	BEN PKG	COST CENTER DISTRIBUTION			PERIOD ENDING
0000	NE	XX	034100214010 100.00 %	%	%	04/30/03

LINE	1 TU	2 WE	3 TH	4 FR	5 SA	6 SU	7 MO	8 TU	9 WE	10 TH	11 FR	12 SA	13 SU	14 MO	15 TU	16 WE	17 TH	18 FR	19 SA	20 SU	21 MO	22 TU	23 WE	24 TH	25 FR	26 SA	27 SU	28 MO	29 TU	30 WE	31	PAY TYPE	REG HRS	LWOP	MISC HRS
	DATE - DAY																																		
01																																RG			
02																																HO			
03																																~~CTS~~			
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20																																			
* *	PRELIMINARY AND FINAL TOTALS																															— —			

OTHER ADJUSTMENTS, BASED ON NUMBER OF INCIDENTS:

LEAVE BALANCES AS OF:

# OF DAYS WORKED:	FORECAST	PRELIM	FINAL
	22		

TIME SHEET	START DATE	END DATE	FULL TIME HOURS
	04/01/03	04/30/03	176.0

SIGNED, CERTIFYING TRUE AND ACCURATE

EMPLOYEE: Steph m Dallock

SUPERVISOR:

FORM # AD1748

OREGON STATE PAYROLL SYSTEM

EMPLOYEE MONTHLY TIMESHEET

FINAL COPY

PAYROLL AGENCY #	PERSONNEL AGENCY #	SHIFT	CHECK DISTRIBTN		SOCIAL SECURITY #	CONC JOB	POSITION #	CLASS	PAY BASIS	APPT TYPE	WORK SCHED	TIME SHEET #
34000	34000	1	11000	CUMMINS, STEPHANIE H	[redacted]	1	0000001	MESN Z7014	S	P	AA7	2-[illegible]

START TIME	O/T	BEN PKG	COST CENTER DISTRIBUTION				PERIOD ENDING
0000	NE	XX	034100214010 100.00 %	%	%	%	05/31/0[illegible]

LINE	1 TH	2 FR	3 SA	4 SU	5 MO	6 TU	7 WE	8 TH	9 FR	10 SA	11 SU	12 MO	13 TU	14 WE	15 TH	16 FR	17 SA	18 SU	19 MO	20 TU	21 WE	22 TH	23 FR	24 SA	25 SU	26 MO	27 TU	28 WE	29 TH	30 FR	31 SA	PAY TYPE	REG HRS	LWOP	MISC HRS
	DATE - DAY																																		
01																																RG			
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06																																CTS			
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09						2							4										1							2		SL	9		
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* *	PRELIMINARY AND FINAL TOTALS																															— —			

OTHER ADJUSTMENTS, BASED ON NUMBER OF INCIDENTS:

LEAVE BALANCES AS OF:

# OF DAYS WORKED:	FORECAST	PRELIM	FINAL
	21		

TIME SHEET	START DATE	END DATE	FULL TIME HOURS
	05/01/03	05/31/03	176.0

SIGNED, CERTIFYING TRUE AND ACCURATE

EMPLOYEE: Stephanie Hallock

SUPERVISOR: [illegible]

FORM # AD1743

OREGON STATE PAYROLL SYSTEM

EMPLOYEE MONTHLY TIMESHEET

FINAL COPY

PAYROLL AGENCY #	PERSONNEL AGENCY #	SHIFT	CHECK DISTRIBTN		SOCIAL SECURITY #	CONC JOB	POSITION #	CLASS	PAY BASIS	APPT TYPE	WORK SCHED	TIME SHEET #
34000	34000	1	11000	CUMMINS, STEPHANIE H	[redacted]	1	0000001	MESN Z7014	S	P	AA7	3-

START TIME	O/T	BEN PKG	COST CENTER DISTRIBUTION	PERIOD ENDING
0000	NE	XX	034100214010 100.00 % % % %	06/30/0

LINE	1 SU	2 MO	3 TU	4 WE	5 TH	6 FR	7 SA	8 SU	9 MO	10 TU	11 WE	12 TH	13 FR	14 SA	15 SU	16 MO	17 TU	18 WE	19 TH	20 FR	21 SA	22 SU	23 MO	24 TU	25 WE	26 TH	27 FR	28 SA	29 SU	30 MO	31	DATE - DAY PAY TYPE	REG HRS	LWOP	MISC HRS
01																																RG			
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18																																SDE			
19																																CTA			
20																																			
* *												PRELIMINARY AND FINAL TOTALS																				— —			

OTHER ADJUSTMENTS, BASED ON NUMBER OF INCIDENTS:

LEAVE BALANCES AS OF:

# OF DAYS WORKED:	FORECAST	PRELIM	FINAL
	21		

TIME SHEET	START DATE	END DATE	FULL TIME HOURS
	06/01/03	06/30/03	168.0

SIGNED, CERTIFYING TRUE AND ACCURATE

EMPLOYEE: Steph Hallock

SUPERVISOR: [signature] for

FORM # AD1743

OREGON STATE PAYROLL SYSTEM

EMPLOYEE MONTHLY TIMESHEET

FINAL COPY

PAYROLL AGENCY #	PERSONNEL AGENCY #	SHIFT	CHECK DISTRIBTN		SOCIAL SECURITY #	CONC JOB	POSITION #	CLASS	PAY BASIS	APPT TYPE	WORK SCHED	TIME SHEET #
34000	34000	1	11000	CUMMINS, STEPHANIE H	[redacted]	1	0000001	MESN Z7014	S	P	AA7	3-(

START TIME	O/T	BEN PKG	COST CENTER DISTRIBUTION	PERIOD ENDING
0000	NE	XX	034100214010 100.00 % % % %	07/31/0

LINE	1 TU	2 WE	3 TH	4 FR	5 SA	6 SU	7 MO	8 TU	9 WE	10 TH	11 FR	12 SA	13 SU	14 MO	15 TU	16 WE	17 TH	18 FR	19 SA	20 SU	21 MO	22 TU	23 WE	24 TH	25 FR	26 SA	27 SU	28 MO	29 TU	30 WE	31 TH	PAY TYPE	REG HRS	LWOP	MISC HRS
	DATE - DAY																																		
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03																																CTS			
04	8	8	8		8		8	8	8	8	8			8	8	8	8	8			8	8	8	8	8							RG			
05				8	(PH)																											HO	8		
06																																CTS			
07																							-												
08																								8	8			8	8			VA	32		
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17																																HP			
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														PRELIMINARY AND FINAL TOTALS																			—			

OTHER ADJUSTMENTS, BASED ON NUMBER OF INCIDENTS:

LEAVE BALANCES AS OF:

# OF DAYS WORKED:	FORECAST	PRELIM	FINAL
	22		

TIME SHEET	START DATE	END DATE	FULL TIME HOURS
	07/01/03	07/31/03	184.0

SIGNED, CERTIFYING TRUE AND ACCURATE

EMPLOYEE: Stephanie Hallock

SUPERVISOR: [signature] 8 5pm

FORM # AD1743

OREGON STATE PAYROLL SYSTEM

EMPLOYEE MONTHLY TIMESHEET

FINAL COPY

PAYROLL AGENCY #	PERSONNEL AGENCY #	SHIFT	CHECK DISTRIBTN		SOCIAL SECURITY #	CONC JOB	POSITION #	CLASS	PAY BASIS	APPT TYPE	WORK SCHED	TIME SHEET #
34000	34000	1	11000	CUMMINS, STEPHANIE H	[redacted]	1	0000001	MESN Z7014	S	P	AA7	3-

START TIME	O/T	BEN PKG	COST CENTER DISTRIBUTION				PERIOD ENDING
0000	NE	XX	054100214010 100.00 %	%	%	%	08/31/0

LINE	1 FR	2 SA	3 SU	4 MO	5 TU	6 WE	7 TH	8 FR	9 SA	10 SU	11 MO	12 TU	13 WE	14 TH	15 FR	16 SA	17 SU	18 MO	19 TU	20 WE	21 TH	22 FR	23 SA	24 SU	25 MO	26 TU	27 WE	28 TH	29 FR	30 SA	31 SU	DATE - DAY PAY TYPE	REG HRS	LWOP	MISC HRS
01																																RG			
02																																HO			
03																																CTSS			
04																																RG			
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10																																CTL			
11																																PB			
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18																																SDE			
19																																CTA			
20																																			
* *	PRELIMINARY AND FINAL TOTALS																															— —			

OTHER ADJUSTMENTS, BASED ON NUMBER OF INCIDENTS:

LEAVE BALANCES AS OF:	# OF DAYS WORKED:	FORECAST	PRELIM	FINAL
		21		

TIME SHEET	START DATE	END DATE	FULL TIME HOURS	SIGNED, CERTIFYING TRUE AND ACCURATE
	08/01/03	08/31/03	168.0	EMPLOYEE: [signature] SUPERVISOR: [signature] for RC

FORM # AD1743

OREGON STATE PAYROLL SYSTEM

EMPLOYEE MONTHLY TIMESHEET

FINAL COPY

PAYROLL AGENCY #	PERSONNEL AGENCY #	SHIFT	CHECK DISTRIBTN		SOCIAL SECURITY #	CONC JOB	POSITION #	CLASS	PAY BASIS	APPT TYPE	WORK SCHED	TIME SHEET #
~~34000~~	34000	1	11000	CUMMINS, STEPHANIE H	[redacted]	1	0000001	MESN Z7014	S	P	AA7	3

START TIME	O/T	BEN PKG	COST CENTER DISTRIBUTION				PERIOD ENDING
0000	NE	XX	054100214010 100.00 %	%	%	%	09/30/

LINE	1 MO	2 TU	3 WE	4 TH	5 FR	6 SA	7 SU	8 MO	9 TU	10 WE	11 TH	12 FR	13 SA	14 SU	15 MO	16 TU	17 WE	18 TH	19 FR	20 SA	21 SU	22 MO	23 TU	24 WE	25 TH	26 FR	27 SA	28 SU	29 MO	30 TU	31	PAY TYPE	REQ HRS	LWOP	MISC HRS
	DATE - DAY																																		
01																																RG			
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18																																SDE			
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PRELIMINARY AND FINAL TOTALS

OTHER ADJUSTMENTS, BASED ON NUMBER OF INCIDENTS:

LEAVE BALANCES AS OF:

# OF DAYS WORKED:	FORECAST	PRELIM	FINAL
	21		

TIME SHEET	START DATE	END DATE	FULL TIME HOURS
	09/01/03	09/30/03	176.0

SIGNED, CERTIFYING TRUE AND ACCURATE

EMPLOYEE: St'hanie Hallock

SUPERVISOR: Dale for Ede

FORM # AD1743

OREGON STATE PAYROLL SYSTEM

EMPLOYEE MONTHLY TIMESHEET

FINAL COPY

PAYROLL AGENCY #	PERSONNEL AGENCY #	SHIFT	CHECK DISTRIBTN		SOCIAL SECURITY #	CONC JOB	POSITION #	CLASS	PAY BASIS	APPT TYPE	WORK SCHED	TIME SHEET #
34000	34000	1	11000	CUMMINS, STEPHANIE H	[redacted]	1	0000001	MESN Z7014	S	P	AA7	3-

START TIME	O/T	BEN PKG	COST CENTER DISTRIBUTION				PERIOD ENDING
0000	NE	XX	054100214010 100.00 %	%	%	%	10/31/0

LINE	1 WE	2 TH	3 FR	4 SA	5 SU	6 MO	7 TU	8 WE	9 TH	10 FR	11 SA	12 SU	13 MO	14 TU	15 WE	16 TH	17 FR	18 SA	19 SU	20 MO	21 TU	22 WE	23 TH	24 FR	25 SA	26 SU	27 MO	28 TU	29 WE	30 TH	31 FR	DATE - DAY PAY TYPE	REG HRS	LWOP	MISC HRS
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PRELIMINARY AND FINAL TOTALS

OTHER ADJUSTMENTS, BASED ON NUMBER OF INCIDENTS:

SIGN HERE

OF DAYS WORKED

AVE BALANCES AS OF:	FORECAST	PRELIM	FINAL
	23		

TIME SHEET | START DATE 10/01/03 | END DATE 10/31/03 | FULL TIME HOURS 184.0

SIGNED, CERTIFYING TRUE AND ACCURATE

EMPLOYEE: Stephanie Hallock

SUPERVISOR:

FORM # AD...43

OREGON STATE PAYROLL SYSTEM

EMPLOYEE MONTHLY TIMESHEET

FINAL COPY

PAYROLL AGENCY #	PERSONNEL AGENCY #	SHIFT	CHECK DISTRIBTN		SOCIAL SECURITY #	CONC JOB	POSITION #	CLASS	PAY BASIS	APPT TYPE	WORK SCHED	TIME SHEET #
34000	34000	1	11000	CUMMINS, STEPHANIE H	[redacted]	1	0000001	MESN Z7014	S	P	AA7	3-0

START TIME	O/T	BEN PKG	COST CENTER DISTRIBUTION				PERIOD ENDING
000	NE	XX	054100214010 100.00 %	%	%	%	11/30/03

LINE	1 SA	2 SU	3 MO	4 TU	5 WE	6 TH	7 FR	8 SA	9 SU	10 MO	11 TU	12 WE	13 TH	14 FR	15 SA	16 SU	17 MO	18 TU	19 WE	20 TH	21 FR	22 SA	23 SU	24 MO	25 TU	26 WE	27 TH	28 FR	29 SA	30 SU	31	PAY TYPE	REG HRS	LWOP	MISC HRS
	DATE - DAY																																		
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**	PRELIMINARY AND FINAL TOTALS																															=	160		

OTHER ADJUSTMENTS, BASED ON NUMBER OF INCIDENTS:

LEAVE BALANCES AS OF:

# OF DAYS WORKED:	FORECAST	PRELIM	FINAL
	18		

TIME SHEET	START DATE	END DATE	FULL TIME HOURS
	11/01/03	11/30/03	160.0

SIGNED, CERTIFYING TRUE AND ACCURATE

EMPLOYEE: Stephanie Hallock

SUPERVISOR: Helen Lott for EK

541-56-1012

entered
02/07/03

Oregon

ENVIRONMENTAL
QUALITY
COMMISSION

Received
FEB 04 2003
Payroll

The Environmental Quality Commission hereby awards 40 hours of administrative leave to Stephanie Hallock, DEQ Director, for the significant amount of uncompensated hours she worked during the 2001 Legislative Session. Director Hallock made it her priority to personally represent the agency throughout the duration of the long 2001 session, working overtime with legislators, Governor's staff and stakeholders. At the same time, she continued full oversight of the agency's daily operations, without the assistance of a dedicated Deputy Director. Director Hallock's unfailing dedication, commitment and tireless attention to the needs of Oregon's environment proved invaluable during the session and served the agency extremely well.

In completing the Commission's appraisal of Director Hallock's performance, we are pleased to award this administrative leave in appreciation of her demonstrated and ongoing commitment to the state.

Mark Reeve, EQC Chair
on behalf of the Commission

1/30/03
Date

The Commission awards this leave pursuant to State Policy 60.000.10, Special Leaves with Pay.

811 SW Sixth Avenue
Portland, OR 97204-1390
(503) 229-5696

entered 40 hours AL
10/7/03

Oregon

ENVIRONMENTAL
QUALITY
COMMISSION

Received
OCT 14 2003
Payroll

The Environmental Quality Commission hereby awards 40 hours of administrative leave to Stephanie Hallock, DEQ Director, for the significant amount of uncompensated hours she worked during the 2003 Legislative Session. Director Hallock made it her priority to personally represent the agency throughout the duration of the long 2003 session, working overtime with legislators, Governor's staff and stakeholders. At the same time, she continued full oversight of the agency's daily operations and led DEQ's Executive Management Team in strategic planning and visioning work for the agency's future. Director Hallock's unfailing dedication, commitment and tireless attention to the needs of Oregon's environment proved invaluable during the session and served the agency extremely well.

The Environmental Quality Commission is pleased to award this administrative leave in appreciation of Director Hallock's demonstrated and ongoing commitment to the state.

Mark Reeve, EQC Chair
on behalf of the Commission

10/3/03
Date

The Commission awards this leave pursuant to State Policy 60.000.10, Special Leaves with Pay.

811 SW Sixth Avenue
Portland, OR 97204-139(
(503) 229-5696

STATE OF OREGON
TRAVEL EXPENSE DETAIL SHEET

310/VPT 15767

1. Name of Employee	2. Agency	3. Period (Month and Year)
934000295 Stephanie Hallock Cummins	DEQ	January, 2003
4. Official Station	**5. Division/ Work Unit**	**6. Regular Schedule Work Shift**
Director	OD, PCA MSD02	8:00 am - 5:00 X pm Other to

7. Unrepresented ☐ Management Service ☐ Executive Service X Board/Commission ☐ Volunteer ☐

Bargaining Unit Name ☐ AFSCME Other ☐

8. Date	9. Time of Departure	10. Time of Arrival	11. Destination	12. Per Diem/ Hourly Allowance	Individual Meal Reimbursement Breakfast	Lunch	Dinner	13. Lodging	14. Total Meals and Lodging
01/08/03	5:30pm	6:30pm	Portland>Salem	—			PROV	55.00	55.00
01/09/03	11am	noon	Salem>Portland		PROV	decl.			—
			15. **Totals**					55.00	**$55.00**

16. Accounting Codes		17. Date	18. Miscellaneous Expenses Fares, Private Mileage, Room Tax, Telephone, Other Expenses	19. Training Related?	20 Rate Per Mile	21. Private Car Miles	22. Amount
14010 - 41002			Personal Vehicle Mileage		0.360		
			Room tax				4.95
4101	59.95						
Totals	59.95				**23. Section Total**		**$4.95**

24. I did/will_____ did not/will not X accept travel awards as a result of, or associated with this state business trip. SH **Initials.**

Completion of this block is mandatory. Travel expense reimbursement claims will not be processed if this block is left blank. Travel awards included, but may not be limited to , airline frequent flyer miles and hotel or car rental frequent customer awards or miles. Review instructions on reverse of the form.

25. REASON FOR TRAVEL: (Be specific.)
Attend Ed Gallagher Dinner 1/8/03. Morning meetings with lobbyists in Salem 1-9-03. (see attached calendar)

26. Grand Total Amount **$59.95**

27. Travel Advance Amount

28. Amount Due Employee/State **$59.95**

29. Received Training ☐ Conducted Training ☐

I certify that all reimbursements claimed reflect actual duty required expenses or allowances entitled; that no part thereof has been heretofore claimed or will be claimed from any other source.

30. Signature of Employee: Stephanie Hallock — 31. Title: Director — Date: 01/10/03

. certify that the above claimed expenses are authorized duty required expenses. Funds for payment of this claim are available in the approved budget for the period covered and have been allotted for expenditure.

32. Approved By: for DEQ — 33. Title: Deputy Director — Date: 01/10/03

MSD Admin 4-29-03

327/VPT 16241

STATE OF OREGON
TRAVEL EXPENSE DETAIL SHEET

1. Name of Employee	2. Agency	3. Period (Month and Year)
934000029S Stephanie Hallock Cummings	DEQ	April-03
4. Official Station	**5. Division/ Work Unit**	**6. Regular Schedule Work Shift**
HQ	Office of the Director	8:00 am - 5:00 X pm Other _ to _

7. Unrepresented [ ] Management Service [ ] Executive Service [X] Board/Commission [ ] Volunteer [ ]
Bargaining Unit Name [ ] AFSCME Other [ ]

8. Date	9. Time of Departure	10. Time of Arrival	11. Destination	12. Per Diem/ Hourly Allowance	Individual Meal Reimbursement Breakfast	Lunch	Dinner	13. Lodging	14. Total Meals and Lodging
04/04/03	6:00am	8:57am	Seattle		$12.50				12.50
04/04/03	5:50pm	7:00pm	Portland				$25.00		25.00
			*taxable meal allowances						
			15. **Totals**		12.50		25.00		**$37.50**

16. Accounting Codes		17. Date	18. Miscellaneous Expenses Fares, Private Mileage, Room Tax, Telephone, Other Expenses	19. Training Related?	20 Rate Per Mile	21. Private Car Miles	22. Amount
14010 - 41002		04/04/03	Parking				8.00
		04/04/03	Gray Line of Seattle, Shuttle				14.00
4151	37.50						
4153	22.00						
Totals	59.50					**23. Section Total**	**$22.00**

24. I did/will_____ did not/will not SH accept travel awards as a result of, or associated with this state business trip. ← **Initials.**
Completion of this block is mandatory. Travel expense reimbursement claims will not be processed if this block is left blank. Travel awards included, but may not be limited to , airline frequent flyer miles and hotel or car rental frequent customer awards or miles. Review instructions on reverse of the form.

25. REASON FOR TRAVEL: (Be specific.)
Pacific Northwest Directors Group Meeting

26. Grand Total Amount **$59.50**

27. Travel Advance Amount $0.00

28. Amount Due Employee/State **$59.50**

29. Received Training Conducted Training

I certify that all reimbursements claimed reflect actual duty required expenses or allowances entitled; that no part thereof has been heretofore claimed or will be claimed from any other source.

30. Signature of Employee Stephanie Hallock

31. Title Director Date 04/16/03

I certify that the above claimed expenses are authorized duty required expenses. Funds for payment of this

32. Approved By for EQC

33. Title MSD Admin Date 4-24-03

✓ for dup.

CROZIER Andrea

From: Mary Martin [mmartin@azumano.com]
Sent: Wednesday, March 26, 2003 12:30 PM
To: CROZIER Andrea
Subject: Update for Stephanie Hallock Cummins

CUSTOMER NUMBER: 8117
DATE OF INVOICE: MAR 26 2003
INVOICE NUMBER: ITIN
AGENT NUMBER: K7 PAGE: 01
CUMMINS/STEPHANIE HALLOCK
AZUMANO/AWAY TRAVEL 34000.STEPHANI.5032295300
350 MISSION SE
SALEM OREGON 97302
PHONE: 503 370-7442
FAX: 503 370-7320

DEPT OF ENVIRONMENTAL QUALITY THIS IS YOUR ONLY
ATTN: LAURIE HUNTER E-TKT INVOICE/RECEIPT
811 SW 6TH AVE 6TH FL RETAIN FOR YOUR RECORDS
PORTLAND OR 97204

IN VIEW OF INCREASINGLY RESTRICTIVE AIRLINE POLICIES PLEASE REVIEW YOUR ITINERARY DETAILS AND ADVISE US OF ANY DISCREPANCIES WITHIN 24-HOURS.

---

04 APR 03 - FRIDAY
UNITED 6690 COACH CLASS OPERATED BY-UNITED EXPRESS/SKY
LV: PORTLAND ORE 805A NONSTOP MILES- 129 CONFIRMED
AR: SEATTLE 857A
SEAT- 5B
EQUIPMENT-EMB120 TURBO ELAPSED TIME- :52

UNITED 6697 COACH CLASS OPERATED BY-UNITED EXPRESS/SKY
LV: SEATTLE 550P NONSTOP MILES- 129 CONFIRMED
AR: PORTLAND ORE 635P
EQUIPMENT-EMB120 TURBO ELAPSED TIME- :45
SEAT AT AIRPORT CHECK IN ONLY

TRAVEL AWARDS ACCEPTED BY STATE EMPLOYEES
BECOME THE PROPERTY OF THE STATE OF OREGON.
YOU MUST NOTIFY YOUR AGENCY OF ANY AWARDS RECEIVED.
*** PTKT:TKT/ORI/INV TO TVL ARR * INCL GOVT PARK PASS
AIRLINE CONFIRMATION NUMBER:UA P54BQC

YOUR UNITED AIRLINES CONFIRMATION NUMBER IS: P54BQC

UNITED AIRLINES TICKET NUMBER/AMOUNT IS: 0167244456237 $230.00

YOU MAY ALSO VIEW THIS ITINERARY ON-LINE AT WWW.AZUMANO.COM
YOUR VIEWTRIP CONFIRMATION CODE IS: P54BQC
ORIGINAL TICKET NUMBER: 0167243403045 / $ 230.00
THIS IS YOUR ONLY E-TKT RECEIPT. PLEASE RETAIN FOR YOUR RECORDS.
PRESENT CODE 1010Q TO THRIFTY PARKING FOR DISCOUNT.
THIS IS YOUR ONLY E-TKT RECEIPT. PLEASE RETAIN FOR YOUR RECORDS.

SERVICE FEE 32.75

Full Traveler Detail (History)

iBank Travel Management

OR State Dept. of Enviromental

Trip Departures from 12/01/2002 to 11/30/2003

Report Parameters: Passenger = CUMMINS

CUMMINS/STEPHANIE HA

Actual:	$230.00	Savings:	$298.00	Val Carrier: UNITED (UA)	Account: OR State Dept. of Enviromental
Lowest:	$230.00	Lost Amt:	$0.00	Ticket #: 7243403045	Break 1: 34000
Service Fees:	$18.50			Invoice #: 303131816	Break 2: STEPHANI
Exception:	GOVERNMENT CITY PAIR USED			Inv Date: 03/13/2003	Break 3: 5032295300

Itinerary				Airline	Flt #	Class
PORTLAND,OR	SEATTLE TACOMA,WA	04/04/2003	08:05-08:57	UNITED (UA)	6690	H
SEATTLE TACOMA,WA	PORTLAND,OR	04/04/2003	19:40-20:28	UNITED (UA)	6609	H

Total Cost of Trip: ***$248.50***

CUMMINS/STEPHANIE HA

** This is an "Exchange" record. Original Ticket # was 7243403045

Actual:	$0.00	Savings:	$0.00	Val Carrier: UNITED (UA)	Account: OR State Dept. of Enviromental
Lowest:	$0.00	Lost Amt:	$0.00	Ticket #: 7244456237	Break 1: 34000
Service Fees:	$32.75			Invoice #: 303261814	Break 2: STEPHANI
Exception:	EXCHANGE LESS THAN 4 HOURS			Inv Date: 03/26/2003	Break 3: 5032295300

Itinerary				Airline	Flt #	Class
PORTLAND,OR	SEATTLE TACOMA,WA	04/04/2003	08:05-08:57	UNITED (UA)	6690	H
SEATTLE TACOMA,WA	PORTLAND,OR	04/04/2003	17:50-18:35	UNITED (UA)	6697	H

Total Cost of Trip: ***$32.75***

CUMMINS/STEPHANIE HA

Actual:	$199.00	Savings:	$480.00	Val Carrier: DELTA (DL)	Account: OR State Dept. of Enviromental
Lowest:	$199.00	Lost Amt:	$0.00	Ticket #: 7567086627	Break 1: 34000
Service Fees:	$18.50			Invoice #: 307031814	Break 2: JUDY
Exception:	LOWEST FARE ACHIEVED			Inv Date: 07/03/2003	Break 3: 5032295389

Itinerary				Airline	Flt #	Class
PORTLAND,OR	SALT LAKE CITY,UT	08/09/2003	16:50-19:34	DELTA (DL)	0885	L
SALT LAKE CITY,UT	PORTLAND,OR	08/12/2003	18:55-19:45	DELTA (DL)	1695	L

Total Cost of Trip: ***$217.50***

Report Totals

Air Totals		Car Rental Totals		Hotel Booking Totals	
# of Air Trips:	3	# of Rentals:	0	# of Stays:	0
Air Charges:	$498.75	# of Days Rented:	0	# of RoomNights:	0
Average Cost/Trip:	$166.25	Car Rental Charges:	$0.00	Hotel Booking Charges:	$0.00
		Avg # of Days Rented:	0	Avg # of Nights:	0
** Total of All Charges **		Avg Booked Rate:	$0.00	Avg Booked Rate:	$0.00
$498.75		Avg Cost/Day:	$0.00	Avg Cost/RoomNight:	$0.00

STATE OF OREGON
DEPT OF ENVIRONMENTAL QUALITY
OUT-OF-STATE TRAVEL AUTHORIZATION

1. NAME OF EMPLOYEE:	2. AGENCY/OFFICIAL STATION:	3. REQUEST #:
Stephanie Hallock	DEQ	251-03

4. AGENCY ACCOUNTING INFORMATION: 03-14010-41002

5. TRAVEL JUSTIFICATION ATTACHED? ☑ Yes ☐ No

6. PURPOSE OF TRIP: (Be specific, include dates/times of meeting or conference)
Gang of Seven Meeting at EPA Region 10 HQ, 4/4/2003, 9:30-4:30.

7. ITINERARY:

Destination city/state: Seattle, WA

Departure date/time: 7:00am 4/4/2003

Return date/time: 8:30pm 4/4/2003

8. TRANSPORTATION: (Airfare, train fare or state motor pool vehicle. For rental cars, see #10, for misc. ground transportation, see #11)
Airfare $230.00
United
TOTAL: $230.00

9. LODGING: Lodging per diem rate: _____

Amount per night: _____

Room tax per night: _____

# of nights: _____

TOTAL: $0.00

10. MEALS: Daily meal per diem rate: $50.00

	Rate	# Meals	Total
Breakfast: (25%)	12.50	1	12.50
Lunch: (25%)	12.50	1	12.50
Dinner: (50%)	25.00	1	25.00

TOTAL: $50.00

11. CAR RENTAL: (See OAM 40.10.00.PO, section .115. The state has a price agreement with Budget Rent-A-Car. Optional insurance will not be reimbursed).
_____ **Days @ $37 plus tax, gas** TOTAL: _____

12. MISCELLANEOUS COSTS: (Identify specific expenses - taxis, shuttles, phone, vehicle mileage, etc.)

a. Vehicle Mileage _____ (# of miles) 0.00
b. Shuttle 21.00
c. Other (specify below) _____

TOTAL: $21.00

13. TRAINING RELATED? (if yes, attach agenda)
☐ Yes ☐ No

14. STATUS:
☑ Executive/Mgmt Svc:
☐ AFSCME:
☐ Other: *Explain:* _____

15. TRAVEL AWARDS: Agencies are mandated to maintain records on employee accumulation of travel awards as reported on their travel expense detail sheets. Travel awards include, but may not be limited to airline frequent flyer miles and hotel or car rental frequent customer awards or miles.

16. ESTIMATED COST OF TRIP:

Transportation:	**$230.00**
Lodging:	**$0.00**
Meals:	**$50.00**
Car Rental:	**$0.00**
Misc:	**$21.00**
TOTAL:	**$301.00**

17. I certify that this trip is necessary and essential to the normal discharge of DEQ responsibilites; that required monies are budgeted and alloted for expenditure; that the trip meets all the requirements mandated by ORS 292.230, OAM Policy 40.10.00, and DEQ policy.

18. EMPLOYEE SIGNATURE: Stephanie Hallock **DATE:** 3-13-03

19. SUPERVISOR SIGNATURE: _____ **DATE:** 3/13/03

20. DA/EMT SIGNATURE: Debra Sotheron **DATE:** 3-20-03

3/24 Comfirst $322.25

CROZIER Andrea

From: WEEKS Gary [Gary.Weeks@state.or.us]
Sent: Monday, January 27, 2003 7:30 PM
To: SNODGRASS Emma
Subject: Travel Authorization Request Approved

Your Travel Authorization Request #819 has been approved. You can review this request by selecting the following link:

http://pub.das.state.or.us/travel/

300/VPT 16701

STATE OF OREGON
TRAVEL EXPENSE DETAIL SHEET

9340000295

1. Name of Employee	2. Agency	3. Period (Month and Year)
Stephanie Hallock (Cummins)	DEQ	June-03
4. Official Station	**5. Division/ Work Unit**	**6. Regular Schedule Work Shift**
HQ	OD	8:00 am - 5:00 pm Other to

7. Unrepresented ☐ Management Service ☐ Executive Service X Board/Commission ☐ Volunteer ☐

Bargaining Unit Name ☐ AFSCME Other ☐

8. Date	9. Time of Departure	10. Time of Arrival	11. Destination	12. Per Diem/ Hourly Allowance	Individual Meal Reimbursement: Breakfast	Lunch	Dinner	13. Lodging	14. Total Meals and Lodging
06/25/03	3:00pm	5:00pm	Portland > Eugene (50%) 21	~~42.00~~	N/A	N/A	21.00	25.00	~~67.00~~ 46.00
06/26/03	10:00am	5:00pm	Eugene > Roseburg > Coos Bay	30.00	7.50	7.50	15.00	55.00	85.00
06/27/03	11:00am	3:30pm	Coos Bay > Eugene (75%)	30.00	7.50	7.50	7.50		30.00
				81.00					
			15. Totals	~~102.00~~	~~15.00~~	~~15.00~~	~~43.50~~	80.00	~~$182.00~~ 161.00

16. Accounting Codes		17. Date	18. Miscellaneous Expenses: Fares, Private Mileage, Room Tax, Telephone, Other Expenses	19. Training Related?	20 Rate Per Mile	21. Private Car Miles.	22. Amount
14010-41002			Personal Vehicle Mileage		0.360		
		06/26/03	Room Tax				3.85
4101	164.85						
Totals	164.85				23. Section Total		$3.85

24. I did/will ____ did not/will not accept travel awards as a result of, or associated with this state business trip. Initials.

Completion of this block is mandatory. Travel expense reimbursement claims will not be processed if this block is left blank. Travel awards included, but may not be limited to , airline frequent flyer miles and hotel or car rental frequent customer awards or miles. Review instructions on reverse of the form.

25. REASON FOR TRAVEL: (Be specific.)
DEQ office visits. Visited Eugene, Roseburg, and Coos Bay offices.

26. Grand Total Amount 164.85 ~~$185.85~~

27. Travel Advance Amount

28. Amount Due Employee/State 164.85 ~~$185.85~~

29. Received Training Conducted Training

I certify that all reimbursements claimed reflect actual duty required expenses or allowances entitled; that no part thereof has been heretofore claimed or will be claimed from any other source.

30. Signature of Employee: Stephanie Hallock

31. Title: Director — Date: 07/14/03

I certify that the above claimed expenses are authorized duty required expenses. Funds for payment of this

32. Approved By: [signature] for Etc

33. Title: MSD Administrator — Date: 7-18-03 07/14/03

✓ for dup.

307/VPT16953

STATE OF OREGON
TRAVEL EXPENSE DETAIL SHEET

1. Name of Employee	2. Agency	3. Period (Month and Year)
934 0000295 Stephanie Hallock	Department of Environmental Quality	August-03
4. Official Station	**5. Division/ Work Unit**	**6. Regular Schedule Work Shift**
DEQ/HQ	Office of the Director	X 8:00 am - 5:00 pm Other to

7. Unrepresented ☐ Management Service ☐ Executive Service X Board/Commission ☐ Volunteer ☐
Bargaining Unit Name ☐ AFSCME Other ☐

8. Date	9. Time of Departure	10. Time of Arrival	11. Destination	12. Per Diem/ Hourly Allowance	Individual Meal Reimbursement Breakfast	Lunch	Dinner	13. Lodging	14. Total Meals and Lodging
08/09/03	3:00pm	8:00pm	Portland, OR >Salt Lake City, UT (50% of per diem)	19.00	N/A	N/A	19.00	75.00	94.00
08/10/03				—	prov	prov	prov	75.00	75.00
08/11/03				19.00	prov	prov	19.00	75.00	94.00
08/12/03	7:00pm	8:30pm	Salt Lake City, UT>Portland, OR (100% of per diem)	28.50	9.50	prov	19.00		28.50
			Per Diem Lodging $75, Meals $38						
			15. Totals	66.50	9.50		~~57.00~~	225.00	**$291.50**

15/38

16. Accounting Codes		17. Date	18. Miscellaneous Expenses Fares, Private Mileage, Room Tax, Telephone, Other Expenses	19. Training Related?	20 Rate Per Mile	21. Private Car Miles	22. Amount
14010 - 41002		08/09/03	Marriott Shuttle, Round Trip for the 9th & 12th		0.360		13.00
		08/09/03	Room tax				8.40
4151	316.70	08/10/03	Room tax				8.40
4153	45.00	08/11/03	Room tax				8.40
		08/12/03	Parking at PDX Airport 8/9-12				32.00
Totals	361.70				23. Section Total		**$70.20**

24. I did/will ____ did not/will not X accept travel awards as a result of, or associated with this state business trip. Initials.
Completion of this block is mandatory. Travel expense reimbursement claims will not be processed if this block is left blank. Travel awards included, but may not be limited to , airline frequent flyer miles and hotel or car rental frequent customer awards or miles. Review instructions on reverse of the form.

25. REASON FOR TRAVEL: (Be specific.)
Attended the Environmental Council of the States meeting.

26. Grand Total Amount **$361.70**

27. Travel Advance Amount

28. Amount Due Employee/State **$361.70**

29. Received Training Conducted Training

I certify that all reimbursements claimed reflect actual duty required expenses or allowances entitled; that no part thereof has been heretofore claimed or will be claimed from any other source.

30. Signature of Employee Stephanie Hallock

31. Title Director Date 08/19/03

I certify that the above claimed expenses are authorized duty required expenses. Funds for payment of this claim are available in the approved budget for the period covered and have been allotted for expenditure.

32. Approved By

33. Title MSD Administrator Date 8-27-03

Your Itinerary

Itinerary Number: **1258554** Prepared on: **Thursday, July 31, 2003 12:45**
Traveler: Stephanie Cummins

FLIGHT INFORMATION

Saturday, August 9, 2003

Carrier: Delta Air Lines (DL)
Flight Number: 885
Class: Coach/Economy
Departing: **Portland Intl Arpt (PDX)** on Saturday, August 9, 2003 at 04:50PM
Arriving: **Salt Lake City Intl Arpt (SLC)** on Saturday, August 9, 2003 at 07:34PM
Meal: Seat: 28D Aircraft: Boeing 737-300 Flight time: 01:44
Status: **CONFIRMED:** 4NW00C

Tuesday, August 12, 2003

Carrier: Delta Air Lines (DL)
Flight Number: 1695
Class: Coach/Economy
Departing: **Salt Lake City Intl Arpt (SLC)** on Tuesday, August 12, 2003 at 06:55PM
Arriving: **Portland Intl Arpt (PDX)** on Tuesday, August 12, 2003 at 07:45PM
Meal: Seat: 45D Aircraft: Boeing 757 Flight time: 01:50
Status: **CONFIRMED:** 4NW00C

AIR PAYMENT INFORMATION

Fare Quoted (Total): 199.00 USD

ITINERARY INFORMATION

Air price: 199.00 USD

Full Traveler Detail (History)

iBank Travel Management

OR State Dept. of Enviromental

Trip Departures from 12/01/2002 to 11/30/2003

Report Parameters: Passenger = CUMMINS

CUMMINS/STEPHANIE HA

Actual:	$230.00	Savings:	$298.00	Val Carrier: UNITED (UA)	Account: OR State Dept. of Enviromental
Lowest:	$230.00	Lost Amt:	$0.00	Ticket #: 7243403045	Break 1: 34000
Service Fees:	$18.50			Invoice #: 303131816	Break 2: STEPHANI
Exception:	GOVERNMENT CITY PAIR USED			Inv Date: 03/13/2003	Break 3: 5032295300

Itinerary				Airline	Flt #	Class
PORTLAND,OR	SEATTLE TACOMA,WA	04/04/2003	08:05-08:57	UNITED (UA)	6690	H
SEATTLE TACOMA,WA	PORTLAND,OR	04/04/2003	19:40-20:28	UNITED (UA)	6609	H

Total Cost of Trip: ***$248.50***

CUMMINS/STEPHANIE HA

** This is an "Exchange" record. Original Ticket # was 7243403045

Actual:	$0.00	Savings:	$0.00	Val Carrier: UNITED (UA)	Account: OR State Dept. of Enviromental
Lowest:	$0.00	Lost Amt:	$0.00	Ticket #: 7244456237	Break 1: 34000
Service Fees:	$32.75			Invoice #: 303261814	Break 2: STEPHANI
Exception:	EXCHANGE LESS THAN 4 HOURS			Inv Date: 03/26/2003	Break 3: 5032295300

Itinerary				Airline	Flt #	Class
PORTLAND,OR	SEATTLE TACOMA,WA	04/04/2003	08:05-08:57	UNITED (UA)	6690	H
SEATTLE TACOMA,WA	PORTLAND,OR	04/04/2003	17:50-18:35	UNITED (UA)	6697	H

Total Cost of Trip: ***$32.75***

CUMMINS/STEPHANIE HA

Actual:	$199.00	Savings:	$480.00	Val Carrier: DELTA (DL)	Account: OR State Dept. of Enviromental
Lowest:	$199.00	Lost Amt:	$0.00	Ticket #: 7567086627	Break 1: 34000
Service Fees:	$18.50			Invoice #: 307031814	Break 2: JUDY
Exception:	LOWEST FARE ACHIEVED			Inv Date: 07/03/2003	Break 3: 5032295389

Itinerary				Airline	Flt #	Class
PORTLAND,OR	SALT LAKE CITY,UT	08/09/2003	16:50-19:34	DELTA (DL)	0885	L
SALT LAKE CITY,UT	PORTLAND,OR	08/12/2003	18:55-19:45	DELTA (DL)	1695	L

Total Cost of Trip: ***$217.50***

Report Totals

Air Totals		Car Rental Totals		Hotel Booking Totals	
# of Air Trips:	3	# of Rentals:	0	# of Stays:	0
Air Charges:	$498.75	# of Days Rented:	0	# of RoomNights:	0
Average Cost/Trip:	$166.25	Car Rental Charges:	$0.00	Hotel Booking Charges:	$0.00
		Avg # of Days Rented:	0	Avg # of Nights:	0
		Avg Booked Rate:	$0.00	Avg Booked Rate:	$0.00
		Avg Cost/Day:	$0.00	Avg Cost/RoomNight:	$0.00

**** Total of All Charges ****

$498.75

STATE OF OREGON
DEPT OF ENVIRONMENTAL QUALITY
OUT-OF-STATE TRAVEL AUTHORIZATION

1. NAME OF EMPLOYEE:	2. AGENCY/OFFICIAL STATION:	3. REQUEST #:
Stephanie Hallock	DEQ/HQ	15-03 ✓

4. AGENCY ACCOUNTING INFORMATION:	5. TRAVEL JUSTIFICATION ATTACHED?
05 - 14010 - 41002	☑ Yes ☐ No

6. PURPOSE OF TRIP: (Be specific, include dates/times of meeting or conference)
The Environmental Council of the States Annual Meeting. Stephanie Hallock is a member of this council and would like to attend this meeting.Great opportunity for Oregon to connect with other states to see how they are facing challenges with their budget, policy, growth, customer service, and environmental enhancement. 8/10 - 8/12/03

7. ITINERARY:

Destination city/state: Salt Lake City, UT

Departure date/time: Sat. August 9th, 1:05pm

Return date/time: Tues. August 12th, 8:00pm

8. TRANSPORTATION: (Airfare, train fare or state motor pool vehicle. For rental cars, see #10, for misc. ground transportation, see #11)
Airfare $297

TOTAL: $297.00

9. LODGING: Lodging per diem rate: $75.00

Amount per night:	75.00
Room tax per night:	~~10.00~~
# of nights:	3
	255.00
TOTAL:	~~$225.00~~

10. MEALS: Daily meal per diem rate: $38.00

	Rate	# Meals	Total
Breakfast: (25%)	9.50	2	19.00
Lunch: (25%)	9.50	0	0.00
Dinner: (50%)	19.00	3	57.00
		TOTAL:	$76.00

11. CAR RENTAL: (See OAM 40.10.00.PO, section .115. The state has a price agreement with Budget Rent-A-Car. Optional insurance will not be reimbursed).
___ **Days @ $37 plus tax, gas** TOTAL: _____

12. MISCELLANEOUS COSTS: (Identify specific expenses - taxis, shuttles, phone, vehicle mileage, etc.)

a. Vehicle Mileage	(# of miles)	0.00
b. Shuttle		16.00
c. Other (specify below)		~~450.00~~
~~Registration fees $450~~		116.00
	TOTAL:	~~$466.00~~

13. TRAINING RELATED? (if yes, attach agenda)
☐ Yes ☑ No

14. STATUS:
☑ Executive/Mgmt Svc:
☐ AFSCME:
☐ Other: *Explain:* _____

15. TRAVEL AWARDS: Agencies are mandated to maintain records on employee accumulation of travel awards as reported on their travel expense detail sheets. Travel awards include, but may not be limited to airline frequent flyer miles and hotel or car rental frequent customer awards or miles.

16. ESTIMATED COST OF TRIP:

Transportation:	$297.00
Lodging:	~~$225.00~~ 255.00
Meals:	$76.00
Car Rental:	$0.00
Misc:	~~$466.00~~ 116.00
TOTAL:	~~$1,064.00~~ 644.00

17. I certify that this trip is necessary and essential to the normal discharge of DEQ responsibilites; that required monies are budgeted and alloted for expenditure; that the trip meets all the requirements mandated by ORS 292.230, OAM Policy 40.10.00, and DEQ policy.

18. EMPLOYEE SIGNATURE: Stephanie Hallock **DATE:** 6-4-03

19. SUPERVISOR SIGNATURE: [signature] for EQC **DATE:** 6-12-03

20. DA/EMT SIGNATURE: **DATE:**

$519.20
6/18 c-m Mut

Request #910 — Approved

State of Oregon
Department of Administrative Services — Director's Office
Out-of-State Travel Authorization

Name
Stephanie Hallock

Agency
Department of Environmental Quality

Phone
503-229-5990

Email
CROZIER.andrea@deq.state.or.us

Fax
503-229-6762

Date of Request
5/28/2003

Departure Date
8/9/2003

Return Date
8/12/2003

Destinations (City, State)
Salt Lake City, Utah

Purpose of trip and value to the state:
The Environmental Council of the States Annual Meeting. Stephanie Hallock, Director of the DEQ, is a member of this Council and would like to attend this Meeting. It is very valuable to maintain excellent relationships with other Director's across the nation to work together to protect our environment for our citizens. Great opportunity for Oregon to see how other states are doing and strategies for improvements on policy, customer service, environmental enhancement and budget.

Travel priority criteria for requests to be expended from General/Lottery Funds:
4. State Business — Criteria Reference

All travel conforms to State law and the Department of Administrative Services travel rules with the exception of the following:
No exceptions.

Submit Another Request

Exit

<-- Back

337 / VPT 16917

STATE OF OREGON
TRAVEL EXPENSE DETAIL SHEET

1. Name of Employee	2. Agency	3. Period (Month and Year)
934000295 Stephanie Hallock Cummins	Department of Environmental Quality	August-03
4. Official Station	**5. Division/ Work Unit**	**6. Regular Schedule Work Shift**
DEQ/HQ	Office of the Director	X 8:00 am - 5:00 pm Other _ to _

7. Unrepresented [ ] Management Service [ ] Executive Service [X] Board/Commission [ ] Volunteer [ ]
Bargaining Unit Name [ ] AFSCME Other [ ]

8. Date	9. Time of Departure	10. Time of Arrival	11. Destination		12. Per Diem/ Hourly Allowance	Individual Meal Reimbursement: Breakfast	Lunch	Dinner	13. Lodging	14. Total Meals and Lodging
08/21/03	8:00am	11:00am	Portland>Hermiston	22.50	~~30.00~~	N/A	7.50	15.00	55.00	~~85.00~~ 77.50
08/22/03	10:30am	1:30pm	Hermiston>Portland	22.50	~~30.00~~	7.50	7.50	N/A		~~30.00~~ 22.50
					45.00					
			15. Totals		~~60.00~~	~~7.50~~	~~15.00~~	~~15.00~~	55.00	~~$115.00~~ 100.00

16. Accounting Codes		17. Date	18. Miscellaneous Expenses: Fares, Private Mileage, Room Tax, Telephone, Other Expenses	19. Training Related?	20 Rate Per Mile	21. Private Car Miles	22. Amount
14010 - 41002					0.360		
		08/22/03	Room Tax				4.40
4101	104.40						
Totals	104.40				23. Section Total		$4.40

24. I did/will ____ did not/will not X accept travel awards as a result of, or associated with this state business trip. DHC Initials.
Completion of this block is mandatory. Travel expense reimbursement claims will not be processed if this block is left blank. Travel awards included, but may not be limited to , airline frequent flyer miles and hotel or car rental frequent customer awards or miles. Review instructions on reverse of the form.

25. REASON FOR TRAVEL: (Be specific.)
Attended the ERP meeting and Chemical Demilitarization Citizens' Advisory Commission meeting in Hermistion w/ David Van't Hof from the Governor's Office.

26. Grand Total Amount 104.40 ~~$119.40~~
27. Travel Advance Amount
28. Amount Due Employee/State 104.40 ~~$119.40~~
29. Received Training Conducted Training

I certify that all reimbursements claimed reflect actual duty required expenses or allowances entitled; that no part thereof has been heretofore claimed or will be claimed from any other source.

30. Signature of Employee: Stephanie Hallock

31. Title: Director — Date: 08/22/03

I certify that the above claimed expenses are authorized duty required expenses. Funds for payment of this claim are available in the approved budget for the period covered and have been allotted for expenditure.

32. Approved By: Helen Lottridge for EQC

33. Title: MSD Administrator — Date:

333/VPT 17056

STATE OF OREGON
TRAVEL EXPENSE DETAIL SHEET

1. Name of Employee	2. Agency	3. Period (Month and Year)
934000029S Stephanie Hallock Cummins	Department of Environmental Quality	September-03
4. Official Station	**5. Division/ Work Unit**	**6. Regular Schedule Work Shift**
DEQ/HQ	Office of the Director	X 8:00 am - 5:00 pm Other to

7. Unrepresented ☐ Management Service ☐ Executive Service X Board/Commission ☐ Volunteer ☐

Bargaining Unit Name ☐ AFSCME Other ☐

8. Date	9. Time of Departure	10. Time of Arrival	11. Destination	12. Per Diem/ Hourly Allowance	Individual Meal Reimbursement Breakfast	Lunch	Dinner	13. Lodging	14. Total Meals and Lodging
09/04/03	6:00am	8:00pm	Portland>Seattle>Portland		*12.50		*25.00		37.50
			* taxable meal allowance						
				15. Totals	12.50		25.00		$37.50

16. Accounting Codes		17. Date	18. Miscellaneous Expenses Fares, Private Mileage, Room Tax, Telephone, Other Expenses	19. Training Related?	20 Rate Per Mile	21. Private Car Miles	22. Amount
14010-41002					0.360		
		09/04/03	Parking				22.00
4151	37.50						
4153	22.00						
Totals	59.50				23. Section Total		$22.00

24. I did/will ____ did not/will not X accept travel awards as a result of, or associated with this state business trip. Initials.

Completion of this block is mandatory. Travel expense reimbursement claims will not be processed if this block is left blank. Travel awards included, but may not be limited to , airline frequent flyer miles and hotel or car rental frequent customer awards or miles. Review instructions on reverse of the form.

25. REASON FOR TRAVEL: (Be specific.)
Attended the Pacific Northwest Director's Group meeting (Gang of 7) in Seattle.

26. Grand Total Amount $59.50

27. Travel Advance Amount

28. Amount Due Employee/State $59.50

29. Received Training Conducted Training

I certify that all reimbursements claimed reflect actual duty required expenses or allowances entitled; that no part thereof has been heretofore claimed or will be claimed from any other source.

30. Signature of Employee Stephanie Hallock

31. Title Director Date

I certify that the above claimed expenses are authorized duty required expenses. Funds for payment of this claim are available in the approved budget for the period covered and have been allotted for expenditure.

32. Approved By Helen Lottridge for EQC

33. Title MSD Administrator Date 9-22-03

✓ for chap.

STATE OF OREGON
DEPT OF ENVIRONMENTAL QUALITY
OUT-OF-STATE TRAVEL AUTHORIZATION

1. NAME OF EMPLOYEE:	2. AGENCY/OFFICIAL STATION:	3. REQUEST #:
Stephanie Hallock	Department of Environmental Quality	38-04

4. AGENCY ACCOUNTING INFORMATION: 14010-41002

5. TRAVEL JUSTIFICATION ATTACHED? ☐ Yes ☑ No

6. PURPOSE OF TRIP: (Be specific, include dates/times of meeting or conference)
Pacific Northwest Director's Group (Gang of Seven), this is a routine meeting that DEQ attends to meet with other Natural Resource Agency Directors from our neighboring states. It will be held in Seattle, WA on September 4th from approx. 9:00am - 4:00pm. Andy Ginsburg will be carpooling w/ Stephanie.

7. ITINERARY:

Destination city/state:	Seattle/WA
Departure date/time:	9/4/2003 @ 6:00 am
Return date/time:	9/4/2003 @ 7:00 pm

8. TRANSPORTATION: (Airfare, train fare or state motor pool vehicle. For rental cars, see #10, for misc. ground transportation, see #11)
State Motor Pool Vehicle
charge on Andy Ginsburg OSA
TOTAL: $0.00

9. LODGING: Lodging per diem rate: _____

Amount per night:	
Room tax per night:	
# of nights:	
TOTAL:	$0.00

10. MEALS: Daily meal per diem rate: $50.00

	Rate	# Meals	Total
Breakfast: (25%)	12.50	1	12.50
Lunch: (25%)	12.50		0.00
Dinner: (50%)	25.00	1	25.00
		TOTAL:	$37.50

11. CAR RENTAL: (See OAM 40.10.00.PO, section .115. The state has a price agreement with Budget Rent-A-Car. Optional insurance will not be reimbursed).
_____ **Days @ $37 plus tax, gas** TOTAL: _____

12. MISCELLANEOUS COSTS: (Identify specific expenses - taxis, shuttles, phone, vehicle mileage, etc.)

a. Vehicle Mileage	_____ (# of miles)	0.00
b. Shuttle		0.00
c. Other (specify below)		20.00

Estimated Parking
TOTAL: $20.00

13. TRAINING RELATED? (if yes, attach agenda)
☐ Yes ☑ No

14. STATUS:
☑ Executive/Mgmt Svc:
☐ AFSCME:
☐ Other: *Explain:* _____

15. TRAVEL AWARDS: Agencies are mandated to maintain records on employee accumulation of travel awards as reported on their travel expense detail sheets. Travel awards include, but may not be limited to airline frequent flyer miles and hotel or car rental frequent customer awards or miles.

16. ESTIMATED COST OF TRIP:

Transportation:	$0.00
Lodging:	$0.00
Meals:	$37.50
Car Rental:	$0.00
Misc:	$20.00
TOTAL:	$57.50

17. I certify that this trip is necessary and essential to the normal discharge of DEQ responsibilites; that required monies are budgeted and alloted for expenditure; that the trip meets all the requirements mandated by ORS 292.230, OAM Policy 40.10.00, and DEQ policy.

18. EMPLOYEE SIGNATURE: Stephanie Hallock **DATE:** 8-20-03

19. SUPERVISOR SIGNATURE: for EQC **DATE:** 8-25-03

20. DA/EMT SIGNATURE: **DATE:**

$59.50

Request #980 — Approved

State of Oregon
Department of Administrative Services — Director's Office
Out-of-State Travel Authorization

Name
Stephanie Hallock

Agency
Department of Environmental Quality

Phone
503-229-5990

Email
hallock.stephanie@deq.state.or.us

Fax
503-229-6762

Date of Request
8/29/2003

Departure Date
9/4/2003

Return Date
9/4/2003

Destinations (City, State)
Seattle, WA

Purpose of trip and value to the state:
Pacific NW Director's Group (Gang of Seven) is a routine meeting that DEQ attends to meet with other Natural Resources Agency Directors from our neighboring states. She will be driving a state car and total estimated cost of this trip is $57.00.

Travel priority criteria for requests to be expended from General/Lottery Funds:
4. State Business — Criteria Reference

All travel conforms to State law and the Department of Administrative Services travel rules with the exception of the following:
No exceptions.

Delegate Name
Andrea Crozier

Delegate Email
crozier.andrea@deq.state.or.us

Submit Another Request

Exit

<-- Back

STATE OF OREGON
TRAVEL EXPENSE DETAIL SHEET

1. of Employee	2. Agency	3. Period (Month and Year)
Stephanie Hallock	Department of Environmental Quality	September-03
4. Official Station	**5. Division/ Work Unit**	**6. Regular Schedule Work Shift**
DEQ/HQ	Office of the Director	X 8:00 am - 5:00 pm Other to

7. Unrepresented [ ] Management Service [ ] Executive Service [X] Board/Commission [ ] Volunteer [ ]
Bargaining Unit Name [ ] AFSCME Other [ ]

8. Date	9. Time of Departure	10. Time of Arrival	11. Destination	12. Per Diem/ Hourly Allowance	Individual Meal Reimbursement Breakfast	Lunch	Dinner	13. Lodging	14. Total Meals and Lodging
			15. Totals						$0.00

16. Accounting Codes		17. Date	18. Miscellaneous Expenses Fares, Private Mileage, Room Tax, Telephone, Other Expenses	19. Training Related?	20 Rate Per Mile	21. Private Car Miles	22. Amount
14010 - 4100Z		09/16/03	Private Car Miles from Portland to Salem		0.360	90	32.40
4103	32.40						
Totals	32.40				23. Section Total		$32.40

24. I did/will_____ did not/will not X accept travel awards as a result of, or associated with this state business trip. SH Initials.
Completion of this block is mandatory. Travel expense reimbursement claims will not be processed if this block is left blank. Travel awards included, but may not be limited to , airline frequent flyer miles and hotel or car rental frequent customer awards or miles. Review instructions on reverse of the form.

25. REASON FOR TRAVEL: (Be specific.)
Meeting with the Governor.

26. Grand Total Amount $32.40

27. Travel Advance Amount

28. Amount Due Employee/State $32.40

29. Received Training Conducted Training

I certify that all reimbursements claimed reflect actual duty required expenses or allowances entitled; that no part thereof has been heretofore claimed or will be claimed from any other source.

30. Signature of Employee: Stephanie Hallock

31. Title: Director Date: 10/28/03

I certify that the above claimed expenses are authorized duty required expenses. Funds for payment of this claim are available in the approved budget for the period covered and have been allotted for expenditure.

32. Approved By: Helen Lottridge for EQC

33. Title: MSD Administrator Date: 10-31-03

353/VAT 17214

STATE OF OREGON
TRAVEL EXPENSE DETAIL SHEET

1. Name of Employee	2. Agency	3. Period (Month and Year)
9340000295 Stephanie Hallock Cummins	DEQ	October-03
4. Official Station	**5. Division/ Work Unit**	**6. Regular Schedule Work Shift**
DEQ	HQ	8:00 am - 5:00 X pm Other to

7. Unrepresented ☐ Management Service ☐ Executive Service X Board/Commission ☐ Volunteer ☐
Bargaining Unit Name ☐ AFSCME Other ☐

8. Date	9. Time of Departure	10. Time of Arrival	11. Destination	12. Per Diem/ Hourly Allowance	Individual Meal Reimbursement Breakfast	Lunch	Dinner	13. Lodging incl. tax	14. Total Meals and Lodging
							21.50		
10/07/03	1:00 pm		Portland>Bend	21.50			~~15.00~~	25.00	~~40.00~~ 46.50
10/08/03			Bend>John Day	15.50	7.75	7.75	PROV	55.00	70.50
10/09/03			Working in John Day	7.75	7.75	PROV	PROV	55.00	62.75
10/10/03		3:00 pm	John Day>Bend	7.75	PROV	PROV	7.75		7.75
			15. **Totals**	~~52.50~~ 52.50	~~15.50~~ 15.50	~~7.75~~ 7.75	~~22.75~~ 22.75	135.00	~~$181.00~~ 187.50

16. Accounting Codes		17. Date	18. Miscellaneous Expenses Fares, Private Mileage, Room Tax, Telephone, Other Expenses	19. Training Related?	20 Rate Per Mile	21. Private Car Miles	22. Amount
14010 - 4100Z			Personal Vehicle Mileage		0.360		
4101	187.50						
Totals	187.50				**23. Section Total**		**$0.00**

24. I did/will ____ did not/will not X accept travel awards as a result of, or associated with this state business trip. **Initials.**
Completion of this block is mandatory. Travel expense reimbursement claims will not be processed if this block is left blank. Travel awards included, but may not be limited to , airline frequent flyer miles and hotel or car rental frequent customer awards or miles. Review instructions on reverse of the form.

25. REASON FOR TRAVEL: (Be specific.)
Traveled to Bend to meet with Bend office. Carpooled with Didi from Bend to EQC meeting in John Day. Stayed in Bend on the 10th for personal reasons.

26. Grand Total Amount 187.50 ~~$181.00~~
27. Travel Advance Amount
28. Amount Due Employee/State 187.50 ~~$181.00~~ 0
29. Received Training Conducted Training

I certify that all reimbursements claimed reflect actual duty required expenses or allowances entitled; that no part thereof has been heretofore claimed or will be claimed from any other source.
30. Signature of Employee Stephanie Hallock
31. Title Director Date

I certify that the above claimed expenses are authorized duty required expenses. Funds for payment of this
32. Approved By Helen Lottridge for EQC
33. Title MSD Administrator Date 10-15-03

✓ for rmp.

State of Oregon
Department of Environmental Quality Memorandum

Date: November 13, 2003

To: Environmental Quality Commission

From: Stephanie Hallock, Director S. Hallock

Subject: Agenda Item G, Action Item: Tax Credit Consideration
December 5, 2003 EQC Meeting

Proposed Action Decide whether to take the action that the Department of Environmental Quality (DEQ, Department) recommends regarding the Pollution Control Facilities Tax Credits presented in this Staff Report.

Key Issues The Department presents its analyses and recommendations to the EQC in this agenda item. There are no key issues.

EQC Action Alternatives Any application may be postponed to a future meeting if the Environmental Quality Commission (EQC, Commission):

- Requires the Department or the applicant to provide additional information; or
- Makes a determination different from the Department's recommendation, and that determination may have an adverse effect on the applicant.

Department Recommendation The Department recommends that the EQC:

- Approve final certification of the **24** facilities detailed in Attachment B;
- Deny final certification of the **four** facilities presented in Attachment C; and
- Transfer the **two** certificates presented in Attachment D.

Agenda Item G
Action Item: Tax Credit Consideration
December 5, 2003 EQC Meeting

Attachments

A. Summary of Recommendations
B. Background and References for Final Approvals
C. Background and References for Denials
D. Certificate Transfers
E. Certified Wood Chipper Report
F. Tax Expenditure Liability Report

Available Upon Request

ORS 468.150 to 468.190 & OAR 340-016-0005 to 340-016-0080

Approved:

Section: Maggie Vandehey

Division:

Report Prepared By: Maggie Vandehey
Phone: 503-229-6878

Attachment A
Summary of Recommendations
Recommended for Approval

App #	Applicant	Claimed	Certified	Difference	% Allocable	Maximum Tax Credit	Tax Expenditure Liability	Media	Notes
6095	Willamette Graystone	$ 20,410	$ 15,970	$ (4,440)	100%	50%	$ 7,985	Air	
6438	James D. Straughan - 80% Thomas E. Straughan - 20%	49,180	49,180	0	100%	50%	24,590	NPS	
6446	John W. Lekkerkerker	166,629	144,840	(21,789)	100%	50%	72,420	Water	
6479	Kenneth R. McCoy	67,222	67,222	0	100%	35%	23,528	NPS	
6484	Terrain Tamers Chip Hauling	18,574	16,882	(1,692)	100%	35%	5,909	Water	
6501	U Pull It Salem Auto Wrecking	7,875	7,875	0	100%	50%	3,938	Water	
6517	Hermiston Power Partnership	3,874,628	3,874,628	0	100%	35%	1,356,120	Air	
6527	Fujimi America Inc.	53,744	41,227	(12,517)	100%	35%	14,429	Air	
6532	Timothy Pfeiffer	17,120	17,000	(120)	100%	35%	5,950	NPS	
6538	KLK Farm	98,610	98,610	0	53%	50%	26,132	NPS	
6557	Freres Lumber Co.	379,517	312,218	(67,301)	100%	35%	109,276	Air	
6559	William Gooding	56,266	54,921	(1,345)	100%	35%	19,222	Alt. FB	
6562	Cloudburst Recycling	5,755	5,755	0	100%	35%	2,014	Mat. Rec.	
6574	Intel Corporation	1,371,751	1,371,751	0	100%	50%	685,876	Air	
6575	Kiser Enterprises	1,569	1,046	(523)	100%	35%	366	Mat. Rec.	
6579	New KAB VIII, LLC	7,207	7,207	0	100%	35%	2,522	Mat. Rec.	
6585	Metro Metals Northwest	45,066	27,438	(17,628)	100%	35%	9,603	Mat. Rec.	
6586	Metro Metals Northwest	49,655	49,655	0	100%	35%	17,379	Mat. Rec.	
6587	Metro Metals Northwest	38,856	38,856	0	100%	35%	13,600	Mat. Rec.	
6588	Jeff Cutsforth Farm	96,599	96,599	0	100%	35%	33,810	NPS	

1. Tax expenditure liability = certified cost * % allocable * maximum allowable %.

App #	Applicant	Claimed	Certified	Difference	% Allocable	Maximum Tax Credit	Tax Expenditure Liability	Media	Notes
6596	Sharp Auto Body	$ 5,500	$ 5,500	0	100%	35%	$ 1,925	Mat. Rec.	
6600	Baker Sanitary Service	47,305	47,305	0	100%	35%	16,557	Mat. Rec.	
6603	Global Leasing	5,211	5,211	0	100%	35%	1,824	Mat. Rec.	
6606	Pacific Sanitation	145,704	145,704	0	100%	35%	50,996	Mat. Rec.	

Apps					
24	**Sum**	**6,629,954**	**6,502,599**	**(127,355)**	**2,505,971**
	Average	276,248	270,942	(5,306)	104,415
	Minimum	1,569	1,046	(67,301)	366
	Maximum	3,874,628	3,874,628	318	1,356,120
	Median	48,480	43,081	0	15,493

Recommended for Denial

App #	Applicant	Claimed Cost	Certified Cost	Difference	% Allocable	Maximum Allowable %	Tax Expenditure Liability	Media	Notes
6260	Merix Corporation	241,280		(241,280)	100%	50%		Water	
6266	Ronald and Beverly Rohde	102,479		(102,479)	0%	50%		Air	
6326	Steven E. Davidson	79,300		(79,300)	0%	50%		Alt. FB	
6400	US Gypsum	$3,044,654		(3,044,654)	100%	50%		Water	

Apps		
4	**Sum**	**3,467,713**
	Average	866,928
	Minimum	79,300
	Maximum	3,044,654
	Median	171,880

Recommended for Transfer

Certificate	From	To
3599	Farrelly & Farrelly LLC	TR & T, LLC.
4498	Simco Distributing, Inc	Fred and Doris Simmons

Attachment B
Background and References for Final Approvals

The Department recommends the Environmental Quality Commission approve certification of the **24** pollution control and material recovery facilities presented in this attachment. The individual application records and the Pollution Control Facilities Tax Credit regulations support the Director's Recommendation as shown at the top of each Review Report. The Department organized the reports by ascending application number under the following categories.

1. Air
2. Alternatives to Field Burning (shown as *Alt FB* on the tab)
3. Material Recovery (shown as *Mat Rec* on the tab)
4. Nonpoint Source Pollution Control (shown as *NPS* on the tab)
5. Water

The Commission's certification of these facilities could reduce taxes paid to the State of Oregon by a maximum of **$2,505,971**.

Definition of a "Pollution Control Facility"

The tax credit regulations provide the definition of a "pollution control facility." The regulations split the definition into several parts. The parts of the definition common to all pollution control facilities include a broad description of the asset, the environmental benefit, and the purpose of the facility:

Asset	Environmental Benefit	Pollution Control Purpose
• Land • Structure • Building • Installation • Excavation • Machinery • Equipment • Devices	Prevents, Controls, or Reduces: • Air pollution • Water pollution • Solid waste • Hazardous waste • Used oil	Required - Principal primary and most important purpose is to achieve the environmental benefit by complying with DEQ/EPA/LRAPA requirements Voluntary - Sole sole or exclusive purpose is to achieve the environmental benefit - the benefit must be substantial

Statutory Definition of "Pollution Control Facility"

ORS 468.155 Definitions for ORS 468.155 to 468.190 and 468.962

(1)(a) As used in ORS 468.155 to 468.190 and 468.962, unless the context requires otherwise, "pollution control facility" or "facility" means any land, structure, building, installation, excavation, machinery, equipment or device, or any addition to, reconstruction of or improvement of, land or an existing structure, building, installation, excavation, machinery, equipment or device reasonably used, erected, constructed or installed by any person if:

(A) The principal purpose of such use, erection, construction or installation is to comply with a requirement imposed by the Department of Environmental Quality, the federal Environmental Protection Agency or regional air pollution authority to prevent, control or reduce air, water or noise pollution or solid or hazardous waste or to recycle or provide for the appropriate disposal of used oil; or

(B) The sole purpose of such use, erection, construction or installation is to prevent, control or reduce a substantial quantity of air, water or noise pollution or solid or hazardous waste; or to recycle or provide for the appropriate disposal of used oil.

...

(2)(a) As used in ORS 468.155 to 468.190 and 468.962, "pollution control facility" or "facility" includes a nonpoint source pollution control facility.

Eligibility and Purpose

OAR 340-016-0060 Eligibility

(1) Eligible Facilities. Facilities eligible for pollution control tax credit certification shall include any land, structure, building, installation, excavation, machinery, equipment or device, or alternative methods for field sanitation and straw utilization and disposal. An eligible facility shall be reasonably used, erected, constructed or installed as:

(a) A new facility;

(b) An addition or improvement to an existing facility; or

(c) The reconstruction or replacement of an existing facility.

(2) Purpose of Facility. The facility shall meet the principal purpose requirement to be eligible for a pollution control facility tax credit certification, or if the facility is unable to meet the principal purpose requirement, the facility shall meet the sole purpose requirement to be eligible for a pollution control tax credit:

(a) Principal Purpose Requirement. The principal purpose of the facility is the most important or primary purpose of the facility. Each facility shall have only one principal purpose. The facility shall be established to comply with environmental requirements imposed by the Department, the federal Environmental Protection Agency or a regional air pollution authority to control, reduce, or prevent air, water or noise pollution, or for the material recovery of solid waste, hazardous waste or used oil; or

(b) Sole Purpose Requirement. The sole purpose of the facility shall be the exclusive purpose of the facility. The only function or use of the facility shall be the control, reduction, or prevention of air, water or noise pollution; or for the material recovery of solid waste, hazardous waste or used oil.

BACKGROUND
APPROVALS: Air Pollution Control Facilities

The Department recommends that the Environmental Quality Commission approve **five** air pollution control facilities. Each of these facilities disposes of or eliminates air pollution with the use of air cleaning devices. The Commission's certification of the facilities could reduce taxes paid to the State of Oregon by a maximum of **$2,173,686**.

Three applicants constructed facilities in response to a requirement imposed by the Department, the federal Environmental Protection Agency (EPA), or a regional air pollution authority. Commonly called "principal purpose facilities", their primary and most important purposes are to comply with requirements to control air pollution with the use of air cleaning devices. These facilities may serve other purposes but their main purpose is air pollution control.

Two applicants voluntarily installed facilities that were not required by DEQ, EPA, or a regional air pollution authority. These facilities have a **sole purpose**, meaning an exclusive pollution control purpose. Additionally, these facilities control a substantial quantity of air pollution. The Department has subtracted any portions of these facilities that serve other purposes.

Summary of Air Pollution Control Facilities

App #	Applicant	Facility Cost	% Allocable	Maximum Tax Credit	GF Liability	EQC Action
6095	Willamette Graystone, Inc.	$ 15,970	100%	50%	$ 7,985	
6517	Hermiston Power Partnership	3,874,628	100%	35%	1,356,120	
6527	Fujimi America Inc.	41,227	100%	35%	14,429	
6557	Freres Lumber Co., Inc.	312,217	100%	35%	109,276	
6574	Intel Corporation & Subsidiaries	1,371,751	100%	50%	685,876	

Apps			
5	**Sum**	**5,615,793**	**2,173,686**
	Average	1,123,159	434,737
	Minimum	15,970	7,985
	Maximum	3,874,628	1,356,120
	Median	312,217	109,276

Statutory Definition of an "Air Pollution Control Facility"

ORS 468.155 Definitions for ORS 468.155 to 468.190 and 468.962

...

(b) Such prevention, control or reduction required by this subsection shall be accomplished by:

...

(B) The disposal or elimination of or redesign to eliminate air contaminants or air pollution or air contamination sources and the use of air cleaning devices as defined in ORS 468A.005;

...

ORS 468A.005 provides the following pertinent definitions.

"Air contaminant" means a dust, fume, gas, mist, odor, smoke, vapor, pollen, soot, carbon, acid or particulate matter or any combination thereof.

"Air pollution" means the presence in the outdoor atmosphere of one or more air contaminants, or any combination thereof, in sufficient quantities and of such characteristics and of a duration as are or are likely to be injurious to public welfare, to the health of human, plant or animal life or to property or to interfere unreasonably with enjoyment of life and property throughout such area of the state as shall be affected thereby.

"Air contamination source" means any source at, from, or by reason of which there is emitted into the atmosphere any air contaminant, regardless of who the person may be who owns or operates the building, premises or other property in, at or on which such source is located, or the facility, equipment or other property by which the emission is caused or from which the emission comes.

An "Air-cleaning device" means any method, process or equipment that removes, reduces or renders less noxious air contaminants prior to their discharge in the atmosphere.

Eligibility

OAR 340-016-0060 Eligibility

...

(4) Eligible Activities. The facility shall prevent, reduce, control, or eliminate:

(a) Air contamination by use of air cleaning devices as defined in ORS 468A.005 or through equipment designed to prevent, reduce or eliminate air contaminants prior to discharge to the outdoor atmosphere;

...

State of Oregon
Department of Environmental Quality

Tax Credit Review Report

Pollution Control Facility: AIR
Final Certification
ORS 468.150 -- 468.190
OAR 340-016-0005 -- 340-016-0080

Director's Recommendation

Approve Application No. **6095 @ Reduced Cost**

Applicant: **Willamette Graystone, Inc.**

Certification of:		
Facility Cost		$15,970
Percentage Allocable	X	100%
Maximum Percentage	X	50%
Tax Credit		**$7,985**

Certificate Period: **7 years**

Applicant Identification

P.O. Box 7816
Eugene, OR 97401

Organized as: **S Corporation**
Taxpayer ID: **93-0468701**

Facility Identification

3700 Franklin Blvd.
Eugene, OR 97403

The certificate will identify the facility as:

One Filter Technology Ltd. Baghouse, Model BV-250HLF
Two Filter Technology Ltd. bin vent filters, Model BV-250

Technical Information

Willamette Graystone manufactures concrete blocks at its Eugene plant. Part of the manufacturing process is tumbling the concrete blocks to produce an antiqued finish. The process generates particulate and the applicant claims a new Filter Technology baghouse to capture this particulate. The applicant also claims two self-cleaning Filter Technology bin vent filters. The filters capture particulate generated as the applicant fills two storage silos with dry cement. The filters are mounted on top of the silos.

The new bin vent filters replaced a non self-cleaning bag-type vent filter. The bags would clog and rupture, thereby, releasing dust to the atmosphere. Prior to installing the claimed facility, airborne concrete dust and particulates would collect on all nearby buildings, equipment and vehicles. The claimed facility eliminated the dust generated by the tumbler and no visible dust is being discharged from the silos.

Taxpayer Allowed Credit

ORS 315.304(4) Criteria

The taxpayer who is allowed the credit is the:

(a) **Owner**, including a contract purchaser, of the trade or **business that uses** the Oregon property requiring a pollution control facility to prevent or minimize pollution; or

(b) Person who, as a lessee or pursuant to an agreement, conducts the trade or business that operates or utilizes such property.

Applied to this Application

Applicant is the owner of the business that uses the claimed facility.

Eligibility

Timely Filing
1999 Edition
ORS 468.165(6)
OAR 340-016-0007

Criteria

The applicant must submit the application within two years after the date that they completed construction of the facility. The final application, however, is not valid if the applicant submits the application before they complete construction or before they place the facility into operation.

Applied to this Application

The applicant **filed** the application **within** the two-year **filing requirement**. They completed construction on 6/1/2001 and filed the application less than two years later on 3/4/2002. They did not file the application before they completed construction or before they placed the facility into operation on 11/1/2001.

Purpose: Voluntary
ORS 468.155 (1)(a)(B)
OAR 340-016-0060(2)(a)

Criteria

The sole purpose, meaning the 'exclusive' purpose, of the claimed facility must be to prevent, control, or reduce a 'substantial quantity' of air pollution.

"Air Pollution" is the presence in the outdoor atmosphere of one or more air contaminants, or any combination thereof, in sufficient quantities and of such characteristics and of a duration as are or are likely to be injurious to public welfare, to the health of human, plant or animal life or to property or to interfere unreasonably with enjoyment of life and property throughout such area of the state as shall be affected thereby. ORS 468A.005

Applied to this Application

The applicant claims the facility has a **sole purpose**. The baghouse and the bin vent filters prevent a substantial quantity of particulate matter from becoming airborne. DEQ and EPA define particulates as an air pollutant. The previous controls failed and released a substantial quantity of particulate emissions into the atmosphere.

The applicant included electrical work and the primary purpose of the electrical work is unrelated to the pollution control purpose of the claimed facility. The Department subtracted the electrical costs from the claimed cost under the *Facility Cost* section below.

Method
ORS 468.155 (1)(b)(B)

Criteria

The prevention, control, or reduction must be accomplished by the disposal or elimination of air contaminants, air pollution, or air contamination sources and the use of an air cleaning device as defined in ORS 468A.005.

> "Air-cleaning device" means any method, process or equipment, which removes, reduces or renders less noxious air contaminants prior to their discharge in the atmosphere.
>
> "Air contaminant" means any dust, fume, gas, mist, odor, smoke, vapor, pollen, soot, carbon, acid or particulate matter or any combination thereof.

Applied to this Application

As defined in ORS 468A.005, the airborne particulate **meets the definition of air pollution,** and the baghouse and bin vent filters **meet the definition of an air cleaning device**. The claimed facility has eliminated 99.5% of the particulate based on the removal efficiency ratings.

Exclusions
ORS 468.155(3)
OAR 340-016-0070(3)

Criteria

The regulations provide a list of over 40 items excluded from the definition of a Pollution Control Facility. Items that do not meet the definition are ineligible for certification.

Applied to this Application

The application record did not indicate any further ineligible costs other than those discussed under the *Purpose: Voluntary* section above.

Replacement
ORS 468.155(3)(e)

Criteria

The replacement or reconstruction of all or part of a facility that the State of Oregon has previously certified as a pollution control facility under ORS 468.170 is not eligible for the tax credit with two exceptions:

1) The applicant replaced the facility because DEQ or EPA imposed a different requirement than the requirement to construct the original facility; or

2) The applicant replaced the facility before the end of its useful life.

Applied to this Application

The State of Oregon did not certify the previous controls; therefore, the claimed faclity is **not a replacement** facility. The State has not issued any previous pollution control faciltiies tax credits to the applicant or to the location.

Maximum Credit
1999 Edition
ORS 468.173(1)
OAR 340-016-0007

Criteria
The maximum tax credit is 50% if the applicant completed construction of the facility on or before December 31, 2001.

Applied to this Application
The **maximum tax credit is 50%** because the applicant completed construction of the facility on 11/01/2001.

Facility Cost

Copies of invoices substantiated the claimed facility cost. The applicant requested that the Department remove an electrical contractor's invoice because it included work not related to the claimed facility.

Referenced Section	Description of Ineligible Portion		Cost
		Claimed	$20,410
	Purpose Electrical work		-$4,440
		Certified	**$15,970**

Facility Cost Allocable to Pollution Control

ORS 468.190 (3)

Criteria
If facility cost does not exceed $50,000 then the portion of the actual costs properly allocable shall be the ratio of time the applicant uses the facility for prevention, control or reduction of air pollution.

Applied to this Application
The certified facility cost is $15,970 and the facility is used **100%** of the time for pollution control.

Compliance and Other Tax Credits

The applicant states that the facility and site are in compliance with Department rules and statutes and with EQC orders. DEQ has not issued any permits to the site.

Reviewers: PBS Engineering and Environmental
Maggie Vandehey, DEQ

State of Oregon
Department of Environmental Quality

Tax Credit Review Report

Pollution Control Facility: Air
Final Certification
ORS 468.150 -- 468.190
OAR 340-016-0005 -- 340-016-0080

Director's Recommendation

Approve Application No. **6517**

Applicant: **Hermiston Power Partnership**

Certification of:

Facility Cost		$3,874,628
Percentage Allocable	X	100%
Maximum Percentage	X	35%
Tax Credit		**$1,356,120**

Certificate Period: **10 years**

Applicant Identification

P.O. Box 30
Hermiston, OR 97838

Organized as: **Limited Liability Company**
Taxpayer ID: **93-1125-271**

Facility Identification

78910 Simplot Road
Hermiston, OR 97838

The certificate will identify the facility as:

Two - Nitrogen Oxides Selective Catalytic Reduction Systems

Technical Information

Hermiston Power Partnership installed two natural gas-fired combustion turbines to generate electric power. The combustion of natural gas produces nitrogen oxide (NO_x), which is a regulated air pollutant. The applicant claims two Selective Catalytic Reduction (SCR) Systems, installed on each of the two combustion turbines. The SCR injects ammonia gas into the exhaust of the combustion turbines before the exhaust passes through a catalyst bed. The combination of the ammonia gas and the catalyst bed chemically converts the NO_x to water vapor and nitrogen (N_2). The claimed facility consists of two 14,193-gallon ammonia storage tanks manufactured by Industrial Specialists, Inc., serial numbers V0100029 and V0100030; two custom ammonia injection systems manufactured by Peerless Manufacturing; two 2,379 cubic foot catalyst beds manufactured by Cormetech, Inc.; and a control system manufactured by Custom Instrumentation Services Corp.

The concentration of NO_x entering the SCR is between 25 and 30 parts per million (ppm). The claimed facility reduces the NO_x levels in the combustion turbines' exhaust to less than 5 ppm. Based on operating data, the claimed facility eliminates the release of more than 1,430 tons of NO_x per year if the combustion turbines are operated at maximum levels. The control system measures the inlet and outlet concentrations of NO_x and automatically adjusts the ammonia throttling valve to ensure maximum NO_x destruction efficiency. The control system also prevents excess ammonia from release to the atmosphere.

Taxpayer Allowed Credit

ORS 315.304(4) Criteria

The taxpayer who is allowed the credit must be:

(A) The owner, including a contract purchaser, of the trade or business that utilizes Oregon property requiring a pollution control facility to prevent or minimize pollution; or

(B) A person who, as a lessee or pursuant to an agreement, conducts the trade or business that operates or utilizes such property;

Applied to this Application

Applicant is the **owner** of the claimed facility and business that operates the power plant.

Eligibility

Timely Filing

OAR 340-016-0007 Criteria

The applicant must submit the application within one year after the date that they completed construction of the facility. The final application, however, is not valid if the applicant submits the application before they complete construction or before they place the facility into operation.

Applied to this Application

The applicant filed the application **within** the one-year **filing requirement**. They completed construction on 6/17/2002 and filed the application less than one year later on 5/29/2003. They did not file the application before they completed construction or before they placed the facility into operation on 6/25/2002.

Purpose: Required

ORS 468.155(1)(a)(A)
OAR 340-016-0060(2)(a) Criteria

The principal purpose of the claimed facility must be to comply with a requirement imposed by DEQ, EPA, or LRAPA to prevent, reduce, or control air pollution. The pollution control purpose must be the most important or primary purpose of the facility. The facility must have only one primary purpose.

"Air Pollution" is the presence in the outdoor atmosphere of one or more air contaminants, or any combination thereof, in sufficient quantities and of such characteristics and of a duration as are or are likely to be injurious to public welfare, to the health of human, plant or animal life or to property or to interfere unreasonably with enjoyment of life and property throughout such area of the state as shall be affected thereby. ORS 468A.005

Applied to this Application

The selective catalytic reduction system complies with Condition 2.1.b of the applicant's Air Contaminant Discharge Permit Number 30-0118. DEQ imposed the condition that states the NO_x emissions cannot exceed 6 ppm. The primary or most important purpose of the claimed facility is to reduce air pollution.

Method Criteria

ORS 468.155(1)(b)(B) The prevention, control, or reduction must be accomplished by the disposal or elimination of air contaminants, air pollution, or air contamination sources; and the use of an air cleaning device as defined in ORS 468A.005.

"Air contaminant" means a dust, fume, gas, mist, odor, smoke, vapor, pollen, soot, carbon, acid or particulate matter or any combination thereof.

"Air-cleaning device" means any method, process or equipment, which removes, reduces or renders less noxious air contaminants prior to their discharge in the atmosphere.

Applied to this Application

NO_x meets the definition of **an air contaminant** and the SCR system meets the definition of **an air cleaning device** as defined in ORS 468A.005.

Exclusions Criteria

ORS 468.155(3) OAR 340-016-0070(3) The regulations provide a list of more than 40 items excluded from the definition of a Pollution Control Facility. Items that do not meet the definition are ineligible for certification.

Applied to this Application

There are **no exclusions**.

Replacement Criteria

ORS 468.155 (3)(e) The replacement or reconstruction of all or part of a facility that the State of Oregon has previously certified as a pollution control facility under ORS 468.170 is not eligible for the tax credit with two exceptions:

1) the applicant replaced the facility due to a DEQ, EPA, or regional air pollution authority requirement that is different than the requirement to construct the original facility; or

2) the applicant replaced the facility before the end of its useful life.

Applied to this Application

The State of Oregon has not issued any Pollution Control Facilities Tax Credit Certificates to the applicant at this location; therefore, the facility is **not a replacement** facility.

Maximum Credit

ORS 468.173(3)(h)
ORS 468.170(10)
ORS 468.165(6)

Criteria

The maximum tax credit available to the applicant is 35% if the applicant filed the application between January 1, 2002 and December 31, 2008, inclusively; and the facility is located within an enterprise zone established under ORS 285B.650 to 285B.728.

Applied to this Application

The **maximum tax credit is 35%** because the applicant filed the application on May 29, 2003. The facility is located in the Greater Umatilla **Enterprise Zone**. The Department has attached a copy of the Oregon Enterprise Zone Precertification Approval signed by the Umatilla County Assessor on March 1, 1999.

Facility Cost

Copies of invoices substantiated the claimed facility cost.

Referenced Section	Description of Ineligible Portion	Cost
	Claimed	$3,874,628
	Certified	**$3,874,628**

Facility Cost Allocable to Pollution Control

The Applicant and the Department considered the following factors to determine that **100%** of the facility cost is allocable to pollution control.

Factor	Applied to this Facility
ORS 468.190(1)(a)	Saleable/Useable Commodity: The facility produces no saleable or useable commodities.
ORS468.190(1)(b)	Return on Investment (ROI): The functional life of the facility used in considering the ROI is **10** years. The claimed facility does not have a return on the investment; therefore, 100% of the facility cost is allocable to pollution control.
ORS 468.190(1)(c)	Alternative Methods: The applicant did not investigate an alternative technology because the claimed facility is the best available technology. The Reviewers concur.
ORS 468.190(1)(d)	Savings/Increased Costs: The application record does not show there are any savings or increases in costs.
ORS 468.190(1)(e)	Other Relevant Factors: The application record does not indicate there are any other relevant factors.

Compliance

Patty Jacobs, DEQ Eastern Region staff assigned to the source, affirmed that the facility and site are in compliance with Department rules and statutes, and with EQC orders. DEQ issued the following permits to the applicant at this site: Storm Water Permit Number 1200-Z on June 25, 2002, and an Air Contaminant Discharge Permit number 30-0118 on September 25, 2002.

Reviewers: PBS Engineering and Environmental
Maggie Vandehey, DEQ

State of Oregon
Department of Environmental Quality

Tax Credit Review Report

Pollution Control Facility: Air
Final Certification
ORS 468.150 -- 468.190
OAR 340-016-0005 -- 340-016-0080

Director's Recommendation

Approve Application No. **6527** @ **Reduced Cost**

Applicant: **Fujimi America Inc.**

Certification of:

Facility Cost		$41,227
Percentage Allocable	X	100%
Maximum Percentage	X	35%
Tax Credit		**$14,429**

Certificate Period: **10 years**

Applicant Identification

11200 SW Leveton Drive
Tualatin, OR 97062

Organized as: **C Corp.**
Taxpayer ID: **93-09820-49**

Facility Identification

11200 SW Leveton Drive
Tualatin, OR 97062

The certificate will identify the facility as:

One - Hydrokinetic Systems ammonia wet scrubber, Model HIS 2000-1601-0

Technical Information

Fujimi America Inc. formulates liquid polishing compounds for the semiconductor wafer manufacturing industry. The applicant claims a wet scrubber system to control ammonia emissions from a new production process. The system includes a vertical 25-inch diameter by 13-foot high wet scrubber, a re-circulation pump, a pH controller, and a sulfuric acid metering pump. The exhaust fan's capacity is 1000 cubic feet per minute. The scrubber has a 99% destruction efficiency and removes approximately 320 pounds of ammonia emissions per year.

Taxpayer Allowed Credit

ORS 315.304(4) Criteria

The taxpayer who is allowed the credit must be:

(a) **The owner**, including a contract purchaser, of the trade or **business** that utilizes Oregon property requiring a pollution control facility to prevent or minimize pollution; or

(b) A person who, as a lessee or pursuant to an agreement, conducts the trade or business that operates or utilizes such property;

Applied to this Application

Applicant is the **owner** and operator of the facility located at the address above.

Eligibility

Timely Filing
2001 Edition
ORS 468.165(6)

Criteria

The applicant must submit the application within one year after the date that they complete construction of the facility. The final application, however, is not valid if the applicant submits the application before they complete construction or before they place the facility into operation.

Applied to this Application

The applicant **filed** the application **within** the one-year **filing requirement**. They completed construction on 2/28/2003 and filed the application less than one year later on 6/12/2003. They did not file the application before they completed construction or before they placed the facility into operation on 3/24/2003.

Purpose: Voluntary
ORS 468.155 (1)(a)(B)
OAR 340-016-0060(2)(a)

Criteria

The sole purpose, meaning the 'exclusive' purpose, of the claimed facility must be to prevent, control, or reduce a substantial quantity of air pollution.

"Air Pollution" is the presence in the outdoor atmosphere of one or more air contaminants, or any combination thereof, in sufficient quantities and of such characteristics and of a duration as are or are likely to be injurious to public welfare, to the health of human, plant or animal life or to property or to interfere unreasonably with enjoyment of life and property throughout such area of the state as shall be affected thereby. (ORS 468A.005)

Applied to this Application

The ammonia wet-scrubber reduces a substantial quantity of air pollution. It prevents approximately 320 pounds of ammonia fumes from being released into the atmosphere each year.

Method
ORS 468.155 (1)(b)(B)

Criteria

The prevention, control, or reduction must be accomplished by the disposal or elimination of air contaminants, air pollution, or air contamination sources; and the use of an air cleaning device as defined in ORS 468A.005.

"Air-cleaning device" means any method, process or equipment, which

removes, reduces or renders less noxious air contaminants prior to their discharge in the atmosphere.

"Air contaminant" means a dust, fume, gas, mist, odor, smoke, vapor, pollen, soot, carbon, acid or particulate matter or any combination thereof.

Applied to this Application
The ammonia wet scrubber system **meets the definition of** an air-cleaning device. Ammonia fumes **meet the definition of** an air contaminant. The scrubber system reduces a substantial quantity of air pollution by removing approximately 320 pounds of ammonia emissions every year.

Exclusions
ORS 468.155(3)
OAR 340-016-0070(3)

Criteria
The regulations provide a list of more than 40 items excluded from the definition of a Pollution Control Facility. Items that do not meet the definition are ineligible for certification.

Applied to this Application
Interior ducting from the process equipment to the scrubber is not eligible for certification because it makes an **insignificant contribution** to the pollution control purpose of the facility. The applicant would have had to install the internal ducting with or without the claimed facility to protect employees from the toxic ammonia fumes. The Department subtracted the ducting costs from the claimed cost under the *Facility Cost* section.

Replacement
ORS 468.155(3)(e)

Criteria
The replacement or reconstruction of all or part of a facility that the State of Oregon has previously certified as a pollution control facility under ORS 468.170 is not eligible for the tax credit with two exceptions:

1) the applicant replaced the facility due to a DEQ, EPA, or regional air pollution authority requirement that is different than the requirement to construct the original facility; or

2) the applicant replaced the facility before the end of its useful life.

Applied to this Application
The claimed facility is **not a replacement** of a previously certified as a Pollution Control Facility. The EQC issued one certificate to the applicant at this location for a water pollution control.

Maximum Credit
ORS 468.173(3)(g)

Criteria
The maximum tax credit is 35% if the applicant submitted the application between January 1, 2002 and December 31, 2008, inclusively; and construction or installation of the facility is entirely voluntary and no portion of it is required in order to comply with a federal law administered by the United States Environmental Protection Agency, a state law administered by the Department of Environmental Quality or a law administered by a regional air pollution authority.

Applied to this Application
The **maximum tax credit is 35%** because the applicant submitted the application on 6/12/2003, and the applicant **voluntarily constructed** or installed the facility.

Facility Cost

Copies of invoices substantiated the claimed facility cost.

Referenced Section	Description of Ineligible Portion	Cost
	Claimed	$53,744
Exclusions	Labor & Materials for Interior Ducting	-$12,517
	Certified	**$41,227**

Facility Cost Allocable to Pollution Control

ORS 468.190 (3) Criteria

If the cost of the facility does not exceed $50,000, the portion of the actual costs properly allocable shall be in the proportion that the ratio of the time the facility is used for prevention, control or reduction of air, water or noise pollution or solid or hazardous waste or to recycling or appropriately disposing of used oil bears to the entire time the facility is used for any purpose.

Applied to this Application
The certified facility cost is **$41,227** and the facility is used **100%** of the time for pollution control.

Compliance

DEQ does not require the applicant to have an Air Contaminant Discharge Permit for the new process; therefore, DEQ has not assigned air quality staff to the source. DEQ issued the following permits to the applicant at this site: NPDES Storm Water Discharge Permit Numbers 1200-Z and 1200-C issued October 1, 2002.

Reviewers: Dennis Cartier, PBS Engineering and Environmental
Maggie Vandehey, DEQ

State of Oregon
Department of
Environmental
Quality

Tax Credit Review Report

Pollution Control Facility: Air
Final Certification
ORS 468.150 -- 468.190
OAR 340-016-0005 -- 340-016-0080

Director's Recommendation

Approve Application No. **6557@ Reduced Cost**

Applicant: **Freres Lumber Co., Inc.**

Certification of:

Facility Cost		$312,217
Percentage Allocable	X	100%
Maximum Percentage	X	35%
Tax Credit		**$109,276**

Certificate Period: **7 years**

Applicant Identification

47842 Lyons-Mill City Drive
Mill City, OR 97358

Organized as: **C Corp.**
Taxpayer ID: **93-0357299**

Facility Identification

141 14th Street
Lyons, OR 97358

The certificate will identify the facility as:

Three-Ducon Type UW-4, Model 3 Wet Venturi Scrubbers

Technical Information

Freres Lumber Co. is a wood products manufacturer. In one of its processes, the applicant peels veneer from raw logs, dries the veneer, and lays it into plywood. The applicant has three veneer dryers. The veneer drying process creates fine particulate matter (PM_{10}), carbon monoxide (CO) and volatile organic compound (VOC) emissions. The applicant replaced the older, inefficient scrubbers with the claimed facility.

The applicant claims the three Ducon Type UW-4, Model 3 wet venturi scrubbers, two 75-hp fans, one 100-hp fan, a structural support system, a water re-circulation skimmer tank and approximately 300 feet of 36-inch diameter exterior ducting running from the building to the scrubbers. The three scrubbers have a 99+% collection efficiency. The manufacturer estimated the following total emission reductions based on the old scrubbers' 1994 performance test: 26.75 tons PM_{10} /year, 5.5 tons CO/year, and 12.7 tons VOC/year.

Taxpayer Allowed Credit

ORS 315.304(4)

Criteria

The taxpayer who is allowed the credit is the:

a. Owner, including a contract purchaser, of the trade or business that uses the Oregon property requiring a pollution control facility to prevent or minimize pollution; or

b. Person who, as a lessee or pursuant to an agreement, conducts the trade or business that operates or utilizes such property.

Applied to this Application

Applicant is the **owner** of the business that uses the claimed facility.

Eligibility

Timely Filing
2001 Edition
ORS 468.165(6)

Criteria

The applicant must submit the application within one year after the date that they completed construction of the facility. The final application, however, is not valid if the applicant submits the application before they complete construction or before they place the facility into operation.

Applied to this Application

The applicant filed the application **within** the one-year **filing requirement**. They completed construction on 8/1/2002 and filed the application less than one year later on 7/17/2003. They did not file the application before they completed construction or before they placed the facility into operation on 8/1/2002.

Purpose: Required
ORS 468.155 (1)(a)(A)
OAR 340-016-0060(2)(a)

Criteria

The principal purpose of the claimed facility must be to comply with a requirement imposed by DEQ, EPA, or LRAPA to prevent, reduce, or control air pollution. That principal purpose must be the most important or primary purpose of the facility. The facility must have only one primary purpose.

> "Air Pollution" is the presence in the outdoor atmosphere of one or more air contaminants, or any combination thereof, in sufficient quantities and of such characteristics and of a duration as are or are likely to be injurious to public welfare, to the health of human, plant or animal life or to property or to interfere unreasonably with enjoyment of life and property throughout such area of the state as shall be affected thereby. ORS 468A.005

Applied to this Application

The three Ducon wet venturi scrubbing systems comply with Conditions 3 and 10 of the applicant's Air Contaminant Discharge Permit. This DEQ imposed permit sets limits on PM_{10}, CO, VOC, and opacity emissions. The primary or most important purpose of the claimed facility is to control air pollution.

Method
ORS 468.155 (1)(b)(B)

Criteria

The prevention, control, or reduction must be accomplished by the disposal or elimination of air contaminants, air pollution, or air contamination sources; and the use of an air cleaning device as defined in ORS 468A.005:

> "Air-cleaning device" means any method, process or equipment, which removes, reduces or renders less noxious air contaminants prior to their discharge in the atmosphere.
>
> "Air contaminant" means any dust, fume, gas, mist, odor, smoke, vapor, pollen, soot, carbon, acid or particulate matter or any combination thereof.

Applied to this Application

The three Ducon wet venturi scrubbing systems **meet the definition** of an air-cleaning device as defined by ORS 468A.005. PM_{10}, CO and VOC **meet the definition of** air pollution and contaminants as defined by ORS 468A.005.

Exclusions
ORS 468.155(3)
OAR 340-016-0070(3)

Criteria

The regulations provide a list of more than 40 items excluded from the definition of a Pollution Control Facility. Items that do not meet the definition are ineligible for certification.

Applied to this Application

The applicant included the cost of **external lighting**, which the regulations **exclude**. The Department subtracted the costs associated with external lighting from the claimed cost under the *Facility Cost* section below.

Replacement
ORS 468.155 (3)(e)

Criteria

The replacement or reconstruction of all or part of a facility that the State of Oregon has previously certified as a pollution control facility under ORS 468.170 is not eligible for the tax credit with two exceptions:

1) the applicant replaced the facility due to a **DEQ,** EPA, or regional air pollution authority **requirement** that is different than the requirement to construct the original facility; or

2) the applicant replaced the facility before the end of its useful life.

Applied to this Application

The new scrubber installed on the #2 dryer is eligible for a **like-for-like** replacement because the applicant replaced the **previously certified** facility due to a DEQ requirement. The requirement was different from the requirement that prompted the construction of the original facility. The Department subtracted the ineligible cost from the claimed cost under the *Facility Cost* section below.

DEQ raised concern over visible emissions discharged from the previously certified facility in an Air Quality Site Inspection Report dated August 1, 2001. They requested that the applicant address the visible emissions. In response, the

applicant replaced the previously certified facility with a portion of the claimed facility.

The State of Oregon issued certificate number 1230 to North Santiam Plywood on October 17, 1980. (North Santiam Plywood sold the plant to Hood Lumber Company on October 10, 1997. Then Hood Lumber Company sold it to Freres Lumber Company on April 8, 1998.) The certificate was for controlling air pollution from one of the three veneer dryers. The State of Oregon has not issued any Pollution Control Facilities Tax Credit Certificates to Freres Lumber Company at this location.

Maximum Credit
ORS 468.173(3)(h)
ORS 468.170(10)
ORS 468.165(6)

Criteria
The maximum tax credit available to the applicant is 35% if the application was filed between January 1, 2002 and December 31, 2008, inclusively; and the facility is located within an area that Economic and Community Development Department designated as a distressed area, as defined in ORS 285A.010.

Applied to this Application
The maximum tax credit is **35%** because the applicant filed the application on 7/17/2003 and the facility is located in a **designated economic distressed area**.

Facility Cost

Copies of invoices substantiated the claimed facility cost.

Referenced Section	Description of Ineligible Portion		Cost	
			Claimed	$379,518
Exclusions	Outdoor Lighting			-2,237
Replacement	The applicant correctly calculated the like-for-like replacement cost of the original Horizontal Scrubber for Veneer Dryer #2 based on Consumer Price Index (CPI) as described in Department guidance.			
	Year Placed-in-Service	Oct-80		
	Facility Cost	$29,956		
	Like-for-like Factor **X**	2.1720		
	Like-for-like Replacement Cost	$65,064		-65,064
			Certified	**$312,217**

Facility Cost Allocable to Pollution Control

The Applicant and the Department considered the following factors to determine that **100%** of the facility cost is allocable to pollution control.

Factor	Applied to this Facility
ORS 468.190(1)(a)	Salable/Usable Commodity: The facility produces no salable or usable commodities.
ORS 468.190(1)(b)	Return on Investment (ROI): The functional life of the facility used in considering the ROI is **39** years. The claimed facility does not have a return on the investment; therefore, 100% of the facility cost is allocable to pollution control.
ORS 468.190(1)(c)	Alternative Methods: The applicant did investigate alternative technologies and concluded the claimed facility is the best available technology. The Reviewers concur.
ORS 468.190(1)(d)	Savings/Increased Costs: The application record does not show there are any savings or increases in costs.
ORS 468.190(1)(e)	Other Relevant Factors: The application record does not indicate there are any other relevant factors.

Compliance

Gary Andes, DEQ's Western region staff assigned to the sources, affirmed that the facility and site are in compliance with Department rules and statutes, and with EQC orders. DEQ issued the following permits to the applicant at this site: Air Contaminant Discharge Permit No. 22-6002, issued on 10/31/00, and an NPDES Storm Water Permit No. 1200-Z issued on 7/22/97.

Reviewers: PBS Engineering and Environmental
Maggie Vandehey, Oregon DEQ

State of Oregon
Department of
Environmental
Quality

Tax Credit Review Report

Pollution Control Facility: Air
Final Certification
ORS 468.150 -- 468.190
OAR 340-016-0005 -- 340-016-0080

Director's Recommendation

Approve Application No. **6574**

Applicant: **Intel Corporation and Subsidiaries**

Certification of:

Facility Cost		$1,371,751
Percentage Allocable	X	100%
Maximum Percentage	X	50%
Tax Credit		**$685,876**

Certificate Period: **10 years**

Applicant Identification

2200 Mission College Drive, SC4-26
Santa Clara, CA 95052

Organized as: **C Corp.**
Taxpayer ID: **94-1672743**

Facility Identification

Ronler Acres D1C Facility
2501 NW 229th Avenue
Hillsboro, OR 97124

The certificate will identify the facility as:

Two – Munters Zeolite thermal oxidizer units located at D1C. Model IZS-DS2900-TH

Technical Information

Intel's Ronler Acres facility manufactures semiconductor devices. The various manufacturing operations generate organic solvent emissions that the Department of Environmental Quality (DEQ) classifies as volatile organic compounds (VOC). The applicant installed two thermal oxidizer units to reduce these VOC emissions at the D1C plant. The thermal oxidizers destroy VOCs by converting them into water and carbon dioxide. Munters Corporation manufactured the units that have a destruction efficiency of 97%. At the current production levels, each unit removes approximately 15 tons of VOC emissions per year. The applicant anticipates each thermal oxidizer will destroy approximately 60 tons of VOC emissions at maximum production levels.

Taxpayer Allowed Credit

ORS 315.304(4)

Criteria

The taxpayer who is allowed the credit is the:

a. Owner, including a contract purchaser, of the trade or business that uses the Oregon property requiring a pollution control facility to prevent or minimize pollution; or

b. Person who, as a lessee or pursuant to an agreement, conducts the trade or business that operates or utilizes such property.

Applied to this Application

Applicant is the **owner** of the business that uses the claimed facility.

Eligibility

Timely Filing

ORS 468.173(1)
OAR 340-016-0007

Criteria

The applicant must file the application within two years of the date that they completed construction of the facility if they completed construction on or before December 31, 2001. The final application, however, is not valid if the applicant submits the application before they complete construction or before they place the facility into operation.

Applied to this Application

The applicant filed the application **within** the two-year **filing requirement**. They completed construction on 12/1/2001 and filed the application less than two years later on 8/25/2003. They did not file the application before they completed construction or before they placed the facility into operation.

The applicant placed the facility into operation on 9/1/01 and then made miscellaneous adjustments before completing construction on 12/1/01. The adjustments did not impact VOC emissions.

Purpose: Required

ORS 468.155 (1)(a)(A)
OAR 340-016-0060(2)(a)

Criteria

The principal purpose of the claimed facility must be to comply with a requirement imposed by DEQ, EPA, or LRAPA to prevent, reduce, or control air pollution. That principal purpose must be the most important or primary purpose of the facility. The facility must have only one primary purpose.

> "Air Pollution" is the presence in the outdoor atmosphere of one or more air contaminants, or any combination thereof, in sufficient quantities and of such characteristics and of a duration as are or are likely to be injurious to public welfare, to the health of human, plant or animal life or to property or to interfere unreasonably with enjoyment of life and property throughout such area of the state as shall be affected thereby. ORS 468A.005

Applied to this Application

The two thermal oxidizer units manufactured by Munters Corporation comply with Section 2.1 of the applicant's Air Contaminant Discharge Permit imposed by DEQ. The primary or most important purpose of the claimed facility is to reduce air pollution.

Method
ORS 468.155 (1)(b)(B)

Criteria

The prevention, control, or reduction must be accomplished by the disposal or elimination of air contaminants, air pollution, or air contamination sources; and the use of an air cleaning device as defined in ORS 468A.005.

"Air contaminant" means a dust, fume, gas, mist, odor, smoke, vapor, pollen, soot, carbon, acid or particulate matter or any combination thereof.

"Air-cleaning device" means any method, process or equipment, which removes, reduces or renders less noxious air contaminants prior to their discharge in the atmosphere.

Applied to this Application

VOC emissions **meet the definition of air pollution** because they are regulated by the Oregon DEQ. The two thermal oxidizers **meet the definition of an air cleaning device** because they reduce VOC emissions.

Exclusions
ORS 468.155(3)
OAR 340-016-0070(3)

Criteria

The regulations provide a list of more than 40 items excluded from the definition of a Pollution Control Facility. Items that do not meet the definition are ineligible for certification.

Applied to this Application

There are **no exclusions**.

Replacement
ORS 468.155(3)(e)

Criteria

The replacement or reconstruction of all or part of a facility that the State of Oregon has previously certified as a pollution control facility under ORS 468.170 is not eligible for the tax credit with two exceptions:

1) the applicant replaced the facility due to a DEQ, EPA, or regional air pollution authority requirement that is different than the requirement to construct the original facility; or

2) the applicant replaced the facility before the end of its useful life.

Applied to this Application

The State of Oregon issued 20 certificates to the applicant. Three of the six certificates issued to this location were for controlling air pollution. The claimed facility **did not replace a previously certified facility**.

Facility Cost

Copies of invoices substantiated the claimed facility cost.

Referenced Section	Description of Ineligible Portion	Cost
	Claimed	$1,371,751
	Certified	**$1,371,751**

Facility Cost Allocable to Pollution Control

The Applicant and the Department considered the following factors to determine that **100%** of the facility cost is allocable to pollution control.

Factor	Applied to this Facility
ORS 468.190(1)(a)	Salable/Usable Commodity: The facility produces no salable or usable commodities.
ORS 468.190(1)(b)	Return on Investment (ROI): The functional life of the facility used in considering the ROI is **10** years. The claimed facility does not have a return on the investment; therefore, 100% of the facility cost is allocable to pollution control.
ORS 468.190(1)(c)	Alternative Methods: The applicant did not investigate an alternative technology because the claimed facility is the best available technology. The Reviewers concur.
ORS 468.190(1)(d)	Savings/Increased Costs: The application record does not show there are any savings or increases in costs.
ORS 468.190(1)(e)	Other Relevant Factors: The application record does not indicate there are any other relevant factors.

Compliance

Greg Gruno is the DEQ Northwest Region staff assigned to the source. He affirmed that the facility and site are in compliance with Department rules and statutes and with EQC orders. DEQ issued Air Contaminant Discharge Permit 34-2809, on 11/18/1994.

Reviewers: PBS Engineering and Environmental
Maggie Vandehey, DEQ

BACKGROUND
APPROVALS: Alternatives to Open Field Burning Facilities

The Department recommends the Commission approve **one** alternative to open field burning facility for certification as a pollution control facility. The Commission's certification could reduce taxes paid to the State of Oregon by a maximum of **$19,222**.

The Department and the Commission have traditionally treated alternatives to open field burning as *principal purpose* facilities. This means that the applicant installed the facility to meet a DEQ or EPA requirement. DEQ required that the state reduce the maximum number of acres that are open-burned in compliance with acreage limitations and allocations under OAR 340-266-0060.

Statutory Definition of "Alternatives to Field Burning"

ORS 468.150 Field sanitation and straw utilization and disposal methods as "pollution control facilities."

After alternative methods for field sanitation and straw utilization and disposal are approved by the Department of Environmental Quality, "pollution control facility," as defined in ORS 468.155, shall include such approved alternative methods and persons purchasing and utilizing such methods shall be eligible for the benefits allowed by ORS 468.155 to 468.190 and 468.962. [1975 c.559 §15; 1999 c.59 §136]

> Note: 468.150 was enacted into law by the Legislative Assembly but was not added to or made a part of ORS chapter 468 or any series therein by legislative action. See Preface to Oregon Revised Statutes for further explanation.

Eligibility

OAR 340-016-0060 Eligibility

...

(4) Eligible Activities. ...

...

(b) Alternatives to Open Field Burning. The facility shall reduce or eliminate:

(A) Open field burning and may include equipment, facilities, and land for gathering, densifying, handling, storing, transporting and incorporating grass straw or straw based products;

(B) Air quality impacts from open field burning and may include propane burners or mobile field sanitizers; or

(C) Grass seed acreage that requires open field burning. The facility may include:

(i) Production of alternative crops that do not require open field burning;

(ii) Production of rotation crops that support grass seed production without open field burning; or

(iii) Drainage tile installations and new crop processing facilities.

State of Oregon
Department of
Environmental
Quality

Tax Credit Review Report

Pollution Control Facility: Field Burning
Final Certification
ORS 468.150 -- 468.190
OAR 340-016-0005 -- 340-016-0080

Director's Recommendation

Approve Application No. **6559 @ Reduced Cost**

Applicant: **William Gooding**

Certification of:

Facility Cost		$54,921
Percentage Allocable	X	100%
Maximum Percentage	X	35%
Tax Credit		**$19,222**

Certificate Period: **10 years**

Applicant Identification

5357 St Paul Hwy
St Paul, OR 97137

Organized as: **Individual**
Taxpayer ID: **542-54-6164**

Facility Identification

5357 St Paul Hwy
St Paul, OR 97137

The certificate will identify the facility as:

A 60' x 156' x 22' pole building for storing straw

Technical Information

William Gooding is a grass seed producer who owns 300 acres and leases 275 acres. The applicant farms approximately 153 acres in perennial ryegrass and 65 acres in annual fescue grass-seed cultivation. The applicant claims a metal-sheeted 60' x 156' x 22' pole barn for storing baled straw after grass-seed harvesting. The building has a dirt floor and no electrical service.

The straw storage building can store approximately 600 tons. In calculating the number of acres removed from open field burning we use the OSU standard correlation factor of 2.73 tons per acre multiplied by the 218 acres in perennial and annual grass seed equals 595 tons. Therefore the applicant has removed all 218 acres from open field burning as a result of this facility.

The applicant last burned 80 acres in 1999. The applicant used a combination of propane burning, flail chopping, baling, and stack burning to sanitize and remove the straw residue.

Taxpayer Allowed Credit

ORS 315.304(4)

Criteria

The taxpayer who is allowed the credit is the:

a. **Owner**, including a contract purchaser, **of the** trade or **business** that uses the Oregon property requiring a pollution control facility to prevent or minimize pollution; or

b. Person who, as a lessee or pursuant to an agreement, conducts the trade or business that operates or utilizes such property; or

c. Person who, as an owner, including a contract purchaser, or lessee, owns or leases a pollution control facility that is used for recycling, material recovery or energy recovery as defined in ORS 459.005.

Applied to this Application

Applicant is the **owner** of the business that uses the claimed facility.

Eligibility

Timely Filing

2001 Edition
ORS 468.165(6)

Criteria

The applicant must submit the application within one year after the date that they complete construction of the facility. The final application, however, is not valid if the applicant submits the application before they complete construction or before they place the facility into operation.

Applied to this Application

The applicant **filed** the application **within** the one-year filing requirement. They completed construction on 8/9/2002 and submitted the application on 7/16/2003. They did not file the application before they completed construction or before they placed the facility into operation on 7/25/2002.

Purpose: Required

ORS 468.155 (1)(a)(A)
OAR 340-016-0060 (4)(b)

Criteria

The principal purpose of the claimed facility must be to reduce air pollution by reducing the maximum acreage to be open-burned in compliance with OAR 340-016-0060 (Acreage limitations, allocations).

The facility shall **reduce** or eliminate:

a. **Open field burning** and may include equipment, facilities, and land for gathering, densifying, handling, **storing**, transporting and incorporating **grass straw** or straw based products;

b. Air quality impacts from open field burning and may include propane burners or mobile field sanitizers; or

c. Grass seed acreage that requires open field burning.

Applied to this Application

The applicant uses the pole structure for straw storage to comply with OAR 340-016-0060 by reducing the maximum acreage to be open-burned in the

Willamette Valley. The primary or most important purpose of the claimed facility is to reduce air pollution. The stored straw sells for approximately $5.00 per ton.

Method
ORS 468.155 (1)(a)(B)
OAR 340-016-0060(4)(b)(C)

Criteria
The facility shall reduce or eliminate open field burning and its effects on air quality and may include:

a. Production of alternative crops that do not require open field burning;
b. Production of rotation crops that support grass seed production without open field burning; or
c. Drainage tile installations and new crop processing facilities.

Applied to this Application
The effects of field burning **meets the definition** of an air contaminant as defined by ORS 468A.005. The pole building **meets the definition** of an alternative to field burning by eliminating open-field and stack burning.

Exclusions
ORS 468.155(3)
OAR 340-016-0070(3)

Criteria
The regulations provide a list of over 40 items excluded from the definition of a Pollution Control Facility. Items that do not meet the definition are ineligible for certification.

Applied to this Application
The application included the cost of **roadway improvements**, which the regulations **exclude**. The Department subtracted the costs associated with the road improvements from the claimed cost under the *Facility Cost* section below.

Replacement
ORS 468.155(3)(e)

Criteria
The replacement or reconstruction of all or part of a facility that the State of Oregon has previously certified as a pollution control facility under ORS 468.170 is not eligible for the tax credit with two exceptions:

1) the applicant replaced the facility due to a **DEQ,** EPA, or regional air pollution authority **requirement** that is different than the requirement to construct the original facility; or
2) the applicant replaced the facility before the end of its useful life.

Applied to this Application
The State of Oregon has not issued any Pollution Control Facilities Tax Credit Certificates to the applicant at this location; therefore, the facility is **not a replacement** facility.

Maximum Credit Criteria
ORS 468.173(3)(f) The maximum tax credit is 35% if the applicant submitted the application between January 1, 2002 and December 31, 2008, inclusively, and the certified cost does not exceed $200,000.

Applied to this Application
The **maximum tax credit is 35%** because the applicant submitted the application on 7/16/2003, and the certified facility cost is **$54,921**.

Facility Cost

Copies of invoices substantiated the claimed facility cost.

Referenced Section	Description of Ineligible Portion	Cost
	Claimed	$56,266
Purpose	Roadway improvement costs specifically excluded by rule	-$1,345
	Certified	**$54,921**

Facility Cost Allocable to Pollution Control

The Applicant and the Department considered the following factors to determine that **100%** of the facility cost is allocable to pollution control.

Factor	Applied to this Facility
ORS 468.190(1)(a)	Salable/Usable Commodity: The facility produces straw bales that sale for approximately $5.00 per ton. The applicant considered the revenue in the ROI calculation.
ORS 468.190(1)(b)	Return on Investment (ROI): The functional life of the facility used in considering the ROI is **20** years. The percentage of the cost allocable to pollution control is **100%** when calculated according to rule.
ORS 468.190(1)(c)	Alternative Methods: The applicant did not investigate an alternative technology because the claimed facility is the best available technology.
ORS 468.190(1)(d)	Savings/Increase Costs: The applicant considered the small amount of savings in the ROI calculations.
ORS 468.190(1)(e)	Other Relevant Factors: The application record does not indicate there are any other relevant factors.

Compliance

The applicant states that the facility and site are in compliance with Department rules and statutes, and with EQC orders. DEQ has issued no permits to the applicant at this site.

Reviewers: Jeannette Freeman, DEQ
Maggie Vandehey, DEQ

BACKGROUND
APPROVALS: Material Recovery Facilities

The Department recommends that the EQC certify the **10** material recovery facilities summarized below and represented in the attached Review Reports. The pollution control certification of these facilities could reduce taxes paid to the State of Oregon by a maximum of **$116,786**.

Summary of Material Recovery Facilities

App #	Applicant	Facility Cost	% Allocable	Maximum Tax Credit	GF Liability	EQC Action
6562	Cloudburst Recycling, Inc.	$ 5,755	100%	35%	$ 2,014	
6575	Kiser Enterprises, Inc.	1,046	100%	35%	366	
6579	New KAB VIII, LLC	7,207	100%	35%	2,522	
6585	Metro Metals Northwest, Inc.	27,438	100%	35%	9,603	
6586	Metro Metals Northwest, Inc.	49,655	100%	35%	17,379	
6587	Metro Metals Northwest, Inc.	38,856	100%	35%	13,600	
6596	Sharp Auto Body	5,500	100%	35%	1,925	
6600	Baker Sanitary Service, Inc.	47,305	100%	35%	16,557	
6603	Global Leasing, Inc.	5,211	100%	35%	1,824	
6606	Pacific Sanitation, Inc.	145,704	100%	35%	50,996	
Apps	**Sum**	**333,677**			**116,786**	
10	**Average**	33,368			11,679	
	Minimum	1,046			366	
	Maximum	145,704			50,996	
	Median	17,323			6,063	

Statutory Definition of "Material Recovery"

ORS 468.155 Definitions for ORS 468.155 to 468.190 and 468.962

...

(b) Such prevention, control or reduction required by this subsection shall be accomplished by:

...

(D) The use of a material recovery process which obtains useful material from material that would otherwise be solid waste as defined in ORS 459.005, hazardous waste as defined in ORS 466.005, or used oil as defined in ORS 459A.555; or

...

Eligibility

OAR 340-016-0060 Eligibility

...

(4) Eligible Activities. The facility shall prevent, reduce, control, or eliminate:

...

(d) Hazardous Waste, Solid Waste and Used Oil Material Recovery. The facility shall eliminate or obtain useful material from material that would otherwise be solid waste as defined in ORS 459.005, hazardous waste as defined in ORS 466.005, or used oil as defined in ORS 468.850. The facility shall produce an end product of utilization that is an item of real economic value and is competitive with an end product produced in another state. The facility shall produce the end product by mechanical processing, chemical processing; or through the production, processing, pre-segregation, or use of materials which:

(A) Have useful chemical or physical properties which may be used for the same or other purposes; or

(B) May be used in the same kind of application as its prior use without change in identity.

State of Oregon
Department of Environmental Quality

Tax Credit Review Report

Pollution Control Facility: Material Recovery
Final Certification
ORS 468.150 -- 468.190
OAR 340-016-0005 -- 340-016-0080

Director's Recommendation

Approve Application No. **6562**

Applicant: **Cloudburst Recycling, Inc.**

Certification of:

Facility Cost		$5,755
Percentage Allocable	X	100%
Maximum Percentage	X	35%
Tax Credit		**$2,014**

Certificate Period: **5 years**

Applicant Identification

843 North Knott
PO Box 12106
Portland, OR 97212

Organized as: **S Corporation**
Taxpayer ID: **93-1125177**

Facility Identification

Rejuvenation, Inc.
2550 NW Nicolai
Portland, OR 97210

The certificate will identify the facility as:

One - Used/Factory Reconditioned Philadelphia Tramrail Downstroke Baler, Model 3400HD, Serial # 01K548R

Technical Information

Cloudburst Recycling, Inc. is a commercial and residential collection company serving 5,000 customers in Portland. The company claims a factory reconditioned Philadelphia Tramrail Baler, Model 34000HR 460 Volt, Serial # 01K548R. The equipment bales cardboard shipping cartons at Rejuvenation, Inc.'s site in NW Portland.

Rejuvenation, Inc. stored cardboard in the parking lot before it used the baler. The unprotected cardboard degraded in the sun and wet weather conditions. The applicant frequently discarded the degraded cardboard as trash rather than recycling it.

Taxpayer Allowed Credit

ORS 315.304(4)

Criteria

The taxpayer who is allowed the credit is the:

a. **Owner**, including a contract purchaser, of the trade or **business** that uses the Oregon property requiring a pollution control facility to prevent or minimize pollution; or

b. Person who, as a lessee or pursuant to an agreement, conducts the trade or business that operates or utilizes such property; or

c. Person who, as an owner, including a contract purchaser, or lessee, owns or leases a pollution control facility that is used for recycling, material recovery or energy recovery as defined in ORS 459.005.

Applied to this Application

The applicant is the **owner of the baler** that the lessee uses in a material recovery process.

Eligibility

Timely Filing

1999 Edition
ORS 468.173(1)
OAR 340-016-0007

Criteria

The applicant must file the application within two years after the date that they completed construction of the facility. The final application, however, is not valid if the applicant submits the application before they complete construction or before they place the facility into operation.

Applied to this Application

The applicant **filed** the application **within** the two-year **filing requirement** because they completed construction on 11/27/2001 and filed the application on 7/31/2003. They did not file the application before they completed construction or before they placed the facility into operation on 12/18/2001.

Purpose: Voluntary

ORS 468.155 (1)(a)(B)
OAR 340-016-0010(7)(a)(b)

Criteria

The sole purpose, meaning the 'exclusive' purpose, of the claimed facility must be to prevent, control, or reduce a substantial quantity of solid waste, hazardous waste: or used oil.

"Solid waste" as defined by ORS 459.005: All useless or discarded putrescible and non-putrescible materials, including but not limited to garbage, rubbish, refuse, ashes, paper and cardboard, sewage sludge, septic tank and cesspool pumpings or other sludge, useless or discarded commercial, industrial, demolition and construction materials, discarded or abandoned vehicles or parts thereof, discarded home and industrial appliances, manure, vegetable or animal solid and semisolid materials, dead animals and infectious waste as defined by ORS 459.386.

Applied to this Application
Used old corrugated cardboard **meets the definition of** solid waste as defined in ORS 459.005, because it is discarded non-putrescible material.

Method
ORS 468.155 (1)(b)(D)

Criteria
The prevention, control, or reduction must be accomplished by the use of a material recovery process which obtains useful material from material that would otherwise be solid waste below:

> "Material Recovery" means any process, such as pre-segregation, for obtaining materials from solid waste, hazardous waste or used oil. The recovered material shall still have useful physical or chemical properties after serving a specific purpose and can, therefore, be reused or recycled for the same or other purpose. The recovered material shall have useful physical or chemical properties that yield a competitive end-product of real economic value. The material recovery process does not include processes:
>
> a. In which the major purpose is the production of fuel from solid waste, hazardous waste or used oil which can be utilized for heat content or other forms of energy; or
>
> b. That burns waste to produce energy or to reduce the amount of waste. However, it does not eliminate from eligibility a pollution control device associated with a process which burns waste if such device is otherwise eligible for pollution control tax credit under these rules.

Applied to this Application
The used baler reduces a substantial quantity of solid waste because it diverts approximately 35 to 40 tons of cardboard from the landfill every year. Cloudburst Recycling collects and ships the baled old corrugated cardboard to the appropriate recycle mill for use as secondary fiber.

OAR 340-016-0010(7)
OAR 340-016-0060(4)(e)

Criteria
The facility produces an end product of utilization that is an item of real economic value and is competitive with an end product produced in another state. The facility produces the end product by mechanical processing, chemical processing; or through the production, processing, pre-segregation, or use of materials which:

a. Have useful chemical or physical properties and which may be used for the same or other purposes: or

b. May be used in the same kind of application as its prior use without change in identity.

Applied to this Application
The baled old corrugated cardboard is a competitive product that the applicant sells to the paper products industry for use as secondary fiber.

Exclusions
ORS 468.155(3)
OAR 340-016-0070(3)

Criteria
The regulations provide a list of over 40 items excluded from the definition of a Pollution Control Facility. Items that do not meet the definition are ineligible for certification.

Applied to this Application
There are **no exclusions.**

Replacement
ORS 468.155(3)(e)

Criteria
The replacement or reconstruction of all or part of a facility that the State of Oregon previously certified as a pollution control facility under ORS 468.170 is not eligible for the tax credit with two exceptions:

1. The applicant replaced the facility because DEQ or EPA imposed a different requirement than the requirement to construct the original facility; or
2. The applicant replaced the facility before the end of its useful life.

Applied to this Application
The State of Oregon has not issued any Pollution Control Facilities Tax Credit (PCTC) certificates to Cloudburst Recycling, Inc.

The State has issued one Pollution Prevention Tax Credit Certificate and one PCTC certificate to Rejuvenation, Inc. at this location. The PCTC certificate was for installing a water pollution control. The claimed facility or any of its distinguishable parts **do not replace** one of these previously certified facilities.

Maximum Credit
ORS 468.170(3)(d)
ORS 468.155(1)(b)(D)

Criteria
The maximum tax credit is 35% if the applicant submitted the application between January 1, 2002 and December 31, 2008, inclusively, and the facility is used for material recovery or recycling, as those terms are defined in ORS 459.005.

Applied to this Application
The **maximum tax credit is 35%** because the applicant submitted the application on 7/31/2003, and the facility is used in a **material recovery** process.

Facility Cost

Copies of invoices substantiated the claimed facility cost. The applicant subtracted the trade-in value of an older baler before claiming the facility cost.

Referenced Section	Description of Ineligible Portion		Cost
		Claimed	$5,755
		Certified	**$5,755**

Facility Cost Allocable to Pollution Control

ORS 468.190(3) Criteria

If the cost of the facility does not exceed $50,000, the portion of the actual costs properly allocable shall be in the proportion that the ratio of the time the facility is used for prevention, control or reduction of air, water or noise pollution or solid or hazardous waste or to recycling or appropriately disposing of used oil bears to the entire time the facility is used for any purpose.

Applied to this Application

The certified facility cost is **$5,755** and the applicant uses the facility **100%** of the time for pollution control.

Compliance

The applicant states that the facility and site are in compliance with Department rules and statutes, and with EQC orders. DEQ has not issued any permits to the site.

Reviewers: Jeannette Freeman, DEQ
Maggie Vandehey, DEQ

State of Oregon
Department of
Environmental
Quality

Tax Credit Review Report

Pollution Control Facility: Material Recovery
Final Certification
ORS 468.150 -- 468.190
OAR 340-016-0005 -- 340-016-0080

Director's Recommendation

Approve Application No. **6575 @ Reduced Cost**

Applicant: **Kiser Enterprises, Inc.**

Certification of:

Facility Cost		$1,046
Percentage Allocable	X	100%
Maximum Percentage	X	35%
Tax Credit		**$ 366**

Certificate Period: **5 years**

Applicant Identification

PO Box 338
Gladstone, OR 97027

Organized as: **S Corp**
Taxpayer ID: **93-0801438**

Facility Identification

PO Box 338
Gladstone, OR 97027

The certificate will identify the facility as:

300 - 14-gallon burnt orange recycle bins, RB0030R02WI000

Technical Information

Kiser Enterprises, Inc., dba Whichita Sanitary Service, is a residential refuse and recycling company. The company claims 300 new 14-gallon burnt orange bins for commingled recyclables. The applicant has placed some of the bins with new on-route customers and some replenish damaged existing residential solid waste collection bins. The applicant collects comingled recycling from the 14-gallon bins once a week. Prior to the commingled program, the customers separated recyclable materials at the curb. The commingled service increased customer participation.

Taxpayer Allowed Credit

ORS 315.304(4)

Criteria

The taxpayer who is allowed the credit is the:

a. **Owner**, including a contract purchaser, **of** the trade **or business** that uses the Oregon property requiring a pollution control facility to prevent or minimize pollution; or

b. Person who, as a lessee or pursuant to an agreement, conducts the trade or business that operates or utilizes such property; or

c. Person who, as an owner, including a contract purchaser, or lessee, owns or leases a pollution control facility that is used for recycling, material recovery or energy recovery as defined in ORS 459.005.

Applied to this Application

Applicant is the **owner** of the claimed facility that they **use for recycling** and material recovery.

Eligibility

Timely Filing
2001 Edition
ORS 468.165(6)

Criteria

The applicant must file the application within one year after the date that they completed construction of the facility. The final application, however, is not valid if the applicant submits the application before they complete construction or before they place the facility into operation.

Applied to this Application

The applicant **filed** the application **within** the one-year **filing requirement** because they completed construction on 6/13/2003 and submitted the application on 8/20/2003. They did not file the application before they completed construction or before they placed the facility into operation on 6/13/2003.

Purpose: Voluntary
ORS 468.155 (1)(a)(B)
OAR 340-016-0010(7)(a)(b)

Criteria

The sole purpose, meaning the 'exclusive' purpose, of the claimed facility must be to prevent, control, or reduce a substantial quantity of solid waste, hazardous waste: or used oil.

"Solid waste" as defined by ORS 459.005: All useless or **discarded** putrescible and non-putrescible materials, including but not limited to **garbage, rubbish**, refuse, ashes, paper and cardboard, sewage sludge, septic tank and cesspool pumpings or other sludge, useless or discarded commercial, industrial, demolition and construction materials, discarded or abandoned vehicles or parts thereof, discarded home and industrial appliances, manure, vegetable or animal solid and semisolid materials, dead animals and infectious waste as defined by ORS 459.386

Applied to this Application

Commingled recyclables **meets the definition of** solid waste. The claimed

facility diverted over 1,600 tons of solid waste from the landfill. This is a one-third reduction over the previous 12-month period. In 2002, the applicant collected more than 2,300 tons of yard debris and they processed over 1,200 tons of recycled materials.

Method
ORS 468.155 (1)(b)(D)

Criteria
The prevention, control, or reduction must be accomplished by the use of a material recovery process which obtains useful material from material that would otherwise be solid waste:

> "Material Recovery" means any process, such as pre-segregation, for obtaining **materials from solid waste**, hazardous waste or used oil. The recovered material shall still have useful physical or chemical properties after serving a specific purpose and can, therefore, be reused or recycled for the same or other purpose. The recovered material shall have useful physical or chemical properties that yield a competitive end-product of real economic value.

OAR 340-016-0010(7)
OAR 340-016-0060(4)(e)

Criteria
The facility produces an end product of utilization that is an item of real economic value and is **competitive with an end product** produced in another state. The facility produces the end product by mechanical processing, chemical processing; or through the production, processing, **pre-segregation**, or use of materials which:

a. Have useful chemical or physical properties and which may be used for the same or other purposes: or
b. May be used in the same kind of application as its prior use without change in identity.

Applied to this Application
Commingled recyclables **meets the definition of** solid waste as defined in ORS 459.005. Kiser Enterprises, Inc. sells the recovered material at market value to respective recycling mills. The recyclable material becomes a competitive end product with similar properties.

Exclusions
ORS 468.155(3)
OAR 340-016-0070(3)

Criteria
The regulations provide a list of over 40 items excluded from the definition of a Pollution Control Facility. Items that do not meet the definition are ineligible for certification.

Applied to this Application
There are **no exclusions**.

Replacement
ORS 468.155(3)(e)

Criteria
The replacement or reconstruction of all or part of a facility that the State of Oregon previously certified as a pollution control facility under ORS 468.170

is not eligible for the tax credit with two exceptions:

1) The applicant replaced the facility because DEQ or EPA imposed a different requirement than the requirement to construct the original facility; or

2) The **applicant replaced the facility before the end of its useful life**.

Applied to this Application
The State of Oregon issued five certificates to the applicant. The attached Certificate No. 5725 provided tax credits for 1300 14-gallon bins used to recover recyclables materials.

The applicant currently has 1500 on-route customers, and is currently claiming 300 additional 14-gallon bins. The 1300 previously certified bins and the 300 claimed bins exceed the number of on-route customers by 100. The applicant clarified that they replaced stolen or destroyed bins. Therefore, the Department has subtracted 100 14-gallon bins from the claimed facility costs as shown under the *Facility Cost* section below.

Maximum Credit
ORS 468.170(3)(d)
ORS 468.155(1)(b)(D)

Criteria
The maximum tax credit is 35% if the applicant submitted the application between January 1, 2002 and December 31, 2008, inclusively, and the facility is used for material recovery or recycling, as those terms are defined in ORS 459.005.

Applied to this Application
The maximum tax credit is **35%** because the applicant submitted the application on 8/20/2003, and the facility is used in a **material recovery process**.

Facility Cost

Subtractions
OAR 340-016-0070(1)

Criteria
The applicant must provide documents that substantiate the claimed facility cost. The claimed cost may not include:

a) the salvage value of a pre-existing facility if the applicant is replacing a facility;

b) the amount of any government grants received to pay part of the facility cost;

c) the present value of any other state tax credits for which the investment is eligible; and

d) ineligible costs as set forth in OAR 340-016-0070(3).

Applied to this Application
There are **no subtractions**.

$ Certification Criteria

ORS 468.170(1) The certified cost is limited to the actual cost of the eligible facility. The certified cost may not exceed the taxpayer's own cash investment in the facility or portion of the facility.

Applied to this Application

The applicant provided copies of invoices that substantiate the claimed cost.

Referenced Section	Description of Ineligible Portion		Cost
		Claimed	$1,569
Replacement	100 14-gallon bins @ $5.23 each		**-$523**
		Certified	**$1,046**

Facility Cost Allocable to Pollution Control

% Certification Criteria

ORS 468.170 (1) The certified "percentage allocable" is limited to the portion of the actual facility cost that is properly allocable to the prevention, control, or **reduction of solid waste**, hazardous waste, or to recycling or appropriately disposing of used oil.

ORS 468.190(3) The percentage of the cost allocable to pollution control is equal to the portion of time that the applicant uses the facility to prevent, control or reduce solid waste, hazardous waste, or to recycle or appropriately dispose of used oil if the cost of the facility **does not exceed $50,000**.

Applied to this Application

The applicant uses the bins **100%** of the time to recover solid waste.

Compliance

The applicant states the facility and site are in compliance with Department rules and statutes, and with EQC orders. DEQ has not issued any permits to the site.

Reviewers: Jeannette Freeman, DEQ
Maggie Vandehey, DEQ

State of Oregon
Department of
Environmental
Quality

Tax Credit Review Report

Pollution Control Facility: Material Recovery
Final Certification
ORS 468.150 -- 468.190
OAR 340-016-0005 -- 340-016-0080

Director's Recommendation

Approve Application No. **6579**

Applicant: **New KAB VIII, LLC**

Certification of:

Facility Cost		$7,207
Percentage Allocable	X	100%
Maximum Percentage	X	35%
Tax Credit		**$2,522**

Certificate Period: **5 years**

Applicant Identification

9350 SW Tigard Street
Tigard, OR 97223

Organized as: **LLC**
Taxpayer ID: **91-1833935**

Facility Identification

1345 Lewis Street SE
Salem, OR 97302

The certificate will identify the facility as:

One - Omega Combo 3 Solvent Recycler, Model GW176IRS3, Serial # 0103-62-0446

Technical Information

New KAB VIII, LLC, dba Kadel's Salem Auto Body (Kadel's Auto Body), is an automotive collision repair shop. Kadel's Auto Body uses lacquer-based solvent to clean the paint guns. The solvent contains toluene, petroleum distillates, isopropyl alcohol and acetone, which are deemed hazardous by the EPA.

The applicant claims a new solvent recycler capable of processing spent solvent in three-gallon batches. The system recovers solvent through a simple distillation process that separates solvent vapors from paint residue. The recycler condenses the vapors and stores the recovered liquid solvents for reuse. The applicant collects and disposes of the residue as hazardous waste. The system allows the company to reduce both their consumption of new solvents and the amount of hazardous waste sent for disposal.

Taxpayer Allowed Credit

ORS 315.304(4) Criteria

The taxpayer who is allowed the credit is the:

a. Owner, including a contract purchaser, of the trade or business that uses the Oregon property requiring a pollution control facility to prevent or minimize pollution; or

b. Person who, as a lessee or pursuant to an agreement, conducts the trade or business that operates or utilizes such property; or

c. Person who, as an owner, including a contract purchaser, or lessee, **owns** or leases a pollution control **facility** that is **used for** recycling, material recovery or energy recovery as defined in ORS 459.005.

Applied to this Application

New KAB VIII, LLC **owns** the solvent **recycler** that is used in a material recovery process.

Eligibility

Timely Filing
2001 Edition
ORS 468.165(6)

Criteria

The applicant must submit the application within one year after the date that they completed construction of the facility. The final application, however, is not valid if the applicant submits the application before they complete construction or before they place the facility into operation.

Applied to this Application

The applicant **filed** the application **within** the one-year **filing requirement** because they completed construction on 4/24/2003 and filed the application on 8/19/2003. They did not file the application before they completed construction or before they placed the facility into operation on 4/28/2003.

Purpose: Voluntary
ORS 468.155 (1)(a)(B)
OAR 340-016-0010(7)(a)(b)

Criteria

The sole purpose, meaning the 'exclusive' purpose, of the claimed facility must be to prevent, control, or reduce a substantial quantity of solid waste, hazardous waste or used oil.

"Hazardous waste" as defined by ORS 466.005: Includes all of the following which are not declassified by the commission under ORS 466.015(3):

a. Discarded, useless or unwanted materials or residues resulting from any substance or combination of substances intended for the purpose of defoliating plants or for the preventing, destroying, repelling or mitigating of insects, fungi, weeds, rodents, or predatory animals, including but not limited to defoliants, desiccants, fungicides, herbicides, insecticides, nematocides and rodenticides.

b. **Residues resulting from any process of** industry, manufacturing, **trade** or business or government or from the development or recovery

of any natural resources, if such residues are classified as hazardous by order of the commission, after notice and public hearing. For purposes of classification, the commission must find that the residue, because of its quantity, concentration, or physical, chemical or infectious characteristics may:

A. Cause or significantly contribute to an increase in mortality or an increase in serious irreversible or incapacitating reversible illness; or

B. Pose a substantial present or **potential hazard to human health** or the environment when improperly treated, stored, transported or disposed of, or otherwise managed.

Applied to this Application
Solvents containing residual toluene, petroleum distillates, isopropyl alcohol and acetone **meet the definition of** hazardous waste as defined in ORS 466.005. The solvent recycler has reduced the amount of hazardous waste generated from 400 pounds to 100 pounds per month; and the amount of new solvent consumed from 55 gallons to 10 gallons per month.

Method

Criteria

ORS 468.155 (1)(b)(D) The prevention, control, or reduction must be accomplished by the use of a material recovery process which obtains useful material from material that would otherwise be hazardous waste below:

"Material Recovery" means any process, such as pre-segregation, for **obtaining materials** from solid waste, **hazardous waste** or used oil. The recovered material shall still have useful physical or chemical properties after serving a specific purpose and can, therefore, be reused or recycled for the same or other purpose. The recovered material shall have useful physical or chemical properties that yield a competitive end-product of real economic value.

OAR 340-016-0010(7) OAR 340-016-0060(4)(e) The facility produces an end product of utilization that is an item of real economic value and is competitive with an end product produced in another state. The facility produces the end product by mechanical processing, chemical processing; or through the production, **processing**, pre-segregation, or use of materials which:

(A) Have **useful chemical or physical properties** and which may be used for the same or other purposes: or

(B) The applicant may **use in the same kind of application** as its prior use without change in identity.

Applied to this Application
The applicant uses a material recovery process to obtain reusable solvent from hazardous waste. The applicant uses the recovered material in the same kind of application as its prior use.

Exclusions
ORS 468.155(3)
OAR 340-016-0070(3)

Criteria
The regulations provide a list of over 40 items excluded from the definition of a Pollution Control Facility. Items that do not meet the definition are ineligible for certification.

Applied to this Application
There are **no exclusions**.

Replacement
ORS 468.155(3)(e)

Criteria
The replacement or reconstruction of all or part of a facility that the State of Oregon previously certified as a pollution control facility under ORS 468.170 is not eligible for the tax credit with two exceptions:

1) The applicant replaced the facility because DEQ or EPA imposed a different requirement than the requirement to construct the original facility; or
2) The applicant replaced the facility before the end of its useful life.

Applied to this Application
The State of Oregon has not issued any Pollution Control Facilities Tax Credit Certificates to the applicant at the Salem location; therefore, the claimed facility is **not a replacement**.

Maximum Credit
ORS 468.170(3)(d)
ORS 468.155(1)(b)(D)

Criteria
The maximum tax credit is 35% if the applicant submitted the application between January 1, 2002 and December 31, 2008, inclusively, and the facility is used for material recovery or recycling, as those terms are defined in ORS 459.005.

Applied to this Application
The **maximum tax credit is 35%** because the applicant submitted the application on 8/19/2003, and the facility is used in a **material recovery process**.

Facility Cost

Subtractions
OAR 340-016-0070(1)

Criteria
The applicant must provide documents that substantiate the claimed facility cost. The claimed cost may not include:

a) the salvage value of a pre-existing facility if the applicant is replacing a facility,
b) the amount of any government grants received to pay part of the facility cost,
c) the present value of any other state tax credits for which the investment is eligible, and
d) ineligible costs as set forth in OAR 340-016-0070(3).

Applied to this Application
There are **no subtractions**.

$ Certification Criteria
ORS 468.170(1) The certified cost is limited to the actual cost of the material recovery portion of the facility. The certified cost may not exceed the taxpayer's own cash investment in the facility or portion of the facility.

Applied to this Application
The applicant provided copies of invoices that substantiate the claimed cost of the material recovery facility.

Referenced Section	Description of Ineligible Portion		Cost
		Claimed	$7,207
		Certified	**$7,207**

Facility Cost Allocable to Pollution Control

% Certification Criteria
ORS 468.170(1) The certified "percentage allocable" is limited to the portion of the actual facility cost that is properly allocable to the prevention, control, or reduction of solid waste, hazardous waste, or to recycling or appropriately disposing of used oil.

ORS 468.190(3) The percentage of the cost allocable to pollution control is equal to the portion of time that the applicant uses the facility to prevent, control or reduce solid waste, hazardous waste, or to recycle or appropriately dispose of used oil if the cost of the facility **does not exceed $50,000.**

Applied to this Application
The applicant uses the solvent recycler **100%** of the time to recover hazardous waste.

Compliance

The applicant states that the facility and site are in compliance with Department rules and statutes, and with EQC orders. DEQ has not issued any permits to the applicant at this site.

Reviewers: Jeannette Freeman, DEQ
Maggie Vandehey, DEQ

State of Oregon
Department of
Environmental
Quality

Tax Credit Review Report

Pollution Control Facility: Material Recovery
Final Certification
ORS 468.150 -- 468.190
OAR 340-016-0005 -- 340-016-0080

Director's Recommendation

Approve Application No. **6585 @ Reduced Cost**

Applicant: **Metro Metals Northwest, Inc.**

Certification of:

Facility Cost		$27,438
Percentage Allocable	X	100%
Maximum Percentage	X	35%
Tax Credit		**$9,603**

Certificate Period: **5 years**

Applicant Identification

5611 NE Columbia Blvd
Portland, OR 97218

Organized as: **C Corp**
Taxpayer ID: **93-1270871**

Facility Identification

5611 NE Columbia Blvd
Portland, OR 97218

The certificate will identify the facility as:

Ten - 4' x 4' x 4' (16-gal) drop boxes
Five - 4' x 6' drop boxes with lid-lock
Two - 40 yard open top drop boxes 20' x 88"
Three - 30 yard open top drop boxes 20' x 66"

Technical Information

Metro Metals Northwest, Inc. (Metro Metals) is a scap metal collection and recycling plant. The applicant claims various-sized drop boxes for use as on-site depositories at commerical sites. Company trucks collect the bins once they are full of ferrous and nonferrous metal scrap. The applicant then sorts and processes the reuseable metals at their plant. They sell the baled materials to various mills.

Taxpayer Allowed Credit

ORS 315.304(4)

Criteria

The taxpayer who is allowed the credit is the:

a. Owner, including a contract purchaser, of the trade or business that uses the Oregon property requiring a pollution control facility to prevent or minimize pollution; or

b. Person who, as a lessee or pursuant to an agreement, conducts the trade or business that operates or utilizes such property; or

c. Person who, as an owner, including a contract purchaser, or lessee, **owns** or leases a pollution control **facility** that is **used for** recycling, material recovery or energy recovery as defined in ORS 459.005.

Applied to this Application

Applicant is the owner of the containers that they use in a material recovery process.

Eligibility

Timely Filing
2001 Edition
ORS 468.165(6)

Criteria

The applicant must submit the application within one year after the date that they completed construction of the facility. The final application, however, is not valid if the applicant submits the application before they complete construction or before they place the facility into operation.

Applied to this Application

The applicant **filed** the application **within** the one-year **filing requirement** because they completed construction on 4/15/2003 and filed the application on 9/5/2003. The applicant did not filed the application before they completed construction and placed the facility into operation on 4/15/2003.

Purpose: Voluntary
ORS 468.155 (1)(a)(B)
OAR 340-016-0010(7)(a)(b)

Criteria

The sole purpose, meaning the 'exclusive' purpose, of the claimed facility must be to prevent, control, or reduce a substantial quantity of solid waste.

"Solid waste" as defined by ORS 459.005: All useless or discarded putrescible and non-putrescible materials, including but not limited to garbage, rubbish, refuse, ashes, paper and cardboard, sewage sludge, septic tank and cesspool pumpings or other sludge, useless or **discarded commercial, industrial**, demolition and construction **materials**, discarded or abandoned vehicles or parts thereof, discarded home and industrial appliances, manure, vegetable or animal solid and semisolid materials, dead animals and infectious waste as defined by ORS 459.386.

Applied to this Application

Ferrous and nonferrous scrap metal **meets the definition of** solid waste as defined in ORS 459.005. The drop boxes are used to collect the majority of the

233,000 tons of scrap metal recycled annually by Metro Metals.

Method
ORS 468.155 (1)(b)(D)

Criteria

The **prevention**, control, or **reduction** must be accomplished by the use of a material recovery process which obtains useful material from material that would otherwise be solid waste:

> "Material Recovery" means any process, such as pre-segregation, for **obtaining materials from solid waste**, hazardous waste or used oil. The recovered material shall still have useful physical or chemical properties after serving a specific purpose and can, therefore, be reused or recycled for the same or other purpose. The recovered material shall have useful physical or chemical properties that yield a competitive end-product of real economic value.

OAR 340-016-0010(7)
OAR 340-016-0060(4)(e)

Criteria

The facility produces an end product of utilization that is an item of real economic value and is competitive with an end product produced in another state. The facility produces the end product by mechanical processing, chemical processing; or through the production, **processing, pre-segregation**, or use of materials which:

(A) Have **useful chemical or physical properties** and which may be used for the same or other purposes: or

(B) May be **used in the same kind of application** as its prior use without change in identity.

Applied to this Application

Metro Metals places the drop boxes with commercial customers to collect useable ferrous and nonferrous scrap metal. Industrial and manufacturing sites in the Portland metropolitan area deposit the scrap in the boxes and the applicant periodically collects it. The company sorts, shreds, and bales the scrap metal. They sell the bundles to manufacturers that use it as feedstock to produce new metal products.

Exclusions
ORS 468.155(3)
OAR 340-016-0070(3)

Criteria

The regulations provide a list of over 40 items excluded from the definition of a Pollution Control Facility. Items that do not meet the definition are ineligible for certification.

Applied to this Application

There are **no exclusions**.

Replacement
ORS 468.155(3)(e)

Criteria

The replacement or reconstruction of all or part of a facility that the State of Oregon previously certified as a pollution control facility under ORS 468.170 is not eligible for the tax credit with two exceptions:

1. The applicant replaced the facility because DEQ or EPA imposed a different

requirement than the requirement to construct the original facility; or

2. The applicant replaced the facility before the end of its useful life.

Applied to this Application
The State of Oregon issued ten certificates to the applicant at this location for controlling solid waste pollution. The claimed facility did **not replace** one of the previously certified facilities.

Maximum Credit
ORS 468.170(3)(d)
ORS 468.155(1)(b)(D)

Criteria
The maximum tax credit is 35% if the applicant submitted the application between January 1, 2002 and December 31, 2008, inclusively, and the facility is used for material recovery or recycling, as those terms are defined in ORS 459.005.

Applied to this Application
The **maximum tax credit is 35%** because the applicant submitted the application on 9/5/2003, and the facility is used in a **material recovery** process

Facility Cost

Subtractions
OAR 340-016-0070(1)

Criteria
The applicant must provide documents that substantiate the claimed facility cost. The claimed cost may not include:

a. the salvage value of a pre-existing facility if the applicant is replacing a facility;

b. the amount of any government grants received to pay part of the facility cost;

c. the present value of any other state tax credits for which the investment is eligible; and

d. ineligible costs as set forth in OAR 340-016-0070(3).

Applied to this Application
The applicant included 2003 Kenworth truck modifications. The applicant claims the truck on application number 6586, which is also in this Agenda Item. The modification costs were not associated with the claimed containers. At the applicant's request, the Department subtracted the costs associated with the modifications from the claimed facility cost in the *Facility Cost* section below. Also at the applicant's request, the Department did not include the modification costs on application number 6586.

$ Certification
ORS 468.170(1)

Criteria
The certified cost is limited to the actual cost of the material recovery portion of the facility. The certified cost may not exceed the taxpayer's own cash investment in the facility or portion of the facility.

Applied to this Application
The applicant provided copies of invoices that substantiate the claimed cost of the material recovery facility.

Referenced Section	Description of Ineligible Portion		Cost
		Claimed	$45,066
	Exclusions Modifications to a 2003 Kenworth truck		-$17,628
		Certified	**$27,438**

Facility Cost Allocable to Pollution Control

% Certification Criteria

ORS 468.170 (1) The certified "percentage allocable" is limited to the portion of the actual facility cost that is properly allocable to the prevention, control, or **reduction of solid waste**, hazardous waste, or to recycling or appropriately disposing of used oil.

ORS 468.190(3) The percentage of the cost allocable to pollution control is equal to the portion of time that the applicant uses the facility to prevent, control or reduce solid waste, hazardous waste, or to recycle or appropriately dispose of used oil if the cost of the facility **does not exceed $50,000**.

Applied to this Application

The applicant uses the drop boxes **100%** of the time to recover solid waste in Oregon.

Integral Facility Criteria

OAR 340-016-0075 (4)(a) Facilities integral to the applicant's business refer to facilities costing over $50,000, and where the business is unable to operate or is only able to operate at reduced income levels, without the claimed pollution control facility. Determining factors include:

a. The facility represents 25 percent or more of the total assets of the applicant's business.

b. The facility was constructed or installed in response to market demand for such pollution control facilities such as requirements imposed by DEQ, EPA or regional air pollution authority on parties unaffiliated with the applicant; or

c. Where the facility allows the applicant to generate gross revenues at least 50% greater than could be or were without the facility; or

d. The applicant's operating expenses for the facility are at least 50% of the operating expenses for the applicant's entire business.

Applied to this Application

The facility **meets, does not meet the definition of** an integral facility because the facility cost does not exceed $50,000.

Compliance

The applicant states the facility and site are in compliance with Department rules and statutes, and with EQC orders. DEQ has not issued any permits to the applicant at this site.

Reviewers: Jeannette Freeman, DEQ
Maggie Vandehey, DEQ

State of Oregon
Department of
Environmental
Quality

Tax Credit Review Report

Pollution Control Facility: Material Recovery
Final Certification
ORS 468.150 -- 468.190
OAR 340-016-0005 -- 340-016-0080

Director's Recommendation

Approve Application No. **6586**

Applicant: **Metro Metals Northwest, Inc**

Certification of:

Facility Cost		$49,655
Percentage Allocable	X	100%
Maximum Percentage	X	35%
Tax Credit		**$17,379**

Certificate Period: **5 years**

Applicant Identification

5611 NE Columbia Blvd
Portland, OR 97218

Organized as: **C Corporation**
Taxpayer ID: **93-1270871**

Facility Identification

5611 NE Columbia Blvd
Portland, OR 97218

The certificate will identify the facility as:

One – 2003 Kenworth T-800 Truck, VIN# INKDLB9X13R383370

Technical Information

Metro Metals Northwest, Inc. (Metro Metals) is a scrap metal collection and recycling plant. The company collects ferrous and nonferrous metal from commercial sites in the Portland Metropolitan Area and western Washington. The company claims a 2003 Kenworth T-800 truck that they use to collect the scrap metal bins placed with their customers. The truck transports the full bins to their recycle facility where they sort and process the material into reuseable metal.

Taxpayer Allowed Credit

ORS 315.304(4) Criteria

The taxpayer who is allowed the credit is the:

a. Owner, including a contract purchaser, of the trade or business that uses the Oregon property requiring a pollution control facility to prevent or minimize pollution; or

b. Person who, as a lessee or pursuant to an agreement, conducts the trade or business that operates or utilizes such property; or

c. Person who, as an owner, including a contract purchaser, or lessee, owns or leases a pollution control facility that is used for recycling, material recovery or energy recovery as defined in ORS 459.005.

Applied to this Application
Applicant is the **owner of** the **equipment** that they **use for** recycling and **material recovery.**

Eligibility

Timely Filing
2001 Edition
ORS 468.165(6)

Criteria
The applicant must file the application within one year after the date that they completed construction of the facility. The final application, however, is not valid if the applicant submits the application before they complete construction or before they place the facility into operation.

Applied to this Application
The applicant **filed** the application **within** the one-year **filing requirement** because they completed construction on 1/3/2003 and filed the application on 9/5/2003. They did not file the application before they completed construction or before they placed the facility into operation on 1/3/2003.

Purpose: Voluntary
ORS 468.155
(1)(a)(B)

Criteria
The sole purpose, meaning the 'exclusive' purpose, of the claimed facility must be to prevent, control, or reduce a substantial quantity of solid waste.

"Solid waste" as defined by ORS 459.005: All useless or discarded putrescible and non-putrescible materials, including but not limited to garbage, rubbish, refuse, ashes, paper and cardboard, sewage sludge, septic tank and cesspool pumpings or other sludge, useless or **discarded commercial, industrial**, demolition and construction **materials**, discarded or abandoned vehicles or parts thereof, discarded home and industrial appliances, manure, vegetable or animal solid and semisolid materials, dead animals and infectious waste as defined by ORS 459.386.

Applied to this Application
Ferrous and nonferrous scrap metal **meets the definition of** solid waste as defined in ORS 459.005. The applicant states they use the truck to recover approximately 7,605 tons annually in Oregon.

Method
ORS 468.155
(1)(b)(D)
OAR 340-016-0010(7)(a)(b)

Criteria
The prevention, control, or reduction must be accomplished by the use of a material recovery process which obtains useful material from material that would otherwise be solid waste below:

"Material Recovery" means any process, such as pre-segregation, for **obtaining materials from solid waste**, hazardous waste or used oil. The recovered material shall still have useful physical or chemical properties after serving a specific purpose and can, therefore, be reused or recycled for the same or other purpose. The recovered material shall have useful physical or chemical

properties that yield a competitive end-product of real economic value. The material recovery process does not include processes:

a. In which the major purpose is the production of fuel from solid waste, hazardous waste or used oil which can be utilized for heat content or other forms of energy; or

b. That burns waste to produce energy or to reduce the amount of waste. However, it does not eliminate from eligibility a pollution control device associated with a process which burns waste if such device is otherwise eligible for pollution control tax credit under these rules.

OAR 340-016-0060(4)(e)

The facility produces an end product of utilization that is an item of real economic value and is competitive with an end product produced in another state. The facility produces the end product by mechanical processing, chemical processing; or through the production, **processing, pre-segregation**, or use of materials which:

a. Have **useful chemical or physical properties** and which may be used for the same or other purposes: or

b. May be used in the **same kind of application** as its prior use without change in identity.

Applied to this Application

Metro Metals uses the truck to collect useable ferrous and nonferrous scrap metal from commercial waste. The Kenworth truck self loads the bins from industrial and manufacturing sites in the Portland metropolitan area to be transported back to their recovery facility. The claimed truck can carry up to fifteen tons per trip, and averages three trips per day, five days a week.

The metal is shredded and then baled at the recovery facility. The bales are sold to manufacturers that use it as feedstock for producing new metal products.

Exclusions
ORS 468.155(3)
OAR 340-016-0070(3)

Criteria

The regulations provide a list of over 40 items excluded from the definition of a Pollution Control Facility. Items that do not meet the definition are ineligible for certification.

Applied to this Application

There were no exclusions.

Replacement
ORS 468.155(3)(e)

Criteria

The replacement or reconstruction of all or part of a facility that the State of Oregon previously certified as a pollution control facility under ORS 468.170 is not eligible for the tax credit with two exceptions:

1) The applicant replaced the facility because DEQ or EPA imposed a different requirement than the requirement to construct the original facility; or

2) The applicant replaced the facility before the end of its useful life.

Applied to this Application
The State of Oregon issued ten certificates to the applicant at this location for controlling solid waste pollution. The claimed facility **did not replace** one of the previously certified facilities.

Maximum Credit
ORS 468.170(3)(d)
ORS 468.155(1)(b)(D)

Criteria
The maximum tax credit is 35% if the applicant submitted the application between January 1, 2002 and December 31, 2008, inclusively, and the facility is used for material recovery or recycling, as those terms are defined in ORS 459.005.

Applied to this Application
The **maximum tax credit is 35%** because the applicant submitted the application on 9/5/2003, and the facility is used in a material recovery process.

Facility Cost

Subtractions
OAR 340-016-0070(1)

Criteria
The applicant must provide documents that substantiate the claimed facility cost. The claimed cost may not include:

a. the salvage value of a pre-existing facility if the applicant is replacing a facility;

b. the amount of any government grants received to pay part of the facility cost;

c. the present value of any other state tax credits for which the investment is eligible; and

d. ineligible costs as set forth in OAR 340-016-0070(3).

Applied to this Application
There are **no subtractions**.

$ Certification
ORS 468.170(1)

Criteria
The certified cost is limited to the actual cost of the material recovery portion of the facility. The certified cost may not exceed the taxpayer's own cash investment in the facility or portion of the facility.

Applied to this Application
The applicant provided copies of invoices that substantiate the claimed cost of the material recovery facility.

Referenced Section	Description of Ineligible Portion		Cost
		Claimed	$49,655
		Certified	**$49,655**

Facility Cost Allocable to Pollution Control

% Certification Criteria

ORS 468.170(1) The certified "percentage allocable" is limited to the portion of the actual facility cost that is properly allocable to the **prevention**, control, or **reduction of solid waste,** hazardous waste, or to recycling or appropriately disposing of used oil.

ORS 468.190(3) The percentage of the cost allocable to pollution control is equal to the portion of time that the applicant uses the facility to prevent, control or reduce solid waste, hazardous waste, or to recycle or appropriately dispose of used oil if the cost of the facility **does not exceed $50,000**.

Applied to this Application

The applicant uses the Kenworth truck 65% of the time in the State of Oregon, based on total mileage. The claimed cost excludes 35% of the cost of the truck for the percentage of time that the applicant uses the truck in Washington.

The Department determined that the percentage of the facility cost allocable to pollution control is **100%**. This is in proportion to the truck's use in performing an eligible material recovery process as described under the *Method* section above.

Integral Facility Criteria

OAR 340-016-0075 (4)(a) Facilities integral to the applicant's business refer to facilities costing over $50,000, and where the business is unable to operate or is only able to operate at reduced income levels, without the claimed pollution control facility. Determining factors include:

(A) The facility represents 25 percent or more of the total assets of the applicant's business.

(B) The facility was constructed or installed in response to market demand for such pollution control facilities such as requirements imposed by DEQ, EPA or regional air pollution authority on parties unaffiliated with the applicant; or

(C) Where the facility allows the applicant to generate gross revenues at least 50% greater than could be or were without the facility; or

(D) The applicant's operating expenses for the facility are at least 50% of the operating expenses for the applicant's entire business.

Applied to this Application

The Integral Facility Criteria **do not apply** because the cost of the facility **does not exceed $50,000.**

Compliance

The applicant states that the facility and site are in compliance with Department rules and statutes, and with EQC orders. DEQ has not issued any permits to the applicant at this site.

Reviewers: Jeannette Freeman, DEQ
Maggie Vandehey, DEQ

State of Oregon
Department of Environmental Quality

Tax Credit Review Report

Pollution Control Facility: Material Recovery
Final Certification
ORS 468.150 -- 468.190
OAR 340-016-0005 -- 340-016-0080

Director's Recommendation

Approve Application No. **6587**

Applicant: **Metro Metals Northwest, Inc.**

Certification of:

Facility Cost		$38,856
Percentage Allocable	X	100%
Maximum Percentage	X	35%
Tax Credit		**$13,600**

Certificate Period: **5 years**

Applicant Identification

5611 NE Columbia Blvd
Portland, OR 97218

Organized as: **C Corp**
Taxpayer ID: **93-1270871**

Facility Identification

5611 NE Columbia Blvd
Portland, OR 97218

The certificate will identify the facility as:

Six - 40 yd 20' x 88" open top drop boxes
Three - 30 yd 20' x 66"open top drop boxes

Technical Information

Metro Metals Northwest, Inc. (Metro Metals) is a scrap metal collection and recycling company. The applicant claims various-sized drop boxes. They place the drop boxes with their commercial customers for collecting ferrous and nonferrous metal scrap. The company trucks collect the full bins. The applicant then sorts and processes the reuseable metals at their plant before selling the baled materials to various mills.

Taxpayer Allowed Credit

ORS 315.304(4) Criteria

The taxpayer who is allowed the credit is the:

a. **Owner**, including a contract purchaser, of the trade or **business** that uses the Oregon property requiring a pollution control facility to prevent or minimize pollution; or

b. Person who, as a lessee or pursuant to an agreement, conducts the trade or business that operates or utilizes such property; or

c. Person who, as an owner, including a contract purchaser, or lessee, owns or leases a pollution control facility that is used for recycling, material recovery or energy recovery as defined in ORS 459.005.

Applied to this Application

Applicant is the **owner of** the claimed **facility used for** recycling and **material recovery**.

Eligibility

Timely Filing
2001 Edition
ORS 468.165(6)

Criteria

The applicant must submit the application within one year after the date that they completed construction of the facility. The final application, however, is not valid if the applicant submits the application before they complete construction or before they place the facility into operation.

Applied to this Application

The applicant **filed** the application **within** the one-year **filing requirement** because they completed construction on 3/21/2003 and filed the application on 9/5/2003. They did not file the application before they completed construction or before they placed the facility into operation on 3/31/2003.

Purpose: Voluntary
ORS 468.155 (1)(a)(B)
OAR 340-016-0010(7)(a)(b)

Criteria

The sole purpose, meaning the 'exclusive' purpose, of the claimed facility must be to prevent, control, or reduce a substantial quantity of solid waste.

"Solid waste" as defined by ORS 459.005: All useless or discarded putrescible and non-putrescible materials, including but not limited to garbage, rubbish, refuse, ashes, paper and cardboard, sewage sludge, septic tank and cesspool pumpings or other sludge, useless or **discarded commercial, industrial**, demolition and construction **materials**, discarded or abandoned vehicles or parts thereof, discarded home and industrial appliances, manure, vegetable or animal solid and semisolid materials, dead animals and infectious waste as defined by ORS 459.386.

Applied to this Application

Ferrous and nonferrous scrap metal **meets the definition of** solid waste as defined in ORS 459.005. The applicant uses the drop boxes to collect the

majority of the 233,000 tons of scrap metal recycled annually by Metro Metals.

Method
ORS 468.155 (1)(b)(D)

Criteria
The applicant must accomplish the **prevention**, control, or **reduction** by using a material recovery process that obtains useful material from material that would otherwise be solid waste.

> "Material Recovery" means any process, such as pre-segregation, for **obtaining materials from solid waste**, hazardous waste or used oil. The recovered material shall still have useful physical or chemical properties after serving a specific purpose and can, therefore, be reused or recycled for the same or other purpose. The recovered material shall have useful physical or chemical properties that yield a competitive end-product of real economic value.

OAR 340-016-0010(7)
OAR 340-016-0060(4)(e)

Criteria
The facility produces an end product of utilization that is an item of real economic value and is competitive with an end product produced in another state. The facility produces the end product by mechanical processing, chemical processing; or through the production, **processing, pre-segregation**, or use of materials which:

(A) Have **useful chemical or physical properties** and which may be used for the same or other purposes: or

(B) May be **used in the same kind of application** as its prior use without change in identity.

Applied to this Application
The drop boxes allow Metro Metals to collect useable ferrous and nonferrous scrap metal from commercial waste. The applicant places the bins at industrial and manufacturing sites in the Portland metropolitan area and collects them when they are full. The drop boxes are a key element in storing the scrap metal until transported back to the recycle facility by the company's trucks.

The company separates the metal, which they shred and bale prior to selling it to manufacturers that incorporate it as feedstock to produce new metal products.

Exclusions
ORS 468.155(3)
OAR 340-016-0070(3)

Criteria
The regulations provide a list of over 40 items excluded from the definition of a Pollution Control Facility. Items that do not meet the definition are ineligible for certification.

Applied to this Application
There are **no exclusions**.

Replacement
ORS 468.155(3)(e)

Criteria
The replacement or reconstruction of all or part of a facility that the State of Oregon previously certified as a pollution control facility under ORS 468.170 is

not eligible for the tax credit with two exceptions:

1. The applicant replaced the facility because DEQ or EPA imposed a different requirement than the requirement to construct the original facility; or
2. The applicant replaced the facility before the end of its useful life.

Applied to this Application
The State of Oregon issued ten certificates to the applicant at this location for controlling solid waste pollution. The claimed facility did **not replace** one of the previously certified facilities.

Maximum Credit
ORS 468.170(3)(d)
ORS 468.155(1)(b)(D)

Criteria
The maximum tax credit is 35% if the applicant submitted the application between January 1, 2002 and December 31, 2008, inclusively, and the facility is used for material recovery or recycling, as those terms are defined in ORS 459.005.

Applied to this Application
The **maximum tax credit is 35%** because the applicant submitted the application on 9/5/2003, and the facility is used in a **material recovery** process.

Facility Cost

Subtractions
OAR 340-016-0070(1)

Criteria
The applicant must provide documents that substantiate the claimed facility cost. The claimed cost may not include:

a. the salvage value of a pre-existing facility if the applicant is replacing a facility;
b. the amount of any government grants received to pay part of the facility cost;
c. the present value of any other state tax credits for which the investment is eligible; and
d. ineligible costs as set forth in OAR 340-016-0070(3).

Applied to this Application
There are **no subtractions**.

$ Certification
ORS 468.170(1)

Criteria
The certified cost is limited to the actual cost of the material recovery portion of the facility. The certified cost may not exceed the taxpayer's own cash investment in the facility or portion of the facility.

Applied to this Application
The applicant provided copies of invoices that substantiate the claimed cost of the material recovery facility.

Referenced Section	Description of Ineligible Portion		Cost
		Claimed	$38,856
		Certified	**$38,856**

Facility Cost Allocable to Pollution Control

% Certification Criteria

ORS 468.170 (1) The certified "percentage allocable" is limited to the portion of the actual facility cost that is properly allocable to the prevention, control, or **reduction of solid waste**, hazardous waste, or to recycling or appropriately disposing of used oil.

ORS 468.190(3) The percentage of the cost allocable to pollution control is equal to the portion of time that the applicant uses the facility to prevent, control or reduce solid waste, hazardous waste, or to recycle or appropriately dispose of used oil if the cost of the facility **does not exceed $50,000**.

Applied to this Application
The applicant uses the various drop boxes **100%** of the time to recover solid waste.

Integral Facility Criteria

OAR 340-016-0075 (4)(a) Facilities integral to the applicant's business refer **to facilities costing over $50,000**, and where the business is unable to operate or is only able to operate at reduced income levels, without the claimed pollution control facility. Determining factors include:

a. The facility represents 25 percent or more of the total assets of the applicant's business.

b. The facility was constructed or installed in response to market demand for such pollution control facilities such as requirements imposed by DEQ, EPA or regional air pollution authority on parties unaffiliated with the applicant; or

c. Where the facility allows the applicant to generate gross revenues at least 50% greater than could be or were without the facility; or

d. The applicant's operating expenses for the facility are at least 50% of the operating expenses for the applicant's entire business.

Applied to this Application
The Integral Facility Criteria **do not apply** to this facility because **the cost of the facility does not exceed $50,000.**

Compliance

The applicant states that the facility and site are in compliance with Department rules and statutes, and with EQC orders. DEQ issued no permits to the site.

Reviewers: Jeannette Freeman, DEQ
Maggie Vandehey, DEQ

State of Oregon
Department of Environmental Quality

Tax Credit Review Report

Pollution Control Facility: Material Recovery
Final Certification
ORS 468.150 -- 468.190
OAR 340-016-0005 -- 340-016-0080

Director's Recommendation

Approve Application No. **6596**

Applicant: **Sharp Auto Body**

Certification of:

Facility Cost		$5,500
Percentage Allocable	X	100%
Maximum Percentage	X	35%
Tax Credit		**$1,925**

Certificate Period: **5 years**

Applicant Identification

4031 SE 26th Avenue
Portland, OR 97202

Organized as: **C Corp**
Taxpayer ID: **93-0842953**

Facility Identification

4031 SE 26th Avenue
Portland, OR 97202

The certificate will identify the facility as:

Safety-Kleen Minimizer/Recycler, Model 709, Serial #70903468

Technical Information

Sharp Auto Body, is an automotive body repair shop. The applicant uses solvents that contain toluene, petroleum distillates, isopropyl alcohol, and acetone to clean the paint guns.

The applicant claims solvent recycling equipment that reduces the consumption of new solvent and the amount of hazardous waste sent for disposal. The equipment cleans small batches of spent solvent by distillation. The minimizer reverts the distilled vapor back to a liquid and the applicant collects the reclaimed solvent for reuse. The applicant collects the waste from the bottom of the distillation tank and Safety-Kleen picks it up for proper disposal.

Taxpayer Allowed Credit

ORS 315.304(4) Criteria

The taxpayer who is allowed the credit is the:

a. **Owner**, including a contract purchaser, **of the trade or business** that uses the Oregon property requiring a pollution control facility to prevent or minimize pollution; or

b. Person who, as a lessee or pursuant to an agreement, conducts the trade or business that operates or utilizes such property; or Person who, as an owner, including a contract purchaser or lessee, owns or leases a pollution control facility that is used for recycling, material recovery or energy recovery as defined in ORS 459.005.

Applied to this Application

The applicant is the owner of the business that uses the claimed facility in a material recovery process.

Eligibility

Timely Filing
2001 Edition
ORS 468.165(6)

Criteria

The applicant must file the application within one year after the date that they complete construction of the facility. The final application, however, is not valid if the applicant submits the application before they complete construction or before they place the facility into operation.

Applied to this Application

The applicant **filed** the application **within** the one-year **filing requirement** because they completed construction on 5/28/2003 and filed the application on 9/24/2003. They did not file the application before they completed construction or before they placed the facility into operation on 5/28/2003.

Purpose: Voluntary
ORS 468.155 (1)(a)(B)
OAR 340-016-0010(7)(a)(b)

Criteria

The sole purpose, meaning the 'exclusive' purpose, of the claimed facility must be to prevent, control, or reduce a substantial quantity of hazardous waste.

"Hazardous waste" as defined by ORS 466.005: Includes all of the following which are not declassified by the commission under ORS 466.015(3):

a. Discarded, useless or unwanted materials or residues resulting from any substance or combination of substances intended for the purpose of defoliating plants or for the preventing, destroying, repelling or mitigating of insects, fungi, weeds, rodents, or predatory animals, including but not limited to defoliants, desiccants, fungicides, herbicides, insecticides, nematocides and rodenticides.

b. **Residues resulting from any process of industry**, manufacturing, trade or **business** or government or from the development or recovery of any natural resources, if such residues are **classified as hazardous**

by order of the commission, after notice and public hearing. For purposes of classification, the commission must find that the residue, because of its quantity, concentration, or physical, chemical or infectious characteristics may:

a. Cause or significantly contribute to an increase in mortality or an increase in serious irreversible or incapacitating reversible illness; or

b. Pose a substantial present or **potential hazard** to human health or the environment when improperly treated, stored, transported or disposed of, or otherwise managed.

Applied to this Application
Solvents containing residual toluene, petroleum distillates, isopropyl alcohol and acetone **meet the definition of** hazardous waste as defined in ORS 466.005. The solvent recycler reduced the amount of hazardous waste that the applicant generates by 85% or approximately 260 gallons each year.

Method
ORS 468.155 (1)(b)(D)

Criteria
The prevention, control, or reduction must be accomplished by the use of a material recovery process which obtains useful material from material that would otherwise be hazardous waste:

"Material Recovery" means any process, such as pre-segregation, for **obtaining materials** from solid waste, **hazardous waste** or used oil. The recovered material shall still have useful physical or chemical properties after serving a specific purpose and can, therefore, be **reused** or recycled for the same or other purpose. The recovered material shall have useful physical or chemical properties that yield a competitive end-product of real economic value.

OAR 340-016-0010(7)
OAR 340-016-0060(4)(e)

Criteria
The facility produces an end product of utilization that is an item of real economic value and is competitive with an end product produced in another state. The facility produces the end product by mechanical processing, chemical processing; or through the production, **processing**, pre-segregation, or use of materials which:

a. Have **useful chemical** or physical **properties** and which may be used for the same or other purposes: or

b. The material may be **used in the same kind of application** as its prior use without change in identity.

Applied to this Application
The applicant uses a material recovery process to obtain reusable solvent from hazardous waste. The applicant uses the recovered material in the same kind of application as its prior use.

Exclusions
ORS 468.155(3)
OAR 340-016-0070(3)

Criteria
The regulations provide a list of over 40 items excluded from the definition of a Pollution Control Facility. Items that do not meet the definition are ineligible for certification.

Applied to this Application
There are **no exclusions**.

Replacement
ORS 468.155(3)(e)

Criteria
The replacement or reconstruction of all or part of a facility that the State of Oregon previously certified as a pollution control facility under ORS 468.170 is not eligible for the tax credit with two exceptions:

1) The applicant replaced the facility because DEQ or EPA imposed a different requirement than the requirement to construct the original facility; or

2) The applicant replaced the facility before the end of its useful life.

Applied to this Application
The State of Oregon has issued one Pollution Control Facilities Tax Credit Certificate for air to the applicant at this location. The claimed facility **did not replace** the previously certified facility.

Maximum Credit
ORS 468.170(3)(d)
ORS 468.155(1)(b)(D)

Criteria
The maximum tax credit is 35% if the applicant submitted the application between January 1, 2002 and December 31, 2008, inclusively, and the facility is used for material recovery or recycling, as those terms are defined in ORS 459.005.

Applied to this Application
The **maximum tax credit is 35%** because the applicant submitted the application on 9/24/2003, and the facility is used in a **material recovery** process.

Facility Cost

Subtractions
OAR 340-016-0070(1)

Criteria
The applicant must provide documents that substantiate the claimed facility cost. The claimed cost may not include:

a) the salvage value of a pre-existing facility if the applicant is replacing a facility;

b) the amount of any government grants received to pay part of the facility cost;

c) the present value of any other state tax credits for which the investment is eligible; and

d) ineligible costs as set forth in OAR 340-016-0070(3).

Applied to this Application
There are **no subtractions**.

$ Certification Criteria
ORS 468.170(1) The certified cost is limited to the actual cost of the material recovery portion of the facility. The certified cost may not exceed the taxpayer's own cash investment in the facility or portion of the facility.

Applied to this Application
The applicant provided copies of invoices that substantiate the claimed cost of the material recovery facility.

Referenced Section	Description of Ineligible Portion		Cost
		Claimed	$5,500
		Certified	**$5,500**

Facility Cost Allocable to Pollution Control

% Certification Criteria
ORS 468.170 (1) The certified "percentage allocable" is limited to the portion of the actual facility cost that is properly allocable to the prevention, control, or **reduction of** solid waste, **hazardous waste**, or to recycling or appropriately disposing of used oil.

ORS 468.190(3) The percentage of the cost allocable to pollution control is equal to the portion of time that the applicant uses the facility to prevent, control or reduce solid waste, hazardous waste, or to recycle or appropriately dispose of used oil if the cost of the facility **does not exceed $50,000**.

Applied to this Application
The applicant uses the solvent recycler **100%** of the time to recover hazardous waste.

Compliance

The applicant states that the facility and site are in compliance with Department rules and statutes, and with EQC orders. DEQ issued no permits to the site.

Reviewers: Jeannette Freeman, DEQ
Maggie Vandehey, DEQ

State of Oregon
Department of
Environmental
Quality

Tax Credit Review Report

Pollution Control Facility: Material Recovery
Final Certification
ORS 468.150 -- 468.190
OAR 340-016-0005 -- 340-016-0080

Director's Recommendation

Approve Application No. **6600**

Applicant: **Baker Sanitary Service, Inc.**

Certification of:		
Facility Cost		$47,305
Percentage Allocable	X	100%
Maximum Percentage	X	35%
Tax Credit		**$16,557**

Certificate Period: **10 years**

Applicant Identification

PO Box 169
Baker City, OR 97814

Organized as: **C Corporation**
Taxpayer ID: **93-0882016**

Facility Identification

3048 Campbell Street & 12th
Baker City, OR 97814

The certificate will identify the facility as:

Four – 8 yard containers
Ten – 10 yard containers
97 – 5 yard containers

Technical Information

Baker Sanitary Service, Inc. is a commercial and residential collection service. The applicant claims various-sized cardboard recycling containers that they place at their commercial customers' locations. The applicant collects the corrugated cardboard filled containers twice a week. The applicant sorts and bales the material at their plant. They sell the baled material to recycling mills for its fiber content. The applicant disposed of the cardboard as trash before they began this new recycling service.

Taxpayer Allowed Credit

ORS 315.304(4) Criteria

The taxpayer who is allowed the credit is the:

a. **Owner**, including a contract purchaser, of the trade or **business** that uses the Oregon property requiring a pollution control facility to prevent or minimize pollution; or

b. Person who, as a lessee or pursuant to an agreement, conducts the trade or business that operates or utilizes such property; or

c. Person who, as an owner, including a contract purchaser, or lessee, owns or leases a pollution control facility that is used for recycling, material recovery or energy recovery as defined in ORS 459.005.

Applied to this Application
The applicant is **the owner** of the containers that are used in a **material recovery** process.

Eligibility

Timely Filing
2001 Edition
ORS 468.165(6)

Criteria
The applicant must file the application within one year after the date that they completed construction of the facility. The final application, however, is not valid if the applicant submits the application before they complete construction or before they place the facility into operation.

Applied to this Application
The applicant **filed** the application **within** the one-year **filing requirement** provided by that edition. They purchased (completed construction) the containers between 2/7/03 and 7/21/03 and filed the application on 9/29/2003. The applicant filed the application after they purchased the containers and placed them into operation between 5/20/03 and 7/21/03.

Purpose: Voluntary
ORS 468.155 (1)(a)(B)
OAR 340-016-0010(7)(a)(b)

Criteria
The sole purpose, meaning the 'exclusive' purpose, of the claimed facility must be to prevent, control, or reduce a substantial quantity of solid waste, hazardous waste: or used oil.

> "Solid waste" as defined by ORS 459.005: All useless or discarded putrescible and non-putrescible materials, including but not limited to garbage, rubbish, refuse, ashes, paper and cardboard, sewage sludge, septic tank and cesspool pumpings or other sludge, useless or discarded commercial, industrial, demolition and construction materials, discarded or abandoned vehicles or parts thereof, discarded home and industrial appliances, manure, vegetable or animal solid and semisolid materials, dead animals and infectious waste as defined by ORS 459.386

Applied to this Application
Old corrugated cardboard **meets the definition of** solid waste as defined in ORS 459.005.

Method
ORS 468.155 (1)(b)(D)

Criteria
The prevention, control, or reduction must be accomplished by the use of a material recovery process which obtains useful material from material that would otherwise be solid waste below:

> "Material Recovery" means any process, such as pre-segregation, for **obtaining materials** from **solid waste**, hazardous waste or used oil. The recovered material shall still have useful physical or chemical properties after serving a specific purpose and can, therefore, be reused or recycled for the same or other purpose. The recovered material shall have **useful physical** or chemical properties that yield a competitive end-product of real economic value.

OAR 340-016-0010(7)
OAR 340-016-0060(4)(e)

Criteria

The facility produces an end product of utilization that is an item of real economic value and is competitive with an end product produced in another state. The facility produces the end product by mechanical processing, chemical processing; or through the production, processing, pre-segregation, or use of materials which:

a. Have useful chemical or physical properties and which may be used for the same or other purposes: or

b. May be used in the same kind of application as its prior use without change in identity.

Applied to this Application

The applicant uses the containers in a material recovery process to obtain corrugated cardboard from solid waste. The recovered material is collected on-site semiweekly by the applicant's company trucks, to be transported to their facility to be sorted and baled.

The containers reduce a substantial quantity of solid waste by diverting approximately **320 to 350 tons of cardboard annually** from landfill. Baker Sanitary Service, Inc. sells the baled cardboard to the appropriate recycle mills for processing into similar competitive end products.

Exclusions
ORS 468.155(3)
OAR 340-016-0070(3)

Criteria

The regulations provide a list of over 40 items excluded from the definition of a Pollution Control Facility. Items that do not meet the definition are ineligible for certification.

Applied to this Application

There are **no exclusions**.

Replacement
ORS 468.155(3)(e)

Criteria

The replacement or reconstruction of all or part of a facility that the State of Oregon previously certified as a pollution control facility under ORS 468.170 is not eligible for the tax credit with two exceptions:

1) The applicant replaced the facility because DEQ or EPA imposed a different requirement than the requirement to construct the original facility; or

2) The applicant replaced the facility before the end of its useful life.

Applied to this Application

The State of Oregon has not issued any Pollution Control Facilities Tax Credit Certificates to the applicant at this location; therefore, the claimed facility is **not a replacement** facility.

Maximum Credit
ORS 468.170(3)(d)
ORS 468.155(1)(b)(D)

Criteria
The maximum tax credit is **35%** if the applicant submitted the application between January 1, 2002 and December 31, 2008, inclusively, and the facility is used for material recovery or recycling, as those terms are defined in ORS 459.005.

Applied to this Application
The **maximum tax credit is 35%** because the applicant submitted the application on 9/29/2003, and the facility is used in a **material recovery** process.

Facility Cost

Subtractions
OAR 340-016-0070(1)

Criteria
The applicant must provide documents that substantiate the claimed facility cost. The claimed cost may not include:

a. the salvage value of a pre-existing facility if the applicant is replacing a facility;

b. the amount of any government grants received to pay part of the facility cost;

c. the present value of any other state tax credits for which the investment is eligible; and

d. ineligible costs as set forth in OAR 340-016-0070(3).

Applied to this Application
There are **no subtractions**.

$ Certification
ORS 468.170(1)

Criteria
The certified cost is limited to the actual cost of the material recovery portion of the facility. The certified cost may not exceed the taxpayer's own cash investment in the facility or portion of the facility.

Applied to this Application
The applicant provided copies of **invoices** that **substantiate** the claimed **cost**.

Facility Cost Allocable to Pollution Control

% Certification
ORS 468.170 (1)

Criteria
The certified "percentage allocable" is limited to the portion of the actual facility cost that is properly allocable to the prevention, control, or **reduction of solid waste**, hazardous waste, or to recycling or appropriately disposing of used oil.

ORS 468.190(3)

The percentage of the cost allocable to pollution control is equal to the portion of time that the applicant uses the facility to prevent, control or reduce solid waste, hazardous waste, or to recycle or appropriately dispose of used oil if the cost of the facility **does not exceed $50,000**.

Applied to this Application
The applicant uses the containers **100%** of the time to recover solid waste.

Integral Facility
OAR 340-016-0075 (4)(a)

Criteria
Facilities integral to the applicant's business refer to facilities costing over $50,000, and where the business is unable to operate or is only able to operate at reduced income levels, without the claimed pollution control facility. Determining factors include:

a. The facility represents 25 percent or more of the total assets of the applicant's business.

b. The facility was constructed or installed in response to market demand for such pollution control facilities such as requirements imposed by DEQ, EPA or regional air pollution authority on parties unaffiliated with the applicant; or

c. Where the facility allows the applicant to generate gross revenues at least 50% greater than could be or were without the facility; or

d. The applicant's operating expenses for the facility are at least 50% of the operating expenses for the applicant's entire business.

Applied to this Application
The Integral Facility criteria do not apply to this facility because the cost of the facility does not exceed $50,000.

Compliance

The applicant states that the facility and site are in compliance with Department rules and statutes, and with EQC orders. DEQ issued no permits to the site.

Reviewers: Jeannette Freeman, DEQ
Maggie Vandehey, DEQ

State of Oregon
Department of
Environmental
Quality

Tax Credit Review Report

Pollution Control Facility: Material Recovery
Final Certification
ORS 468.150 -- 468.190
OAR 340-016-0005 -- 340-016-0080

Director's Recommendation

Approve Application No. **6603**

Applicant: **Global Leasing, Inc.**

Certification of:

Facility Cost		$5,211
Percentage Allocable	X	100%
Maximum Percentage	X	35%
Tax Credit		**$1,824**

Certificate Period: **7 years**

Applicant Identification

PO Box 250
North Plains, OR 97133

Organized as: **S Corp**
Taxpayer ID: **93-1097105**

Facility Identification

30966 NW Hillcrest
North Plains, OR 97133

The certificate will identify the facility as:

Ten - 4 yd cardboard recycle containers,
Serial # 28152-28161

Technical Information

Global Leasing, Inc. is the owner of the recycling facility operated as Garbarino Disposal and Recycling Services and claims ten 4-yard cardboard containers. The green steel containers, with swivel casters and lids, are placed at commercial sites throughout Washington County for onsite cardboard collection. The containers are emptied on a regular schedule that can be up to five times a week for some sites. After the cardboard is transported back to their recycle facility, it is sorted and sold to the appropriate recycling mill for reuse into similar products.

Prior to the installation of the claimed facility most of the applicant's customers disposed of the cardboard as solid waste.

Taxpayer Allowed Credit

ORS 315.304(4) Criteria

The taxpayer who is allowed the credit is the:

a. **Owner**, including a contract purchaser, of the trade or business that uses the Oregon property requiring a pollution control facility to prevent or minimize pollution; or

b. Person who, as a lessee or pursuant to an agreement, conducts the trade or business that operates or utilizes such property; or

c. Person who, as an owner, including a contract purchaser, or lessee, owns or leases a pollution control facility **that is used for** recycling, **material recovery** or energy recovery as defined in ORS 459.005.

Applied to this Application

The applicant is the **owner** of the business that uses the cardboard containers in a material recovery process.

Eligibility

Timely Filing
2001 Edition
ORS 468.165(6)

Criteria

The applicant must file the application within one year after the date that they completed construction of the facility. The final application, however, is not valid if the applicant submits the application before they complete construction or before they place the facility into operation.

Applied to this Application

The applicant **filed** the application **within** the one-year **filing requirement**. They completed construction on 7/24/2003 and submitted the application on 10/7/2003. They did not file the application before they completed construction or before they placed the facility into operation on 7/24/2003.

Purpose: Voluntary
ORS 468.155 (1)(a)(B)
OAR 340-016-0010(7)(a)(b)

Criteria

The sole purpose, meaning the 'exclusive' purpose, of the claimed facility must be to prevent, control, or reduce a substantial quantity of solid waste.

"Solid waste" as defined by ORS 459.005: all **useless or discarded** putrescible and non-putrescible materials, including but not limited to garbage, rubbish, refuse, ashes, paper and **cardboard**, sewage sludge, septic tank and cesspool pumpings or other sludge, useless or discarded commercial, industrial, demolition and construction materials, discarded or abandoned vehicles or parts thereof, discarded home and industrial appliances, manure, vegetable or animal solid and semisolid materials, dead animals and infectious waste as defined by ORS 459.386

Applied to this Application

Old corrugated cardboard **meets the definition of** solid waste as defined in ORS 459.005. The containers reduce a substantial quantity of solid waste by

diverting approximately 104 tons annually from landfill disposal.

Method
ORS 468.155 (1)(b)(D)

Criteria
The prevention, control, or reduction must be accomplished by the use of a material recovery process which obtains useful material from material that would otherwise be solid waste.

"Material Recovery" means any process, such as pre-segregation, for obtaining **materials from solid waste**, hazardous waste or used oil. The recovered material shall still have useful physical or chemical properties after serving a specific purpose and can, therefore, be reused or recycled for the same or other purpose. The recovered material shall have **useful physical** or chemical properties that yield a competitive end-product of real economic value.

OAR 340-016-0010(7)
OAR 340-016-0060(4)(e)

Criteria
The facility produces an end product of utilization that is an item of real economic value and is competitive with an end product produced in another state. The facility produces the end product by mechanical processing, chemical processing; or through the production, processing, **pre-segregation**, or use of materials which:

a. Have useful chemical or **physical properties** and which may be used for the same or other purposes: or
b. May be used in the same kind of application as its prior use without change in identity.

Applied to this Application
The applicant uses the containers in a material recovery process to obtain corrugated cardboard from solid waste. The recovered material is collected weekly on-site by the applicant's company trucks and transported to their facility to be sorted and sold to the appropriate recycle mill for its **fiber content**.

Exclusions
ORS 468.155(3)
OAR 340-016-0070(3)

Criteria
The regulations provide a list of over 40 items excluded from the definition of a Pollution Control Facility. Items that do not meet the definition are ineligible for certification.

Applied to this Application
There are **no ineligible costs**.

Replacement
ORS 468.155(3)(e)

Criteria
The replacement or reconstruction of all or part of a facility that the State of Oregon previously certified as a pollution control facility under ORS 468.170 is not eligible for the tax credit with two exceptions:

a. The applicant replaced the facility because DEQ or EPA imposed a different requirement than the requirement to construct the original

facility; or

b. The applicant replaced the facility before the end of its useful life.

Applied to this Application
The State of Oregon issued six certificates for material recovery pollution controls to the applicant at this location. The claimed facility **did not replace** any of the previously certified facilities.

Maximum Credit
ORS 468.170(3)(d)
ORS 468.155(1)(b)(D)

Criteria
The maximum tax credit is 35% if the applicant submitted the application between January 1, 2002 and December 31, 2008, inclusively, and the facility is used for material recovery or recycling, as those terms are defined in ORS 459.005.

Applied to this Application
The maximum tax credit is **35%** because the applicant submitted the application on 10/7/2003, and the facility is used in a **material recovery process.**

Facility Cost

Subtractions
OAR 340-016-0070(1)

Criteria
The applicant must provide documents that substantiate the claimed facility cost. The claimed cost may not include:

a) the salvage value of a pre-existing facility if the applicant is replacing a facility;

b) the amount of any government grants received to pay part of the facility cost;

c) the present value of any other state tax credits for which the investment is eligible; and

d) ineligible costs as set forth in OAR 340-016-0070(3).

Applied to this Application
There are **no subtractions**.

$ Certification
ORS 468.170(1)

Criteria
The certified cost is limited to the actual cost of the material recovery portion of the facility. The certified cost may not exceed the taxpayer's own cash investment in the facility or portion of the facility.

Applied to this Application
The applicant provided copies of invoices that substantiate the claimed cost.

Claimed	$5,211
Certified	**$5,211**

Facility Cost Allocable to Pollution Control

% Certification Criteria

ORS 468.170 (1) The certified "percentage allocable" is limited to the portion of the actual facility cost that is properly allocable to the prevention, control, or **reduction of solid waste**, hazardous waste, or to recycling or appropriately disposing of used oil.

ORS 468.190(3) The percentage of the cost allocable to pollution control is equal to the portion of time that the applicant uses the facility to prevent, control or reduce solid waste, hazardous waste, or to recycle or appropriately dispose of used oil if the cost of the facility **does not exceed $50,000**.

Applied to this Application

The applicant uses the containers **100%** of the time to recover solid waste. The cost of the facility does not exceed $50,000.

Compliance

The applicant states the facility and site are in compliance with Department rules and statutes, and with EQC orders. DEQ issued no permits to the site.

Reviewers: Jeannette Freeman, DEQ
Maggie Vandehey, DEQ

State of Oregon
Department of
Environmental
Quality

Tax Credit Review Report

Pollution Control Facility: Material Recovery
Final Certification
ORS 468.150 -- 468.190
OAR 340-016-0005 -- 340-016-0080

Director's Recommendation

Approve Application No. **6606**

Applicant: **Pacific Sanitation, Inc.**

Certification of:

Facility Cost		$145,704
Percentage Allocable	X	100%
Maximum Percentage	X	35%
Tax Credit		**$50,996**

Certificate Period: **7 years**

Applicant Identification

PO Box 17669
3475 Blossom Drive NE
Salem, OR 97305

Organized as: **C Corp**
Taxpayer ID: **93-0924002**

Facility Identification

3475 Blossom Driver, NE
Salem, OR 97305

The certificate will identify the facility as:

3,736 Rehig 95-gallon carts, Serial #865-4600

Technical Information

Pacific Sanitation, Inc. is a residential and commercial solid waste and recycling collection service. The applicant claims 3,736 95-gallon wheeled carts used to collect co-mingled recyclable materials. Customers pre-segregated their recyclable materials before the applicant started its co-mingled recycling program. The applicant estimates that the new program diverts approxamately 48 tons of material from the landfill each month. This is a 70% increase in the company's recycling rate in Marion County.

Taxpayer Allowed Credit

ORS 315.304(4) Criteria

The taxpayer who is allowed the credit is the:

a. Owner, including a contract purchaser, of the trade or business that uses the Oregon property requiring a pollution control facility to prevent or minimize pollution; or

b. Person who, as a lessee or pursuant to an agreement, conducts the trade or business that operates or utilizes such property; or Person who, as an owner, including a contract purchaser, or

c. lessee, **owns** or leases a pollution control facility **that is used for recycling**, material recovery or energy recovery as defined in ORS 459.005.

Applied to this Application
The applicant is the owner of the wheeled carts used in a material recovery process.

Eligibility

Timely Filing
2001 Edition
ORS 468.165(6)

Criteria
The applicant must file the application within one year after the date that they completed construction of the facility. The final application, however, is not valid if the applicant submits the application before they complete construction or before they place the facility into operation.

Applied to this Application
The applicant **filed** the application **within** the one-year **filing requirement**. They completed construction on 12/2/2002 and submitted the application on 10/14/2003. They did not file the application before they completed construction or before they placed the facility into operation on 12/1/2002.

Purpose: Voluntary
ORS 468.155 (1)(a)(B)
OAR 340-016-0010(7)(a)(b)

Criteria
The sole purpose, meaning the 'exclusive' purpose, of the claimed facility must be to prevent, control, or reduce a substantial quantity of solid waste.

"Solid waste" as defined by ORS 459.005: All **useless or discarded** putrescible and non-putrescible **materials**, including but not limited to garbage, rubbish, refuse, ashes, paper and cardboard, sewage sludge, septic tank and cesspool pumpings or other sludge, useless or discarded commercial, industrial, demolition and construction materials, discarded or abandoned vehicles or parts thereof, discarded home and industrial appliances, manure, vegetable or animal solid and semisolid materials, dead animals and infectious waste as defined by ORS 459.386.

Applied to this Application
Mixed recyclable materials **meets the definition of solid waste** as defined in ORS 459.005. The 95-gallon carts reduce a substantial quantity of solid waste because they divert approximately **48 tons of recyclable material** from the landfill every month.

Method
ORS 468.155 (1)(b)(D)

Criteria
The prevention, control, or reduction must be accomplished by the use of a material recovery process which obtains useful material from material that would otherwise be solid waste below:

"Material Recovery" means any process, such as pre-segregation, for obtaining materials from solid waste, hazardous waste or used oil. The recovered material shall still have useful physical or chemical properties after serving a specific purpose and can, therefore, be reused or recycled for

the same or other purpose. The recovered material shall have useful physical or chemical properties that yield a competitive end-product of real economic value.

OAR 340-016-0010(7)
OAR 340-016-0060(4)(e)

The facility produces an end product of utilization that is an item of real economic value and is competitive with an end product produced in another state. The facility produces the end product by mechanical processing, chemical processing; or through the production, processing, pre-segregation, or use of materials which:

a. Have useful chemical or physical properties and which may be used for the same or other purposes: or

b. May be used in the same kind of application as its prior use without change in identity.

Applied to this Application
Pacific Sanitation, Inc. collects the materials and delivers it to Marion Resource Recovery Facility (MRRF) for sorting. The material is sold to MRRF, however, they charge to sort the commingled recyclables. Very little glass is recycled due to the heavy use of plastics.

MRRF sells the segregated materials to the appropriate manufacturer to be incorporated into a competitive end-product of real economic value.

Exclusions
ORS 468.155(3)
OAR 340-016-0070(3)

Criteria
The regulations provide a list of over 40 items excluded from the definition of a Pollution Control Facility. Items that do not meet the definition are ineligible for certification.

Applied to this Application
There were **no exclusions**.

Replacement
ORS 468.155(3)(e)

Criteria
The replacement or reconstruction of all or part of a facility that the State of Oregon previously certified as a pollution control facility under ORS 468.170 is not eligible for the tax credit with two exceptions:

1) The applicant replaced the facility because DEQ or EPA imposed a different requirement than the requirement to construct the original facility; or

2) The applicant replaced the facility before the end of its useful life.

Applied to this Application
The State of Oregon issued three certificates to the applicant at this location for controlling solid waste pollution. The claimed facility **did not replace** one of the previously certified facilities.

Maximum Credit
ORS 468.170(3)(d)
ORS 468.155(1)(b)(D)

Criteria
The maximum tax credit is 35% if the applicant submitted the application between January 1, 2002 and December 31, 2008, inclusively, and the facility is used for material recovery or recycling, as those terms are defined in ORS 459.005.

Applied to this Application
The **maximum tax credit is 35%** because the applicant submitted the application on 10/14/2003, and the facility is used in a **material recovery** process.

Facility Cost

Subtractions
OAR 340-016-0070(1)

Criteria
The applicant must provide documents that substantiate the claimed facility cost. The claimed cost may not include:

a) the salvage value of a pre-existing facility if the applicant is replacing a facility;

b) the amount of any government grants received to pay part of the facility cost;

c) the present value of any other state tax credits for which the investment is eligible; and

d) ineligible costs as set forth in OAR 340-016-0070(3).

Applied to this Application
There are **no subtractions**.

$ Certification
ORS 468.170(1)

Criteria
The certified cost is limited to the actual cost of the material recovery portion of the facility. The certified cost may not exceed the taxpayer's own cash investment in the facility or portion of the facility.

Applied to this Application
The applicant provided copies of invoices that substantiate the claimed cost.

Referenced Section	Description of Ineligible Portion		Cost
		Claimed	$145,704
		Certified	**$145,704**

Facility Cost Allocable to Pollution Control

% Certification
ORS 468.170(1)

Criteria
The certified "percentage allocable" is limited to the portion of the actual facility cost that is properly allocable to the **prevention**, control, or **reduction of solid waste,** hazardous waste, or to recycling or appropriately disposing of used oil.

Applied to this Application
The applicant uses the 95-gallon carts to reduce solid waste **100%** of the time.

Integral Facility
OAR 340-016-0075 (4)(a)

Criteria
Facilities integral to the applicant's business refer to facilities costing **over $50,000**, and where the business is unable to operate or is only able to operate at reduced income levels, without the claimed pollution control facility. Determining factors include:

a. The facility represents 25 percent or more of the total assets of the applicant's business.

b. The facility was constructed or installed in response to market demand for such pollution control facilities such as requirements imposed by DEQ, EPA or regional air pollution authority on parties unaffiliated with the applicant; or

c. Where the facility allows the applicant to generate gross revenues at least 50% greater than could be or were without the facility; or

d. The applicant's operating expenses for the facility are at least 50% of the operating expenses for the applicant's entire business.

Applied to this Application
The claimed facility is **not integral** to the applicant's business because it does not meet any one of the factors listed above.

Percentage
ORS 468.190(1)

Criteria
The following factors establish the portion of costs properly allocable to material recovery or recycling if the facility **cost exceeds 50,000**.

a. The extent to which the applicant uses the facility to recover and convert waste products into a salable or usable commodity;

b. The estimated annual percent return on the investment in the facility;

c. Any alternative methods, equipment, and costs for achieving the same pollution control objective;

d. Any related savings or increase in costs that occur or may occur as a result of the installation of the facility; and

e. Any other relevant factors.

Applied to this Application
The applicant and the Department calculated the percentage of the facility cost allocable to pollution control according to OAR 340-016-0075(3) while considering the five factors in this section. When calculating the facility's return on investment (ROI), the applicant included the revenue from the recovered materials and the expenditures associated with the carts. The resulting facility ROI, however, is less than the National ROI for **2002** (the year that the applicant completed the construction of the facility) and using a **7-year useful life**. The applicant did not investigate an alternative technology.

Compliance

The applicant states the facility and site are in compliance with Department rules and statutes, and with EQC orders. DEQ has not issued any permits to the site.

Reviewers: Jeannette Freeman, DEQ
Maggie Vandehey, DEQ

BACKGROUND
APPROVALS: Nonpoint Source Pollution Control Facilities

The Department recommends that the Commission approve the certification of **five** facilities presented behind this tab. The recommendations include four approvals of direct-seeding equipment and one wood chipper[1] approval. The Commission's certification could reduce taxes paid to the State of Oregon by a maximum of **$114,010**.

Summary of NPS Pollution Control Facilities

App #	Applicant	Facility Cost	% Allocable	Maximum Tax Credit	GF Liability	EQC Action
6438	James D. Straughan - 80% Thomas E. Straughan - 20%	$ 49,180	100%	50%	$ 24,590	
6479	Kenneth R. McCoy	67,222	100%	35%	23,528	
6532	Timothy Pfeiffer	17,000	100%	35%	5,950	
6538	KLK Farm	98,610	53%	50%	26,132	
6588	Jeff Cutsforth Farm	96,599	100%	35%	33,810	

Apps			
5	**Sum**	**328,611**	**114,010**
	Average	65,722	22,802
	Minimum	17,000	5,950
	Maximum	98,610	33,810
	Median	67,222	24,590

The law defines nonpoint source pollution control facilities as "...a facility that the Environmental Quality Commission has identified by rule as reducing or controlling significant amounts of nonpoint source pollution."[2] The Commission adopted rules that define "nonpoint source pollution"[3] and identify eligible "nonpoint source pollution control facilities"[4] as shown.

Statutory Definition of a "Nonpoint Source Pollution Control"

ORS 468.155 Definitions for ORS 468.155 to 468.190 and 468.962

...

(b) Such prevention, control or reduction required by this subsection shall be accomplished by:

...

---

[1] The EQC delegated wood chipper certification to the Department if the facility cost does not exceed $50,000. See Attachment E for additional information on wood chipper certification.

[2] ORS 468.155(2)(b)

[3] OAR 340-016-0010(8)

[4] OAR 340-016-0060(4)(h)

(2)(a) As used in ORS 468.155 to 468.190 and 468.962, "pollution control facility" or "facility" includes a nonpoint source pollution control facility.

(b) As used in this subsection, "nonpoint source pollution control facility" means a facility that the Environmental Quality Commission has identified by rule as reducing or controlling significant amounts of nonpoint source pollution.

...

OAR 340-016-0010 provides the following pertinent definitions.

"Nonpoint Source Pollution" means pollution that comes from numerous, diverse, or widely scattered sources of pollution that together have an adverse effect on the environment. The meaning includes:

(a) The definition provided in OAR 340-041-0006(17): "Nonpoint Sources" refers to diffuse or unconfined sources of pollution where wastes can either enter into or be conveyed by the movement of water to public waters; or

(b) Any sources of air pollution that are:

(A) Mobile sources that can move on or off roads; or

(B) Area sources.

Eligibility

340-016-0060 Eligibility

...

(4) Eligible Activities. The facility shall prevent, reduce, control, or eliminate:

...

(h) Nonpoint Source Pollution. Pursuant to ORS 468.155(2)(b), the EQC has determined that the following facilities reduce, or control significant amounts of nonpoint source pollution:

(A) Any facility that implements a plan, project, or strategy to reduce or control nonpoint source pollution as documented:

...

(B) Any facility effective in reducing nonpoint source pollution as documented in supporting research by:

...

(C) Wood chippers used to reduce openly burned woody debris; or

(D) The retrofit of diesel engines with a diesel emission control device, certified by the U.S. Environmental Protection Agency.

...

State of Oregon
Department of Environmental Quality

Tax Credit Review Report

Pollution Control Facility: NPS
Final Certification
ORS 468.150 -- 468.190
OAR 340-016-0005 -- 340-016-0080

Director's Recommendation

Approve Application No. **6438**

Applicant: **James D. Straughan**
Thomas E. Straughan

Certification of:		
Facility Cost		$49,180
Percentage Allocable	X	100%
Maximum Percentage	X	50%
Tax Credit		
James Straughan @ 80%		**$19,672**
Thomas Straughan @ 20%		**$4,918**

Certificate Period: **5 years**

Applicant Identification

James D. Straughan
71466 Straughan Road
Pendleton, OR 97801

Organized as: **Individual**
Taxpayer ID: **541-52-5550**

Facility Identification

71466 Straughan Road
Pendleton, OR 97801

The certificate will identify the facility as:

John Deere 1820, 35' Air Hoe Drill, AO1820X695110
John Deere 1900 Commodity Cart, AO1900T695162-JP-7794

Technical Information

James D. Straughan and Thomas E. Straughan manage several farms. They produce small grain crops on 1,833 acres spread throughout 10 tracts of land. The applicant claims an air hoe drill and a commodity cart to direct seed their crops. Prior to purchasing the direct seeding system, they tilled the crop using a conventional method, making several passes with tillage implements to eliminate the previous years crop residue, control weeds, fertilize, prepare the seedbed, and seed the next crop. The conventional tilling system left the soil in a condition susceptible to erosion by wind and water with the potential loss of soil, nutrients and chemical run-off.

The applicant will use the drill and cart on the acreage listed in the table below.

Owner of Land	Acreage	Farm #
L. Straughan & O.L. Straughan Trust	27	16,582
E.& S. Straughan	95	3361
T. & L. Straughan	338	3361
J. & P. Straughan	260	5365
J. Whittaker	200	2091

Taxpayer Allowed Credit

ORS 315.304(4)

Criteria

The taxpayer who is allowed the credit is the:

(a) **Owner**, including a contract purchaser, of the trade or **business** that **uses** the Oregon property requiring a **pollution control facility** to prevent or minimize pollution; or

(b) Person who, as a lessee or pursuant to an agreement, conducts the trade or business that operates or utilizes such property; or

(c) Person who, as an owner, including a contract purchaser, or lessee, owns or leases a pollution control facility that is used for recycling, material recovery or energy recovery as defined in ORS 459.005.

Applied to this Application

The applicant is the owner of the business that uses the property that requires the claimed facility.

Eligibility

Timely Filing
1999 Edition
ORS 468.173(1)
OAR 340-016-0007

Criteria

The applicant must file the application within two years after the date that they completed construction of the facility. The final application, however, is not valid if the applicant submits the application before they complete construction or before they place the facility into operation.

Applied to this Application

The applicant **filed** the application **within** the two-year **filing period** because they completed construction on 12/19/2001 and submitted the application on 1/29/2003. The applicant submitted the application after they completed construction and placed the facility into operation on 4/1/2002.

Purpose: Voluntary
ORS 468.155 (1)(a)(B)
OAR 340-016-0060(2)(a)

Criteria

The sole purpose, meaning the 'exclusive' purpose, of the claimed facility must be to prevent, control, or reduce a substantial quantity of Nonpoint Source Pollution (NPS).

"Nonpoint Source Pollution" means pollution that comes from numerous, diverse, or widely scattered sources of pollution that together have an adverse effect on the environment. The meaning includes:

a. The definition provided in OAR 340-041-0006(17); or

b. Any sources of air pollution that are:

- Mobile sources that can move on or off roads; or
- Area sources.

"Air Pollution" is the presence in the outdoor atmosphere of one or more air contaminants, or any combination thereof, in sufficient quantities and of such

characteristics and of a duration as are or are likely to be injurious to public welfare, to the health of human, plant or animal life or to property or to interfere unreasonably with enjoyment of life and property throughout such area of the state as shall be affected thereby. ORS 468A.005

OAR 340-041-0006(17) "Nonpoint Sources" refers to diffuse or unconfined sources of pollution where wastes can either enter into or be conveyed by the movement of water to public waters.

"Water Pollution" means such alteration of the physical, chemical or biological properties of any waters of the state, including change in temperature, taste, color, turbidity, silt or odor of the waters, or such discharge of any liquid, gaseous, solid, radioactive or other substance into any waters of the state, which will or tends to, either by itself or in connection with any other substance, create a public nuisance or which will or tends to render such waters harmful, detrimental or injurious to public health, safety or welfare, or to domestic, commercial, industrial, agricultural, recreational or other legitimate beneficial uses or to livestock, wildlife, fish or other aquatic life or the habitat thereof. ORS 468B.005

Applied to this Application
Air hoe drills used on arid land greatly reduce the risk of wind and water erosion of the soil by retaining crop residue at the soil's surface. Increased crop residue means more nutrients and improved infiltration rates. It also means that fewer attached chemical compounds could be transported with the erosion. This equipment is used to reduce and control significant amounts of nonpoint source pollution.

Method
ORS 468.155(2)(b)
OAR 340-016-0060(4)(h)(B)(i)

Criteria
Nonpoint source pollution must be reduced or eliminated through one of the methods the EQC determined to reduce, or control significant amounts of nonpoint source pollution (ORS 468.155(2)(b)).

This includes:

a. Any facility that implements a plan, project, or strategy to reduce or control nonpoint source pollution as documented by one or more partners listed in the Oregon Nonpoint Source Control Program Plan.

b. Any facility effective in reducing nonpoint source pollution as documented in supporting research by:

- Oregon State University, Agricultural Experiment Station; or
- The United States Department of Agriculture, Agriculture Research Service; or
- The Oregon Department of Agriculture.

Nonpoint Source Pollution means pollution that comes from numerous, diverse, or widely scattered sources of pollution that together have an adverse effect on

the environment.

Applied to this Application
The air hoe drill **meets the definition of** a nonpoint source pollution control. The Oregon State University Agricultural Experiment Station research indicates the use of a no-till planter on irrigated land greatly reduces the risk of wind and water erosion of the soil by retaining plant residue on the soil's surface.

Increased plant residue means more water in the soil and less sediment in the river, as well as more carbon storage and increased organic matter levels. Carbon storage means better soil tilth and less greenhouse gases. Mary Crop of the OSU/Umatilla County Extension provided documentation on behalf of the applicant that cites the research by L.K. Lutcher, Extension Agronomist for Oregon State University.

Exclusions
ORS 468.155(3)
OAR 340-016-0070(3)

Criteria
The regulations provide a list of over 40 items excluded from the definition of a Pollution Control Facility. Items that do not meet the definition are ineligible for certification.

Applied to this Application
The application record did not indicate that the applicant included any ineligible costs.

Replacement
ORS 468.155(3)(e)

Criteria
The replacement or reconstruction of all or part of a facility that has previously been certified as a pollution control facility under ORS 468.170 is not eligible for the tax credit with two exceptions: 1) the facility was replaced due to a requirement imposed by DEQ or EPA that is different than the requirement to construct the original facility; or 2) the facility was replaced before the end of its useful life.

Applied to this Application
The State of Oregon has not issued any Pollution Control Facilities Tax Credit Certificates to the applicant at this location; therefore, the facility is **not a replacement** facility.

Maximum Credit
ORS 468.173(1)
OAR 340-016-0007

Criteria
The applicable percentage of the certified cost of a facility shall be 50% if the facility is certified under the 1999 Edition of ORS 468.155 to 468.190.

Applied to this Application
The maximum tax credit is 50% because the applicant completed construction of the facility on 12/19/2001, and submitted the application on 1/29/2003.

Facility Cost

Copies of invoices substantiated the claimed facility cost.

Referenced Section	Description of Ineligible Portion		Cost
		Claimed	$49,180
		Certified	**$49,180**

Facility Cost Allocable to Pollution Control

ORS 468.190 (3)

Criteria

If the cost of the facility (or facilities certified under one certificate) does not exceed $50,000, the portion of the actual costs properly allocable shall be in the proportion that the ratio of the time the facility is used for prevention, control or reduction of air, water or noise pollution or solid or hazardous waste or to recycling or appropriately disposing of used oil bears to the entire time the facility is used for any purpose.

Applied to this Application

The certified facility cost is **$49,180** and the applicant uses the facility **100%** of the time for pollution control.

Compliance

The applicant states that the facility and site are in compliance with Department rules and statutes, and with EQC orders. DEQ issued no permits to the site.

Reviewers: Maggie Vandehey, DEQ

State of Oregon
Department of Environmental Quality

Tax Credit Review Report

Pollution Control Facility: NPS
Final Certification
ORS 468.150 -- 468.190
OAR 340-016-0005 -- 340-016-0080

Director's Recommendation

Approve Application No. **6479**

Applicant: **Kenneth R. McCoy**

Certification of:

Facility Cost		$67,222
Percentage Allocable	X	100%
Maximum Percentage	X	35%
Tax Credit		**$23,528**

Certificate Period: **7 years**

Applicant Identification

63173 Dry Creek Lane
Summerville, OR 97876

Organized as: **Sole Proprietor**
Taxpayer ID: **93-098-4607**

Facility Identification

63173 Dry Creek Lane
Summerville, OR 97876

The certificate will identify the facility as:

Bandit self-propelled Wood Chipper, Model 254, Serial # 1217, 200HP, 14" Capacity

Technical Information

Kenneth R. McCoy, dba McCoy Forest Management (MFM), provides complete forest management to landowners in Northeast Oregon. The management complies with the Oregon Department of Forestry, the Forest Practices Act, and the National Fire Fuels Reduction Plan. MFM reduces forest fuel sources by clearing lower limbs, undergrowth, and slash piles. The applicant improves forest stands by thinning, selective cutting, and removal of diseased trees. The applicant then replenishes the forest by planting seedlings and restoring riparian areas. MFM claims a Bandit wood chipper that shreds green slash, limb trimmings, and other forest floor debris for his clients.

Taxpayer Allowed Credit

ORS 315.304(4) The taxpayer who is allowed the credit must be:

(a) The **owner**, including a contract purchaser, **of the** trade or **business** that utilizes Oregon property requiring a pollution control facility to prevent or minimize pollution:

(b) A person who, as a lessee or pursuant to an agreement, conducts the trade or business that operates or utilizes such property;

Applied to this Application
Applicant is the **owner** and operator of the facility located at the address above.

Eligibility

Timely Filing
2001 Edition
ORS 468.165(6)

Criteria
The applicant must file the application within one year after the date that they completed construction of the facility. The final application, however, is not valid if the applicant submits the application before they complete construction or before they place the facility into operation.

Applied to this Application
The applicant **filed** the application **within** the one-year filing requirement because they completed construction on 3/15/2002 and submitted the application on 3/14/2003. The applicant submitted the application after they completed construction and after they placed the facility into operation on 3/15/2002.

Purpose: Voluntary
ORS 468.155 (1)(a)(B)
OAR 340-016-0060(2)(b)

Criteria
The sole purpose, meaning the 'exclusive' purpose, of the claimed facility must be to prevent, control, or reduce a substantial quantity of Nonpoint Source Pollution (NPS).

"Nonpoint Source Pollution" means pollution that comes from numerous, diverse, or widely scattered sources of pollution that together have an adverse effect on the environment. The meaning includes:

a. The definition provided in OAR 340-041-0006(17); or

b. Any sources of air pollution that are:

- Mobile sources that can move on or off roads; or
- Area sources.

"Air Pollution" is the presence in the outdoor atmosphere of one or more air contaminants, or any combination thereof, in sufficient quantities and of such characteristics and of a duration as are or are likely to be injurious to public welfare, to the health of human, plant or animal life or to property or to interfere unreasonably with enjoyment of life and property throughout such area of the state as shall be affected thereby. ORS 468A.005

OAR 340-041-0006(17)

"Nonpoint Sources" refers to diffuse or unconfined sources of pollution where wastes can either enter into – or be conveyed by the movement of water to – public waters.

"Water Pollution" means such alteration of the physical, chemical or biological properties of any waters of the state, including change in temperature, taste, color, turbidity, silt or odor of the waters, or such discharge of any liquid, gaseous, solid, radioactive or other substance into any waters of the state, which will or tends to, either by itself or in connection with any other substance, create a public nuisance or which will or tends to render such waters harmful, detrimental or injurious to public health, safety or welfare, or to domestic, commercial, industrial, agricultural, recreational or other legitimate beneficial uses or to livestock, wildlife, fish or other aquatic life or the habitat thereof. ORS 468B.005

Applied to this Application
The wood chipper reduces a substantial quantity of NPS pollution. The wood chipper produces forest floor mulch rather than burning or landfilling the wood waste. The applicant states that use of the wood chipper reduces wood waste a minimum of 35 tons an acre.

Method
ORS 468.155(2)(b)
OAR 340-016-0060(4)(h)(C)

Criteria
The applicant must reduce or eliminate nonpoint source pollution through one of the methods the EQC determined to reduce, or control significant amounts of nonpoint source pollution. The EQC determined that wood chippers reduce a significant amount of nonpoint source pollution.

Applied to this Application
Burning woody debris **meets the definition of** nonpoint source pollution as defined in ORS 468.155(2)(b). The wood chipper reduces nonpoint source pollution by chipping woody debris rather than burning it, disposing of it in a landfill, or leaving it on the forest floor.

Exclusions
ORS 468.155(3)
OAR 340-016-0070(3)

Criteria
The regulations provide a list of over 40 items excluded from the definition of a Pollution Control Facility. Items that do not meet the definition are ineligible for certification.

Applied to this Application
There are **no exclusions**.

Replacement
ORS 468.155(3)(e)

Criteria
The replacement or reconstruction of all or part of a facility that has previously been certified as a pollution control facility under ORS 468.170 is not eligible for the tax credit with two exceptions:

1. The facility was replaced due to a requirement imposed by DEQ or EPA that is different than the requirement to construct the original facility; or

2. The applicant replaced the original facility before the end of its useful life.

Applied to this Application
The State of Oregon has not issued any Pollution Control Facilities Tax Credit Certificates to the applicant at this location; therefore, the facility is **not a replacement** facility.

Maximum Credit
ORS 468.173(3)(c)
ORS 468.155(2)

Criteria
The maximum tax credit is 35% if the applicant submitted the application between January 1, 2002 and December 31, 2008, inclusively, and the facility controls nonpoint source pollution.

Applied to this Application
The **maximum tax credit is 35%** because the applicant submitted the application on 3/14/2003, and the facility is defined as a nonpoint source pollution control facility.

Facility Cost

Copies of invoices substantiated the claimed facility cost.

Referenced Section	Description of Ineligible Portion		Cost
		Claimed	$67,222
		Certified	**$67,222**

Facility Cost Allocable to Pollution Control

The Applicant and the Department considered the following factors to determine that **100%** of the facility cost is allocable to pollution control.

Factor	Applied to this Facility
ORS 468.190(1)(a)	Salable/Usable Commodity: The facility produces no salable or usable commodities.
ORS468.190(1)(b)	Return on Investment (ROI): The functional life of the facility used in considering the ROI is 7 years. The claimed facility does not have a return on the investment; therefore, 100% of the facility cost is allocable to pollution control.
ORS 468.190(1)(c)	Alternative Methods: The applicant did not investigate an alternative technology because the claimed facility is the best available technology.
ORS 468.190(1)(d)	Savings/Increase Costs: There are no significant savings or increases in costs.
ORS 468.190(1)(e)	Other Relevant Factors: There are no other relevant factors.

Compliance

The applicant states that the facility is in compliance with Department rules and statutes and with EQC orders. DEQ has not issued any permits to the applicant.

Reviewers: Maggie Vandehey, DEQ

State of Oregon
Department of Environmental Quality

Tax Credit Review Report

Pollution Control Facility: NPS
Final Certification
ORS 468.150 -- 468.190
OAR 340-016-0005 -- 340-016-0080

Director's Recommendation

Approve Application No. **6532 @ Reduced Cost**

Applicant: **Timothy Pfeiffer**

Certification of:

Facility Cost		$17,000
Percentage Allocable	X	100%
Maximum Percentage	X	35%
Tax Credit		**$5,950**

Certificate Period: **7 years**

Applicant Identification

10400 NW Moores Valley Road
Yamhill, OR 97148

Organized as: **Sole Proprietor**
Taxpayer ID: **93-0820044**

Facility Identification

10400 NW Moores Valley Road
Yamhill, OR 97148

The certificate will identify the facility as:

One - John Deere No-Till Drill, Model 1560, Serial # 683066

Technical Information

Timothy Pfeiffer owns and operates an 800-acre grass seed, clover seed, and hay farm near Yamhill, Oregon. The North Yamhill River is less than ¼ mile from the farm. The applicant used conventional methods of cultivating and planting the fields. They tilled the fields several times before seeding the fields. Tillage caused wind and water erosion of the soil. These conventional methods required an increased quantitity of water, fertilizers, pesticide, and herbicide usage. Surface water runoff carried loose materials, dirt, and chemicals from the farm to the river during irrigation and wet weather events. This increased contaminants in the North Yamhill River.

The applicant replaced his conventional cultivating and plant equipment with a John Deere, Model 1560, No-Till Drill. The claimed facility allows the applicant to plant seed without disturbing the soil surface. The no-till drill makes a narrow slit in the soil and places seed into the slit at a preset depth. Wheels located behind the seed injector pack the soil around the seed. This technique reduces the number of passes over the field that disturb and dry out the soil. It also leaves the old stubble on the field to prevent erosion and retain water. This provides a more beneficial growing environment, so that the crop needs fewer chemicals to flourish. Oregon State University Extension Service recognizes no-till drilling as a method that eliminates pollution caused by ordinary cultivating of the land.

Taxpayer Allowed Credit

ORS 315.304(4) The taxpayer who is allowed the credit is the:

(a) **Owner**, including a contract purchaser, of the trade or business that **uses** the Oregon property requiring a pollution control facility to prevent or minimize pollution; or

(b) Person who, as a lessee or pursuant to an agreement, conducts the trade or business that operates or utilizes such property; or

(c) Person who, as an owner, including a contract purchaser, or lessee, owns or leases a pollution control facility that is used for recycling, material recovery or energy recovery as defined in ORS 459.005.

Applied to this Application

The applicant owns the farm that uses the claimed equipment.

Eligibility

Timely Filing

OAR 340-016-0007 Criteria

The applicant must file the application within one year after the date that they complete construction or purchase the facility. The final application, however, is not valid if the applicant submits the application before they complete construction or before they place the facility into operation.

Applied to this Application

The applicant **filed** the application **within the** one-year **filing requirement** because they purchased the claimed facility on 11/9/2002 and filed the application on 6/11/2003. The applicant submitted the application after they completed construction and after they placed the facility into operation on 11/10/2002.

Purpose: Voluntary

ORS 468.155 (1)(a)(B)
OAR 340-016-0060(2)(a) Criteria

The sole purpose, meaning the 'exclusive' purpose, of the claimed facility must be to prevent, control, or reduce a substantial quantity of Nonpoint Source (NPS) Pollution.

"Nonpoint Source Pollution" means pollution that comes from numerous, diverse, or widely scattered sources of pollution that together have an adverse effect on the environment. The meaning includes:

a. The definition provided in OAR 340-041-0006(17); or

b. Any sources of air pollution that are:
   - Mobile sources that can move on or off roads; or
   - Area sources.

"Air Pollution" is the presence in the outdoor atmosphere of one or more air contaminants, or any combination thereof, in sufficient quantities and of such characteristics and of a duration as are or are likely to be injurious to public

welfare, to the health of human, plant or animal life or to property or to interfere unreasonably with enjoyment of life and property throughout such area of the state as shall be affected thereby. (ORS 468A.005)

OAR 340-041-0006(17) "Nonpoint Sources" refers to diffuse or unconfined sources of pollution where wastes can either enter into or be conveyed by the movement of water to public waters."

"Water Pollution" means such alteration of the physical, chemical or biological properties of any waters of the state, including change in temperature, taste, color, turbidity, silt or odor of the waters, or such discharge of any liquid, gaseous, solid, radioactive or other substance into any waters of the state, which will or tends to, either by itself or in connection with any other substance, create a public nuisance or which will or tends to render such waters harmful, detrimental or injurious to public health, safety or welfare, or to domestic, commercial, industrial, agricultural, recreational or other legitimate beneficial uses or to livestock, wildlife, fish or other aquatic life or the habitat thereof. (ORS 468B.005)

Applied to this Application
The no-till drill reduces a substantial quantity of water pollution compared to the previous method. It provides one-pass planting without any ground tillage while preserving plant residue on the soil's surface. This results in less soil erosion. The applicant could have continued to use the conventional equipment and methods and the cost savings are incidental; therefore, the sole purpose of the no-till drill is water pollution control.

Method
ORS 468.155(2)(b)
OAR 340-016-0060(4)(h)(B)(i)

Criteria
Nonpoint source pollution must be reduced or eliminated through one of the methods the EQC determined to reduce, or control significant amounts of nonpoint source pollution (ORS 468.155(2)(b)).

This includes:

a. Any facility that implements a plan, project, or strategy to reduce or control nonpoint source pollution as documented by one or more partners listed in the Oregon Nonpoint Source Control Program Plan.

b. Any facility effective in reducing nonpoint source pollution as documented in supporting research by:

- Oregon State University, Agricultural Experiment Station; or
- The United States Department of Agriculture, Agriculture Research Service; or
- The Oregon Department of Agriculture.

Applied to this Application
The applicant uses the no-till drill to reduce and control significant amounts of **nonpoint source pollution** as determined by the EQC and documented by

research from the Oregon State University Agricultural Experiment Station. The use of a no-till planter on irrigated land greatly reduces the risk of wind and water erosion of the soil by retaining plant residue on the soil's surface. Extension Agronomist for Oregon State University in Yamhill County provided a letter on the applicant's behalf.

The Oregon State University Extension Service recommends the no-till drill technique for planting seeds to prevent soil sediments from entering wetlands and waterways. No-till drill meets the goals of the Oregon Nonpoint Source Control Program Plan and the guidelines in Senate Bill SB 1010. The Oregon Legislature enacted SB 1010 to meet a number of federal water quality requirements.

Exclusions
ORS 468.155(3)
OAR 340-016-0070(3)

Criteria
The regulations provide a list of more than 40 items excluded from the definition of a Pollution Control Facility. Items that do not meet the definition are ineligible for certification.

Applied to this Application
The applicant included **financing fees** in the claimed facility cost, which regulations exclude. The Department subtracted the amount from the claimed facility cost under the *Facility Cost* section below.

Replacement
ORS 468.155(3)(e)

Criteria
The replacement or reconstruction of all or part of a facility that has previously been certified as a pollution control facility under ORS 468.170 is not eligible for the tax credit with two exceptions: 1) the facility was replaced due to a requirement imposed by DEQ or EPA that is different than the requirement to construct the original facility; or 2) the facility was replaced before the end of its useful life.

Applied to this Application
The State of Oregon has not issued any Pollution Control Facilities Tax Credit Certificates to the applicant at this location; therefore, the facility is **not a replacement** facility.

Maximum Credit
ORS 468.173(3)(c)
ORS 468.155(2)

Criteria
The maximum tax credit is 35% if the applicant submitted the application between January 1, 2002 and December 31, 2008, inclusively, and the facility controls nonpoint source pollution.

Applied to this Application
The **maximum tax credit is 35%** because the applicant submitted the application on 6/11/2003, and the facility is defined as a nonpoint source pollution control facility.

Facility Cost

ORS 468.170(1) limits the certified cost to the taxpayer's own cash investment. The applicant traded in two small tractors to purchase the new John Deere equipment. Copies of invoices substantiated the claimed facility cost.

Referenced Section	Description of Ineligible Portion		Cost
		Claimed	$23,620
Facility	Trade-in		-6,500
Exclusions	John Deer loan fee		-120
		Certified	**$17,000**

Facility Cost Allocable to Pollution Control

ORS 468.190 (3)

Criteria

If the cost of the facility (or facilities certified under one certificate) does not exceed $50,000, the portion of the actual costs properly allocable shall be in the proportion that the ratio of the time the facility is used for prevention, control or reduction of air, water or noise pollution or solid or hazardous waste or to recycling or appropriately disposing of used oil bears to the entire time the facility is used for any purpose.

Applied to this Application

The certified facility cost is **$17,000** and the applicant uses the facility 100% of the time for pollution control.

Compliance

The applicant states that the facility and site are in compliance with Department rules and statutes, and with EQC orders. DEQ has not issued any permits to the site.

Reviewers: PBS Engineering and Environmental
Maggie Vandehey, DEQ

State of Oregon
Department of Environmental Quality

Tax Credit Review Report

Pollution Control Facility: NPS
Final Certification
ORS 468.150 -- 468.190
OAR 340-016-0005 -- 340-016-0080

Director's Recommendation

Approve Application No. **6538 @ Reduce Percentage**

Applicant: **KLK Farm**

Certification of:

Facility Cost		$98,610
Percentage Allocable	X	53%
Maximum Percentage	X	50%
Tax Credit		**$26,132**

Certificate Period: **10 years**

Applicant Identification

PO Box 195
Ione, OR 97843

Organized as: **Partnership**
Taxpayer ID: **93-11941127**

Facility Identification

64396 McNab Lane
Ione, OR 97843

The certificate will identify the facility as:

One - Conserva Pak No-till Drill Seeder, Model CP3912, Serial # 39120101
One - Flexi-Coil Air Cart, Model 2340, Serial # 2340-104668
One - Self-constructed Fertilizer Tank

Technical Information

KLK Farm is a dryland wheat farm. The farm grows wheat on approximately 6,750 acres. The applicant claims a three-row 40' wide Conserva Pak No-till drill, and a towable Flexi-Coil air cart for carrying the seed. The applicant also claims a self-constructed fertilizer tank that is mounted on the drill to fertilize the seed at the time of planting.

With the no-till cropping system in place, KLK Farm has reduced the number of passes from up to 10 passes using the conventional method to three passes each year. The ability to maintain a surface residue (residue from a previous crop) has reduced the amount of non-point source pollution in airborne particulates and stormwater run-off. The residue crop also allows for improved infitration rates and increased nutrient efficiency. Conventional methods of tilling left the soils susceptible to wind and water erosion.

Taxpayer Allowed Credit

ORS 315.304(4)

Criteria

The taxpayer who is allowed the credit is the:

a. **Owner**, including a contract purchaser, of the trade or business that **uses** the Oregon property requiring a pollution control facility **to prevent or minimize pollution**; or

b. Person who, as a lessee or pursuant to an agreement, conducts the trade or business that operates or utilizes such property; or

c. Person who, as an owner, including a contract purchaser, or lessee, owns or leases a pollution control facility that is used for recycling, material recovery or energy recovery as defined in ORS 459.005.

Applied to this Application

Applicant is the owner of the business that uses the property that requires the claimed facility.

Eligibility

Timely Filing

ORS 468.173(1)
OAR 340-016-0007

Criteria

The applicant must file the application within two years after the date that they complete construction of the facility. The final application, however, is not valid if the applicant submits the application before they complete construction or before they place the facility into operation.

Applied to this Application

The applicant **filed** the application **within** the two-year filing requirement because they completed construction on 10/10/2001 and submitted the application on 7/7/2003. The applicant submitted the application after they completed construction and after they placed the facility into operation on 10/15/2001.

Purpose: Voluntary

ORS 468.155 (1)(a)(B)
OAR 340-016-0060(2)(b)

Criteria

The sole purpose, meaning the 'exclusive' purpose, of the claimed facility must be to prevent, control, or reduce a substantial quantity of Nonpoint Source Pollution (NPS).

"Nonpoint Source Pollution" means pollution that comes from numerous, diverse, or widely scattered sources of pollution that together have an adverse effect on the environment. The meaning includes:

a. The definition provided in OAR 340-041-0006(17); or

b. Any sources of air pollution that are:

- Mobile sources that can move on or off roads; or
- Area sources.

"Air Pollution" is the presence in the outdoor atmosphere of **one or more air contaminants**, or any combination thereof, in sufficient quantities and of such characteristics and of a duration as are or are likely to be injurious to public welfare, to the health of human, plant or animal life or to property or to interfere unreasonably with enjoyment of life and property throughout such area of the state as shall be affected thereby. ORS 468A.005

OAR 340-041-0006(17)

"Nonpoint Sources" refers to diffuse or unconfined sources of pollution where wastes can either enter into -- or be conveyed by the movement of water to – public waters.

"Water Pollution" means such **alteration** of the **physical, chemical** or biological properties of any waters of the state, including change in temperature, taste, **color, turbidity, silt** or odor of the waters, or such discharge of any liquid, gaseous, solid, radioactive or other substance into any waters of the state, which will or tends to, either by itself or in connection with any other substance, create a public nuisance or which will or tends to render such waters harmful, detrimental or injurious to public health, safety or welfare, or to domestic, commercial, industrial, agricultural, recreational or other legitimate beneficial uses or to livestock, wildlife, fish or other aquatic life or the habitat thereof. ORS 468B.005

Applied to this Application
The **sole purpose** of the no-till drill system is to significantly reduce and control nonpoint source pollution.

Method
ORS 468.155(2)(b)
OAR 340-016-0060(4)(h)(B)(i)

Criteria
Nonpoint source pollution must be reduced or eliminated through one of the methods the EQC determined to reduce, or control significant amounts of nonpoint source pollution (ORS 468.155(2)(b)).

This includes:

A. Any facility that implements a plan, project, or strategy to reduce or control nonpoint source pollution as documented by one or more partners listed in the Oregon Nonpoint Source Control Program Plan.

B. Any facility effective in reducing nonpoint source pollution as documented in supporting research by:

   a. Oregon State University, **Agricultural Experiment Station**; or

   b. The United States Department of Agriculture, Agriculture Research Service; or

   c. The Oregon Department of Agriculture.

Applied to this Application
The no-till drill **meets the definition** of a nonpoint source pollution control. In research done by the Oregon State University Agricultural Experiment Station, a no-till cropping system reduces non-point source pollution by allowing the

surface residue to act as a physical barrier to resist surface erosion. It also allows the soil to increase nutrient and moisture infiltration. Larry Lutcher, an agronomist with the Oregon State University's Morrow County Extension Office, provided supporting research on the applicant's behalf. The Department attached the letter to this report.

Exclusions
ORS 468.155(3)
OAR 340-016-0070(3)

Criteria
The regulations provide a list of over 40 items excluded from the definition of a Pollution Control Facility. Items that do not meet the definition are ineligible for certification.

Applied to this Application
There are **no exclusions**.

Replacement
ORS 468.155(3)(e)

Criteria
The replacement or reconstruction of all or part of a facility that the State of Oregon previously certified as a pollution control facility under ORS 468.170 is not eligible for the tax credit with two exceptions:

1) The applicant replaced the facility because DEQ or EPA imposed a different requirement than the requirement to construct the original facility; or

2) The applicant replaced the facility before the end of its useful life.

Applied to this Application
The State of Oregon has not issued any Pollution Control Facilities Tax Credit Certificates to the applicant at this location; therefore, the facility is **not a replacement** facility.

Maximum Credit
ORS 468.173(1)
OAR 340-016-0007

Criteria
The applicable percentage of the certified cost of a facility shall be 50% if the facility is certified under the 1999 Edition of ORS 468.155 to 468.190.

Applied to this Application
The **maximum tax credit is 50%** because the applicant completed construction of the facility on 10/10/2001, and submitted the application on 7/7/2003.

Facility Cost

Copies of invoices substantiated the claimed facility cost.

Referenced Section	Description of Ineligible Portion		Cost
		Claimed	$98,610
		Certified	**$98,610**

Facility Cost Allocable to Pollution Control

The Applicant and the Department considered the following factors to determine that **53%** of the facility cost is allocable to pollution control.

Factor	Applied to this Facility
ORS 468.190(1)(a)	Salable/Usable Commodity: The facility produces a wheat crop.
ORS 468.190(1)(b)	Return on Investment (ROI): The functional life of the facility used in considering the ROI is **10** years. The percentage of the cost allocable to pollution control is **53%** when calculated according to rule.
ORS 468.190(1)(c)	Alternative Methods: The applicant did not investigate an alternative technology because the claimed facility is the best available technology.
ORS 468.190(1)(d)	Savings/Increase Costs: The applicant realizes a gross annual savings in the cost of fuel and maintenance amounting to $35,797. The application preparer, Cory Neistadt, considered the savings in the ROI calculation. The Department concurs.
ORS 468.190(1)(e)	Other Relevant Factors: The application record does not indicate there are any other relevant factors.

Compliance

The applicant states that the facility is in compliance with Department rules and statutes and with EQC orders. There were no DEQ permits issued to this facility.

Reviewers: Jeannette Freeman, DEQ
Maggie Vandehey, DEQ

State of Oregon
Department of Environmental Quality

Tax Credit Review Report

Pollution Control Facility: NPS
Final Certification
ORS 468.150 -- 468.190
OAR 340-016-0005 -- 340-016-0080

Director's Recommendation

Approve

Application No. **6588**

Applicant: **Jeff Cutsforth Farm**

Certification of:

Facility Cost		$96,599
Percentage Allocable	X	100%
Maximum Percentage	X	35%
Tax Credit		**$33,810**

Certificate Period: **10 years**

Applicant Identification

66790 Highway 207
Lexington, OR 97839

Organized as: **Partnership**
Taxpayer ID: **93-1212154**

Facility Identification

66790 Highway 207
Lexington, OR 97839

The certificate will identify the facility as:

One – Flexicoil 5000 Air Drill, SN: AD-101602
One – Flexicoil 2340 Air Seeder Cart, SN: 2340-107431
One – Case IH Quad Tractor, SN: JEE102918

Technical Information

The applicant owns and operates a 2,570-acre dryland wheat farm near Lexington, Oregon, in the Columbia Lower Middle Drainage Basin. Tributaries to Willow Creek pass through the applicant's farm. The applicant had used conventional methods of cultivating and planting the fields. These methods disturbed the soil and increased the possibility of wind and water erosion. This created excessive particulate matter (PM) in the air and the potential for increased sediments in Willow Creek. The conventional methods of cultivating and planting required 10 separate passes over the fields.

The applicant replaced his conventional cultivating and planting equipment with a Flexicoil Air Drill, a Flexicoil Air Seeder Cart, and a Case tractor. The applicant's existing tractor did not have sufficient power to pull the heavier new equipment. The claimed facility allows the applicant to plant seed without disturbing the soil surface. This technique also reduces the number of passes over the field from ten to three. It leaves the old stubble on the field to prevent erosion and retain water. Oregon State University Extension Service recognizes no-till drilling as a method that eliminates pollution caused by ordinary cultivating and planting methods.

Taxpayer Allowed Credit

ORS 315.304(4) Criteria

The taxpayer who is allowed the credit must be:

a. The **owner**, including a contract purchaser, of the trade or **business** that utilizes Oregon property requiring a pollution control facility to prevent or minimize pollution:

b. A person who, as a lessee or pursuant to an agreement, conducts the trade or business that operates or utilizes such property.

Applied to this Application

The applicant is the owner of the business that uses the claimed facility.

Eligibility

Timely Filing

OAR 340-016-0007 Criteria

The applicant must submit the application within one year after the date that they completed construction or purchase of the facility. The final application, however, is not valid if the applicant submits the application before they complete construction or before they place the facility into operation.

Applied to this Application

The applicant filed the application **within** the one-year **filing period** because they purchased the claimed facility on September 17, 2002 and submitted the application on September 12, 2003. The applicant submitted the application after they completed construction and placed the facility into operation on October 20, 2002.

Purpose: Voluntary

ORS 468.155 (1)(a)(B)
OAR 340-016-0060(2)(a) Criteria

The sole purpose, meaning the 'exclusive' purpose, of the claimed facility must be to prevent, control, or reduce a substantial quantity of Nonpoint Source (NPS) Pollution.

"Nonpoint Source Pollution" means pollution that comes from numerous, diverse, or widely scattered sources of pollution that together have an adverse effect on the environment. The meaning includes:

a. The definition provided in OAR 340-041-0006(17); or

b. Any sources of air pollution that are:
   - Mobile sources that can move on or off roads; or
   - Area sources.

"Air Pollution" is the presence in the outdoor atmosphere of one or more air contaminants, or any combination thereof, in sufficient quantities and of such characteristics and of a duration as are or are likely to be injurious to public welfare, to the health of human, plant or animal life or to property or to interfere unreasonably with enjoyment of life and property throughout such area of the state as shall be affected thereby. (ORS 468A.005)

OAR 340-041-0006(17) "Nonpoint Sources" refers to diffuse or unconfined sources of pollution where wastes can either enter into or be conveyed by the movement of water to public waters."

> "Water Pollution" means such alteration of the physical, chemical or biological properties of any waters of the state, including change in temperature, taste, color, turbidity, silt or odor of the waters, or such discharge of any liquid, gaseous, solid, radioactive or other substance into any waters of the state, which will or tends to, either by itself or in connection with any other substance, create a public nuisance or which will or tends to render such waters harmful, detrimental or injurious to public health, safety or welfare, or to domestic, commercial, industrial, agricultural, recreational or other legitimate beneficial uses or to livestock, wildlife, fish or other aquatic life or the habitat thereof. (ORS 468B.005)

Applied to this Application
The use of a no-till planter on arid land greatly reduces the risk of wind and water erosion of the soil by retaining crop residue at the soil's surface. Increased crop residue means more nutrients and improved infiltration rates. It also means that fewer attached chemical compounds could be transported with the erosion.

Method
ORS 468.155 (2)(b)
OAR 340-016-0060(4)(h)(B)(i)

Criteria
Nonpoint source pollution must be reduced or eliminated through one of the methods the EQC determined to reduce, or control significant amounts of nonpoint source pollution (ORS 468.155(2)(b)).

This includes:

a. Any facility that implements a plan, project, or strategy to reduce or control nonpoint source pollution as documented by one or more partners listed in the Oregon Nonpoint Source Control Program Plan.

b. Any facility effective in reducing nonpoint source pollution as documented in supporting research by:

- Oregon State University, Agricultural Experiment Station; or
- The United States Department of Agriculture, Agriculture Research Service; or
- The Oregon Department of Agriculture.

Applied to this Application
Airborne particulates and sediment runoff **meet the definition of** nonpoint source pollution. Larry Lutcher, Extension Agronomist for Oregon State University in Morrow County documented the qualifications on the applicant's behalf.

Exclusions

ORS 468.155(3)
OAR 340-016-0070(3)

Criteria
The regulations provide a list of more than 40 items excluded from the definition of a Pollution Control Facility. Items that do not meet the definition are ineligible for certification.

Applied to this Application
There are **no exclusions**.

Replacement

ORS 468.155(3)(e)

Criteria
The replacement or reconstruction of all or part of a facility that has previously been certified as a pollution control facility under ORS 468.170 is not eligible for the tax credit with two exceptions: 1) the facility was replaced due to a requirement imposed by DEQ or EPA that is different than the requirement to construct the original facility; or 2) the facility was replaced before the end of its useful life.

Applied to this Application
The State of Oregon has not issued any Pollution Control Facilities Tax Credit Certificates to the applicant at this location; therefore, the facility is **not a replacement** facility.

Maximum Credit

ORS 468.173(3)(c)
ORS 468.155(2)

Criteria
The maximum tax credit is 35% if the applicant submitted the application between January 1, 2002 and December 31, 2008, inclusively, and the facility controls nonpoint source pollution.

Applied to this Application
The maximum tax credit is 35% because the applicant submitted the application on September 12, 2003, and the facility is defined as a nonpoint source pollution control facility.

Facility Cost

The applicant only uses the tractor one-third of the time to tow the no-till drill. The applicant only claimed that percentage of tractor's invoice cost. Copies of invoices substantiated the claimed facility cost.

Referenced Section	Description of Ineligible Portion		Cost
		Claimed	$96,599
		Certified	**$96,599**

Facility Cost Allocable to Pollution Control

The Department considered the following factors in its recommendation that the EQC certify 100% of the claimed facility cost as allocable to pollution control.

Factor	Applied to This Facility
ORS 468.190(1)(a)	**Salable/Usable Commodity**: The facility produces no salable or usable commodities.
ORS 468.190(1)(b)	**Return on Investment (ROI)**: The functional life of the facility used in considering the ROI is 10 years. The percentage of the cost allocable to pollution control is 100% when calculated according to rule.
ORS 468.190(1)(c)	**Alternative Methods:** The applicant did not investigate an alternative because the claimed facility is the best available technology.
ORS 468.190(1)(d)	**Savings/Increased Costs:** The applicant realizes a net annual savings in the cost of fuel amounting to $3,985. The applicant considered the savings in the ROI calculation.
ORS 468.190(1)(e)	**Other Relevant Factors:** There are no other relevant factors.

Compliance

The applicant states that the facility and site are in compliance with Department rules and statutes, and with EQC orders. DEQ issued no permits to the site.

Reviewers: PBS Engineering and Environmental
Maggie Vandehey, Oregon DEQ

BACKGROUND
APPROVALS: Water Pollution Control Facilities

The Department recommends that the Environmental Quality Commission approve **3** water pollution control facilities installed to dispose of or eliminate industrial waste and the use of treatment works for industrial waste as defined in ORS 468B.005. The Commission's certification of these facilities could reduce taxes paid to the State of Oregon by a maximum of **$60,541**.

One applicant constructed a facility in response to a Department of Environmental Quality or a federal Environmental Protection Agency requirement. This **principal purpose** facility's primary and most important purpose is to comply with a requirement to prevent, reduce, control, or eliminate water pollution.

Two applicants voluntarily installed facilities not required by DEQ, EPA or a regional water pollution authority. These facilities have a **sole purpose**, meaning an exclusive pollution control purpose. Additionally, these facilities control a substantial quantity of water pollution. The Department has subtracted any portions of these facilities that serve other purposes.

Summary of Water Pollution Control Facilities

App #	Applicant	Facility Cost	% Allocable	Maximum Tax Credit	GF Liability	EQC Action
6446	John W. Lekkerkerker	$ 144,840	100%	50%	$ 72,420	
6484	Terrain Tamers Chip Hauling Inc.	16,882	100%	35%	5,909	
6501	U Pull It Salem Auto Wrecking, Inc.	7,875	100%	50%	3,938	

Apps			
3	**Sum**	**169,597**	**82,267**
	Average	56,532	27,422
	Minimum	7,875	3,938
	Maximum	144,840	72,420
	Median	16,882	5,909

Statutory Definition of a "Water Pollution Control Facility"

ORS 468.155 provides the definition of a pollution control facility. Part of that definition describes how the applicant must accomplish the pollution control. For water pollution control facilities, the prevention, control, or reduction must be accomplished by "The disposal or elimination of or redesign to eliminate industrial waste and the use of treatment works for industrial waste as defined in ORS 468B.005."

ORS 468.155 Definitions for ORS 468.155 to 468.190 and 468.962

...

(b) Such prevention, control or reduction required by this subsection shall be accomplished by:

...

(A) The disposal or elimination of or redesign to eliminate industrial waste and the use of treatment works for industrial waste as defined in ORS 468A.005;

...

ORS 468B.005 provides the following pertinent definitions.

"Industrial waste" means any liquid, gaseous, radioactive or solid waste substance or a combination thereof resulting from any process of industry, manufacturing, trade or business, or from the development or recovery of any natural resources.

"Treatment works" means any plant or other works used for the purpose of treating, stabilizing or holding wastes.

"Wastes" means sewage, industrial wastes, and all other liquid, gaseous, solid, radioactive or other substances which will or may cause pollution or tend to cause pollution of any waters of the state.

"Water pollution" means such alteration of the physical, chemical or biological properties of any waters of the state, including change in temperature, taste, color, turbidity, silt or odor of the waters, or such discharge of any liquid, gaseous, solid, radioactive or other substance into any waters of the state, which will or tends to, either by itself or in connection with any other substance, create a public nuisance or which will or tends to render such waters harmful, detrimental or injurious to public health, safety or welfare, or to domestic, commercial, industrial, agricultural, recreational or other legitimate beneficial uses or to livestock, wildlife, fish or other aquatic life or the habitat thereof.

Eligibility

OAR 340-016-0060 Eligibility

...

(4) Eligible Activities. The facility shall prevent, reduce, control, or eliminate:

...

(d) Industrial Waste. The facility shall dispose of, eliminate or be redesigned to eliminate industrial waste and the use of treatment works for industrial wastewater as defined in ORS 468B.005; ...

State of Oregon
Department of Environmental Quality

Tax Credit Review Report

Pollution Control Facility: Water/CAFO
Final Certification
ORS 468.150 -- 468.190
OAR 340-016-0005 -- 340-016-0080

Director's Recommendation

Approve Application No. **6446 @ Reduced Cost**

Applicant: **John W. Lekkerkerker**

Certification of:

Facility Cost		$144,840
Percentage Allocable	X	100%
Maximum Percentage	X	50%
Tax Credit		**$72,420**

Certificate Period: **10 years**

Applicant Identification

12285 Elkins Road
Monmouth, OR 97361

Organized as: **Individual**
Taxpayer ID: **545-92-2816**

Facility Identification

12285 Elkins Road
Monmouth, OR 97361

The certificate will identify the facility as:

One – Two-stage manure storage lagoon
One - Cat 4 cycle diesel power unit, Model B10K-202, Serial #5MF01368
One - Used Water Master Irrigator, Serial #EW3000-2 1000-32-05-01
Two - 1.25w 5HP Single Phase Pumps, Serial #'s 5FLP-1.25W-202-001, 5FLP-1.25W-202-002

Technical Information

John W. Lekkerkerker owns a Holstein dairy farm with 650 cows. The barns confine 380 milking cows, 30 dry cows, 200 heifers, and 40 calves during the wettest months of the year. The applicant claims a two-stage manure storage lagoon to collect and store manure waste from the confined areas of the dairy. The first stage is a 6.7-acre pond, and the second stage is a 27.8-acre pond. The lagoon has an earthen berm around its perimeter and segmenting the two ponds.

The applicant flushes manure out of the barns onto a sloped concrete pad that flows into a 30' x 10' underground animal waste holding tank. The pad and the tank were part of the pre-exisiting manure handling system. The applicant modified the back of the tank to allow the manure to empty into the new lagoon's first-stage pond. The applicant claims a catch basin that retains solids in the first pond and allows the remaining liquids to flow into the second pond. The applicant claims a single phase pump for each pond. The applicant land applies both the solids and the liquids to the fields during the dry seasons. The applicant claims a Cat diesel pump and a used irrigator sprinklers to apply the liquid manure to 180 acres.

The original underground storage tank had limited capacity. The applicant agitated, pumped, and land applied the contents of the tank about every three days during the months when the cows were confined. The liquid manure would mix with stormwater and flow into the tributaries of the Luckiamute River.

Taxpayer Allowed Credit

ORS 315.304(4) Criteria

The taxpayer who is allowed the credit is the:

a. **Owner**, including a contract purchaser, of the trade or **business** that uses the Oregon property requiring a pollution control facility to prevent or minimize pollution; or

b. Person who, as a lessee or pursuant to an agreement, conducts the trade or business that operates or utilizes such property; or

c. Person who, as an owner, including a contract purchaser, or lessee, owns or leases a pollution control facility that is used for recycling, material recovery or energy recovery as defined in ORS 459.005.

Applied to this Application

Applicant is the **owner of the business** that uses the claimed facility.

Eligibility

Timely Filing
2001 Edition
ORS 468.173(3)(c)

Criteria

The applicant must submit the application within one year after the date that they completed construction of the facility. The final application, however, is not valid if the applicant submits the application before they complete construction or before they place the facility into operation.

Applied to this Application

The applicant **filed** the application **within** the one-year **filing requirement**. They completed construction on 6/21/2002 and submitted the application on 2/5/2003. They did not file the application before they completed construction or before they placed the facility into operation on 11/1/2001. The applicant placed the lagoons into operation during the wet season but did not complete the system until the following dry season.

Purpose: Required
ORS 468.155 (1)(a)(A)
OAR 340-016-0060(2)(a)

Criteria

The principal purpose of the claimed facility must be to comply with a requirement imposed by DEQ or EPA to prevent, reduce, or control water pollution. That principal purpose must be the most important or primary purpose of the facility. The facility must have only one primary purpose.

"Water Pollution" means such **alteration of the physical**, chemical **or biological properties** of any waters of the state, including change in temperature, taste, color, turbidity, silt or odor of the waters, or such discharge of any liquid, gaseous, solid, radioactive or other substance into any waters of the state, which will or tends to, either by itself or in connection with any other substance, create a public nuisance or which will or tends to render such waters harmful, detrimental or injurious to public health, safety or welfare, or

to domestic, commercial, industrial, agricultural, recreational or other legitimate beneficial uses or to livestock, wildlife, fish or other aquatic life or the habitat thereof. ORS 468B.005

Applied to this Application
The applicant claims the facility has a **principal purpose**. The manure storage tank complies with a notice of noncompliance and plan of correction imposed by Oregon Department of Agriculture (ODA) for confined animal feeding operations. The primary or most important purpose of the claimed facility is to prevent water pollution.

The applicant claims piping to flush the manure out of the barn's concreted areas using some of the liquid from the second stage pond. The primary and most important purpose of the flush system is to clean the confined areas. The Department subtracted the cost of the piping from the claimed cost under the *Facility Cost* section below.

Method
ORS 468.155 (1)(b)(A)

Criteria
The prevention, control, or reduction must be accomplished by disposal or elimination of industrial wastewater and the use of a treatment works for industrial waste as defined in ORS 468B.005.

"Industrial waste" means any liquid, gaseous, radioactive or **solid waste** substance or a combination thereof resulting from any process of industry, manufacturing, **trade or business**, or from the development or recovery of any natural resources.

"Treatment works" means any plant or other works used for the **purpose of treating,** stabilizing or **holding wastes**.

Applied to this Application
Manure **meets the definition of** industrial waste. The lagoon system and the land application equipment **meet the definition of** a treatment works.

Exclusions
ORS 468.155(3)
OAR 340-016-0070(3)

Criteria
The regulations provide a list of over 40 items excluded from the definition of a Pollution Control Facility. Items that do not meet the definition are ineligible for certification.

Applied to this Application
There are **no further exclusions**.

Replacement ORS 468.155(3)(e)

Criteria

The replacement or reconstruction of all or part of a facility that the State of Oregon previously certified as a pollution control facility under ORS 468.170 is not eligible for the tax credit with two exceptions:

1) The applicant replaced the facility because DEQ or EPA imposed a different requirement than the requirement to construct the original facility; or

2) The applicant replaced the facility before the end of its useful life.

Applied to this Application

The State of Oregon has not issued any Pollution Control Facilities Tax Credit Certificates to the applicant at this location; therefore, the facility is **not a replacement** facility.

Maximum Credit ORS 468.173(1)

Criteria

The maximum tax credit is 50% if the applicant commenced construction or installation prior to 1/1/2001 and completed construction or installation prior to 1/1/2004.

Applied to this Application

The **maximum tax credit is 50%** because the commenced construction on 10/7/1999 and completed construction on 6/21/2002.

Facility Cost

The applicant also included electrical costs for a well and barn; and the installation of a Freon system that are unrelated to pollution control. The applicant also included the costs for a Caprari pump the applicant returned.

Copies of invoices substantiated the claimed facility cost.

		Claimed	$166,629
Purpose	Well circuit conduit and barn wiring		-$852
Facility Cost	Flush system piping (includes:250' of 12")		-$18,273
Facility Cost	Return of Caprari pump, Freon system installation		-$2,664
		Certified	$144,840

Facility Cost Allocable to Pollution Control

The Applicant and the Department considered the following factors to determine that **100%** of the facility cost is allocable to pollution control.

Factor	Applied to this Facility
ORS 468.190(1)(a)	Salable/Usable Commodity: The facility produces no salable or usable commodities.

ORS468.190(1)(b)	Return on Investment (ROI): The functional life of the facility used in considering the ROI is **20** years. The claimed facility does not have a return on the investment; therefore, 100% of the facility cost is allocable to pollution control.
ORS 468.190(1)(c)	Alternative Methods: The applicant did not investigate an alternative technology because the claimed facility is the best available technology.
ORS 468.190(1)(d)	Savings/Increase Costs: The application record does not show there are any savings or increases in costs.
ORS 468.190(1)(e)	Other Relevant Factors: The application record does not indicate there are any other relevant factors.

Compliance

The ODA inspector assigned to the source is Jamie Bansen in Polk County. The inspector affirmed the applicant's statement that the facility and site are in compliance with Department rules and statutes, and with EQC orders. DEQ has not issued any permits to the applicant at this site.

Reviewers: Maggie Vandehey, DEQ
Jeannette Freeman, DEQ

State of Oregon
Department of Environmental Quality

Tax Credit Review Report

Pollution Control Facility: Water
Final Certification
ORS 468.150 -- 468.190
OAR 340-016-0005 -- 340-016-0080

Director's Recommendation

Approve Application No. **6484 @ Reduced Cost**

Applicant: **Terrain Tamers Chip Hauling Inc.**

Claimed:		
Facility Cost		$16,882
Percentage Allocable	X	100%
Maximum Percentage	X	35%
Tax Credit		**$5,909**

Certificate Period: **10 years**

Applicant Identification

PO Box 366
Dillard, OR 97432

Organized as: **S Corp**
Taxpayer ID: **93-0900137**

Facility Identification

533 Dyke Road
Dillard, OR 97432

The certificate will identified the facility as a:

Water recycling filtration system, Model 2002R, Serial # 4590006 17995

Technical Information

Terrain Tamers Chip Hauling Inc. is a trucking company. The applicant claims a recirculating water processer manufactured by Hydro Care Systems. They installed the system in their new truck washing facility to filter the wastewater for reuse. The system collects the wastewater in a grilled pit. A gravity drain feeds the wastewater to an oil separation filter. The filter removes oil, grease, copper, zinc, lead, and other metals. The water then flows to a holding tank until the truck washer demands cleaned water. This is a closed loop system that does not discharge waste water. The applicant did not claim any components associated with holding the cleaned water or washing the trucks.

Taxpayer Allowed Credit

ORS 315.304(4) Criteria

The taxpayer who is allowed the credit must be:

(a) The **owner**, including a contract purchaser, of the trade or **business** that utilizes Oregon property requiring a pollution control facility to prevent or minimize pollution:

(b) A person who, as a lessee or pursuant to an agreement, conducts the trade or business that operates or utilizes such property;

Applied to this Application

Applicant is the **owner** of the business that requires the facility.

Eligibility

Timely Filing
2001 Edition
RS 468.165(6)

Criteria

The applicant must file the application within one year after the date that they complete construction of the facility. The final application, however, is not valid if the applicant submits the application before they complete construction or before they place the facility into operation.

Applied to this Application

The applicant **filed** the application **within** the one-year **filing requirement** provided by the 2001 edition. The applicant completed construction on 4/30/2002 and filed the application on 3/27/2003. The company did not file the application before construction completion or before it placed the facility into operation on 4/30/2002.

Purpose: Voluntary
ORS 468.155 (1)(a)(B)
OAR 340-016-0060(2)(a)

Criteria

The sole purpose, meaning the 'exclusive' purpose, of the claimed facility must be to prevent, control, or reduce a substantial quantity of water pollution.

"Pollution" or "water pollution" means such alteration of the physical, chemical or biological properties of any waters of the state, including change in temperature, taste, color, turbidity, silt or odor of the waters, or such discharge of any liquid, gaseous, solid, radioactive or other substance into any waters of the state, which will or tends to, either by itself or in connection with any other substance, create a public nuisance or which will or tends to render such waters harmful, detrimental or injurious to public health, safety or welfare, or to domestic, commercial, industrial, agricultural, recreational or other legitimate beneficial uses or to livestock, wildlife, fish or other aquatic life or the habitat thereof.

Applied to this Application

The claimed facility prevents the discharge of thousands of gallons of wastewater containing oil, grease, copper, zinc, lead, and other metals into the South Umpqua River.

Method
ORS 468.155 (1)(b)(A)

Criteria
The prevention, control, or reduction must be accomplished by disposal or elimination of industrial wastewater and the use of a treatment works for industrial waste as defined in ORS 468B.005.

"Industrial waste" means any liquid, gaseous, radioactive or solid waste substance or a combination thereof resulting from any process of industry, manufacturing, trade or business, or from the development or recovery of any natural resources.

"Treatment works" means any plant or other works used for the purpose of treating, stabilizing or holding wastes.

Applied to this Application
Wastewater containing oil, grease, copper, zinc, lead and other metals **meets the definition of** industrial wastewater as defined by ORS 468B.005. The water recycling filtration system **meets the definition of** treatment works in ORS 468B.005.

Exclusions
ORS 468.155(3)
OAR 340-016-0070(3)

Criteria
The regulations provide a list of over 40 items excluded from the definition of a Pollution Control Facility. The list includes maintenance, operation, and repair of a facility, including spare parts. Items that do not meet the definition are ineligible for certification.

Applied to this Application
The applicant included the costs for the **maintenance and repair** of the filtration system. The regulations specifically exclude these costs from the definition of a pollution control facility. The Department subtracted the associated costs from the claimed facility cost under the *Facility Cost* section below.

Replacement
ORS 468.155(3)(e)

Criteria
The replacement or reconstruction of all or part of a facility that has previously been certified as a pollution control facility under ORS 468.170 is not eligible for the tax credit with two exceptions: 1) the facility was replaced due to a requirement imposed by DEQ or EPA that is different than the requirement to construct the original facility; or 2) the facility was replaced before the end of its useful life.

Applied to this Application
The State of Oregon has not issued any Pollution Control Facilities Tax Credit Certificates to the applicant at this location; therefore, the facility is **not a replacement facility.**

Maximum Credit Criteria
ORS 468.173(3)(f) The maximum tax credit is 35% if the applicant submitted the application between January 1, 2002 and December 31, 2008, inclusively, and the certified cost does not exceed $200,000.

Applied to this Application
The **maximum tax credit is 35%** because the applicant submitted the application on 3/27/2003 and the facility cost is **less than $200,000.**

Facility Cost

Copies of invoices substantiate the claimed facility cost.

Referenced Section	Description of Ineligible Portion		Cost
		Claimed	$18,574
Exclusions	Maintenance and Service		-$1,692
		Certified	**$16,882**

Facility Cost Allocable to Pollution Control

ORS 468.190(3) Criteria
If the cost of the facility does not exceed $50,000, the portion of the actual costs properly allocable shall be in the proportion that the ratio of the time the facility is used for prevention, control or reduction of air, water or noise pollution or solid or hazardous waste or to recycling or appropriately disposing of used oil bears to the entire time the facility is used for any purpose.

Applied to this Application
The applicant claims that they use the facility 100% of the time for pollution control.

Compliance

The applicant states that the facility and site are in compliance with Department rules and statutes and with EQC orders. DEQ has not issued any permits to the applicant at this site.

Reviewer: Maggie Vandehey, DEQ

State of Oregon
Department of
Environmental
Quality

Tax Credit Review Report

Pollution Control Facility: Water
Final Certification
ORS 468.150 -- 468.190
OAR 340-016-0005 -- 340-016-0080

Director's Recommendation

Approve Application No. **6501**

Applicant: **U Pull It Salem Auto Wrecking, Inc.**

Certification of:		
Facility Cost		$7,875
Percentage Allocable	X	100%
Maximum Percentage	X	50%
Tax Credit		**$3,938**

Certificate Period: **10 years**

Applicant Identification

3871 Boone Road S
Salem, OR 97301

Organized as: **S Corp**
Taxpayer ID: **91-1785335**

Facility Identification

3871 Boone Road S
Salem, OR 97301

The certificate will identify the facility as:

One - Concrete secondary containment pad

Technical Information

U Pull It Salem Auto Wrecking, Inc., an auto wrecking and recycling company, claims secondary containment for residual fluids that may leak from the hydraulic automobile crushing machine and the crushed automobiles. It is a 35' by 50' rebar-reinforced concrete pad surrounded by a six-inch berm. The applicant drains all automotive fluids prior to the crushing operation. The applicant uses disposable blankets to absorb and contain any residual oil, gas, grease, anti-freeze and other fluids crushed from the automobiles. The applicant disposes of the fluids according to EPA guidelines.

Allowed Credit

ORS 315.304(4)

Criteria

The taxpayer who is allowed the credit is the:

(a) **Owner**, including a contract purchaser, of the trade or **business that uses** the Oregon property requiring a pollution control facility to prevent or minimize pollution; or

(b) Person who, as a lessee or pursuant to an agreement, conducts the trade or business that operates or utilizes such property; or

(c) Person who, as an owner, including a contract purchaser, or lessee, owns or leases a pollution control facility that is used for recycling,

Applied to this Application

The applicant is the owner of the business that uses the claimed facility.

Eligibility

Timely Filing
1999 Edition
ORS 468.173(1)
OAR 340-016-0007

Criteria

The applicant must submit the application within two years after the date that they complete construction of the facility. The final application, however, is not valid if the applicant submits the application before they complete construction or before they place the facility into operation.

Applied to this Application

The applicant **filed** the application **within** the two-year **filing requirement** because they completed construction on 5/9/2001 and submitted the application on 4/25/2003. They did not file the application before they completed construction or before they placed the facility into operation on 6/1/2001.

Purpose: Voluntary
ORS 468.155 (1)(a)(B)
OAR 340-016-0060(2)(b)

Criteria

The sole purpose, meaning the 'exclusive' purpose, of the claimed facility must be to prevent, control, or reduce a substantial quantity of water pollution.

> "Pollution" or "water pollution" means such alteration of the physical, chemical or biological properties of any waters of the state, including change in temperature, taste, color, turbidity, silt or odor of the waters, or such discharge of any liquid, gaseous, solid, radioactive or other substance into any waters of the state, which will or tends to, either by itself or in connection with any other substance, create a public nuisance or which will or tends to render such waters harmful, detrimental or injurious to public health, safety or welfare, or to domestic, commercial, industrial, agricultural, recreational or other legitimate beneficial uses or to livestock, wildlife, fish or other aquatic life or the habitat thereof.

Applied to this Application

The concrete secondary containment pad diverts approximately 20 gallons of industrial waste from contaminating the ground and surface waters every year. The amount of water pollution reduction is substantial when compared to the absence of any previous control.

Method
ORS 468.155 (1)(b)(A)

Criteria
The prevention, control, or reduction must be accomplished by disposal or elimination of industrial wastewater and the use of a treatment works for industrial waste as defined in ORS 468B.005.

"Industrial waste" means any liquid, gaseous, radioactive or solid waste substance or a combination thereof resulting from any process of industry, manufacturing, trade or business, or from the development or recovery of any natural resources.

"Treatment works" means any plant or other works used for the purpose of treating, stabilizing or holding wastes.

Applied to this Application
Oil, gas, grease, anti-freeze and other fluids **meet the definition** of industrial waste. Secondary containment meets the definition of a treatment works by holding industrial waste.

Exclusions
ORS 468.155(3)
OAR 340-016-0070(3)

Criteria
The regulations provide a list of over 40 items excluded from the definition of a Pollution Control Facility. Items that do not meet the definition are ineligible for certification.

Applied to this Application
There are **no exclusions**.

Replacement
ORS 468.155(3)(e)

Criteria
The replacement or reconstruction of all or part of a facility that the State of Oregon previously certified as a pollution control facility under ORS 468.170 is not eligible for the tax credit with two exceptions:

1) The applicant replaced the facility because DEQ or EPA imposed a different requirement than the requirement to construct the original facility; or

2) The applicant replaced the facility before the end of its useful life.

Applied to this Application
The State of Oregon has not issued any Pollution Control Facilities Tax Credit Certificates to the applicant at this location; therefore, the facility is **not** a replacement facility.

Maximum Credit
ORS 468.173(1)
OAR 340-016-0007

Criteria
The applicable percentage of the certified cost of a facility shall be 50% if the facility is certified under the 1999 Edition of ORS 468.155 to 468.190.

Applied to this Application
The **maximum tax credit is 50%** because the applicant completed construction

of the facility on 5/9/2001.

Facility Cost

Copies of invoices substantiated the claimed facility cost.

Referenced Section	Description of Ineligible Portion		Cost
		Claimed	$7,875
		Certified	**$7,875**

Facility Cost Allocable to Pollution Control

ORS 468.190(3) Criteria

If the cost of the facility (or facilities certified under one certificate) does not exceed $50,000, the portion of the actual costs properly allocable shall be in the proportion that the ratio of the time the facility is used for prevention, control or reduction of air, water or noise pollution or solid or hazardous waste or to recycling or appropriately disposing of used oil bears to the entire time the facility is used for any purpose.

Applied to this Application

The certified facility cost is $7,875 and the applicant uses the facility 100% of the time for pollution control.

Compliance

The DEQ staff assigned to the source is Raghu Namburi in the Western Region. He affirmed the applicant's statement that the facility and site are in compliance with Department rules and statutes, and with EQC orders. DEQ issued the following permit to the applicant at this site: NPDES General Permit – Storm Water Permit No. 107590 issued August 11, 1997.

Reviewers: Maggie Vandehey, DEQ
Jeannette Freeman, DEQ

Attachment C
Background and References for Denials

The Department recommends that the Environmental Quality Commission deny the **four** applications presented in this attachment. Two applications represent facilities that do not meet the definition of a pollution control facility. The other two applications represent facilities where zero percent of the facility cost is allocable to pollution control.

Summary of Facilities Recommended for Denial

App #	Applicant	Claimed Cost	% Allocable	Maximum Tax Credit	Media	EQC Action
6260	Merix Corporation	241,280	100%	50%	Water	
6266	Ronald and Beverly Rohde	102,479	0%	50%	Air	
6326	Steven E. Davidson	79,300	0%	50%	FB	
6400	US Gypsum	$3,044,654	100%	50%	Water	

Apps		
4	**Sum**	**3,467,713**
	Average	866,928
	Minimum	79,300
	Maximum	3,044,654
	Median	171,880

Statutory Provision for Denying Certification - General

ORS 468.170 Action on application; rejection; appeal; issuance of certificate; certification.

...

(2) If the commission **rejects** an application for certification, or certifies a lesser actual cost of the facility or a lesser portion of the actual cost properly allocable to the prevention, control or reduction of air, water or noise pollution or solid or hazardous waste or to recycling or appropriately disposing of used oil than was claimed in the application for certification, the commission shall cause written notice of its action, and a concise statement of the findings and reasons therefore, to be sent by registered or certified mail to the applicant before the 120th day after the filing of the application.

ORS 468.190 Allocation of costs to pollution control.

...

(2) The portion of actual costs properly allocable shall be from zero to 100 percent in increments of one percent. If zero percent, the commission shall issue an order **denying** certification.

State of Oregon
Department of Environmental Quality

Tax Credit Review Report

Pollution Control Facility: Water
Final Certification
ORS 468.150 -- 468.190
OAR 340-016-0005 -- 340-016-0080

Director's Recommendation

Deny Application No. **6260 – Ineligible Facility**

Applicant: **Merix Corporation**

Claimed:

Facility Cost		$ 241,280
Percentage Allocable	X	100%
Maximum Percentage	X	50%

Applicant Identification

1521 Poplar Lane
Forest Grove, OR 97116

Organized as: **C Corp**
Taxpayer ID: **93-1135197**

Facility Identification

1521 Poplar Lane
Forest Grove, OR 97116

The applicant identified the facility as:

Micro Tek wastewater recycling system

Technical Information

Merix Corporation manufactures advanced multilayer rigid circuit boards. The applicant claimed a wastewater recycling system (WRS) that consists of a rinse water feed tank; two activated carbon absorption columns for organic matter removal; and two cation and anion exchange columns for metal ion removal.

The water recycling system utilizes activated carbon columns and ion exchange columns to remove non-carbon organics, metallic ions, and negatively-charged ions. The facility treats rinse water generated from the applicant's manufacturing processes to be reused. Prior to the installation of the claimed facility, 5.5 million gallons of rinse water was discharged to the Clean Water Services (CWS) wastewater treatment system after being pretreated each year.

Taxpayer Allowed Credit

ORS 315.304(4) Criteria

The taxpayer allowed the credit is:

a. **Owner**, including a contract purchaser, **of the** trade **or business** that uses the Oregon property requiring a pollution control facility to prevent or minimize pollution; or

b. Person who, as a lessee or pursuant to an agreement, conducts the trade or business that operates or utilizes such property.

Applied to this Application

Applicant is the **owner** of the business that uses the claimed facility.

Eligibility

Timely Filing
1999 Edition
ORS 468.165(6)

Criteria

The applicant must submit the application within two years after the date that they completed construction of the facility. The final application, however, is not valid if the applicant submits the application before they complete construction or before they place the facility into operation.

Applied to this Application

The applicant **submitted** the application **within** the **two-year requirement** by completing construction on 8/25/2001 and submitted the application on 8/23/2002. The applicant submitted the application after they completed construction and placed the facility into operation on 7/10/2002.

Purpose: Voluntary
ORS 468.155 (1)(a)(B)
OAR 340-016-0060(2)(a)

Criteria

The sole purpose, meaning the 'exclusive' purpose, of the claimed facility must be to prevent, control, or reduce a substantial quantity of water pollution.

"Pollution" or "water pollution" means such alteration of the physical, chemical or biological properties **of any waters of the state**, including change in temperature, taste, color, turbidity, silt or odor of the waters, or such discharge of any liquid, gaseous, solid, radioactive or other substance into any waters of the state, which will or tends to, either by itself or in connection with any other substance, create a public nuisance or which will or tends to render such waters harmful, detrimental or injurious to public health, safety or welfare, or to domestic, commercial, industrial, agricultural, recreational or other legitimate beneficial uses or to livestock, wildlife, fish or other aquatic life or the habitat thereof.

Applied to this Application

The applicant claims the facility has the **sole purpose** of reducing a substantial quantity of water pollution.

The facility **does not reduce a substantial quantity of water pollution**.
The claimed facility utilizes ion exchange resin as the filter media that removes metallic ions. When this filter media is full and cannot hold any more metal

ions, the system goes through a backwash operation where hydrochloric acid strips the metal ions from the filter media. The backwash liquid contains a very high concentration of metal ions; the WRS does not treat the backwash liquid. The applicant provided data showing the Average Effluent Heavy Metals Concentration before and after installing the WRS. The data shows a reduction of 0.06 mg/l Average Effluent Heavy Metals Concentration with the claimed facility in place.

The facility does **not** have an **exclusive pollution control purpose**. The applicant's production process requires the use of clean water for rinsing. The applicant states in the application and in written communications with the Department that Merix Corporation installed the WRS to recycle 5.5 million gallons of rinse water. The WRS reduces CWS charges to the applicant for purchasing city water and discharging to the sewer. (See the *Percentage Allocable to Pollution Control* section below.)

The Department recommends that the EQC deny certification of the water recycling system because the claimed facility **does not** have an **exclusive** purpose to reduce a **substantial quantity** of water pollution.

Method
ORS 468.155 (1)(b)(A)

Criteria

The prevention, control, or reduction must be accomplished by disposal or elimination of industrial wastewater and the use of a treatment works for industrial waste as defined in ORS 468B.005.

> "Industrial waste" means any liquid, gaseous, radioactive or solid waste substance or a combination thereof resulting from any process of industry, manufacturing, trade or business, or from the development or recovery of any natural resources.
>
> "Treatment works" means any plant or other works used for the purpose of treating, stabilizing or holding wastes.

Applied to this Application

The Department was unable to determine that the WRS disposed of metal ions or eliminated the amount of metal ions ultimately discharged to CWS. (See the *Percentage Allocable to Pollution Control* section below.) The applicant's discharge meets the definition of an industrial waste and the claimed facility probably meets the definition of a treatment works.

Exclusions
ORS 468.155(3)
OAR 340-016-0070(3)

Criteria

The regulations provide a list of over 40 items excluded from the definition of a Pollution Control Facility. Items that do not meet the definition are ineligible for certification.

Applied to this Application

The application record did not indicate that the applicant included any ineligible costs.

Replacement Criteria

ORS 468.155(3)(e) The replacement or reconstruction of all or part of a facility that has previously been certified as a pollution control facility under ORS 468.170 is not eligible for the tax credit with two exceptions: 1) the facility was replaced due to a requirement imposed by DEQ or EPA that is different than the requirement to construct the original facility; or 2) the facility was replaced before the end of its useful life.

Applied to this Application

The facility is **not a replacement** of a previously certified facility.

Maximum Credit Criteria

ORS 468.173(1) The applicable percentage of the certified cost of a facility shall be 50% if the
OAR 340-016-0007 facility is certified under the 1999 Edition of ORS 468.155 to 468.190.

Applied to this Application

The maximum tax credit would have been 50% because the applicant completed construction of the facility on 4/1/2001, and submitted the application on 8/23/2002.

Facility Cost

Copies of invoices substantiated the claimed facility cost.

Referenced Section	Description of Ineligible Portion		Cost
		Claimed	$241,280

Percentage Allocable

% Certification Criteria

ORS 468.170(1) The certified "percentage allocable" is limited to the portion of the actual facility cost that is properly allocable to the prevention, control, or reduction of solid waste, hazardous waste, or to recycling or appropriately disposing of used oil.

ORS 468.190(2) The portion of actual costs properly allocable shall be from zero to 100 percent in increments of one percent. If zero percent, the commission shall issue an order denying certification.

Applied to this Application

The applicant claims the cost of the water recycling system is 100% allocable to water pollution control. The Department was unable to determine the percentage of the facility cost allocable to pollution control because the applicant did not submit a corrected cost worksheet.

Percentage Criteria
ORS 468.190(1) The following factors establish the portion of costs properly allocable to material recovery or recycling for facilities that cost more than $50,000.

a. The extent to which the applicant uses the facility to recover and convert waste products into a salable or usable commodity;

b. The estimated annual percent return on the investment in the facility;

c. Any alternative methods, equipment, and costs for achieving the same pollution control objective;

d. Any related savings or increase in costs that occur or may occur as a result of the installation of the facility; and

e. Any other relevant factors.

Applied to this Application
The applicant installed the WRS to produce cleaned water used in conjunction with a new manufacturing process. The application stated they realize annual savings of $20,469 by recycling rinse water rather than purchasing clean water and discharging to the City's sewer system.

The WRS reduced wastewater discharge by 450,000 gallons per month. If Merix were to discharge this additional volume to Clean Water Services (CWS), the company would need to purchase additional discharge capacity. CWS sells capacity based on flow rates in units of 640 gallons per month. A unit sells for $2,400. If Merix were to discharge all of the recycled water (5.4 million gallons per year or 450,000 gallons per month) to CWS, the purchase cost for the additional capacity would cost $1,687,500. (450,000 gallons/640 gallons per unit x $2,400 per unit = $1,687,500.) This cost savings exceeded the cost of the facility. Had the applicant included that savings in the return on investment calculation the percentage allocable to pollution control would have been **zero percent**.

Compliance

The applicant claims the facility and site comply with Department rules and statutes. DEQ has issued the following permits to the applicant at this site.

NPDES Stormwater No. 1200-Z, issued October 28, 1997
Air Discharge Permit No. 34-2678 issued July 11, 2002

Reviewers: PBS Engineering and Environmental
Maggie Vandehey, DEQ

State of Oregon
Department of
Environmental
Quality

Director's Recommendation

Deny Application No. **6266 - Zero Percent Allocable**

Applicant: **Ronald and Beverly Rohde**

Claimed Cost		$102,479
Percentage Allocable	X	0%
Maximum Percentage	X	50%

Tax Credit Review Report

Pollution Control Facility: Field Burning
Final Certification
ORS 468.150 -- 468.190
OAR 340-016-0005 -- 340-016-0080

Applicant Identification

8340 Oak Grove Road
Rickreall, OR 97371

Organized as: **Sole Proprietor**
Taxpayer ID: **541-44-0850**

Facility Identification

8340 Oak Grove Road
Rickreall, OR 97371

The applicant identify the facility as:

144' X 157' X 46' Straw Storage Building

Technical Information

Ronald and Beverly Rohde own 250 acres leased to Alan McKee farms for perennial grass-seed cultivation in Polk County. The applicant constructed a 144' x 151' X 46' building used to store straw products during inclement weather. The applicant then markets and sells the straw. Prior to straw storage, grass seed acreage was either open burned, flail chopped or stack burned.

Taxpayer Allowed Credit

ORS 315.304(4) Criteria

The taxpayer who is allowed the credit must be:

a. The **owner**, including a contract purchaser, of the trade or business that utilizes Oregon property requiring a pollution control facility to prevent or minimize pollution:

b. A person who, as a lessee or pursuant to an agreement, conducts the trade or business that operates or utilizes such property;

Applied to this Application

Applicant is the **owner** of the straw storage building.

Eligibility

Timely Filing
ORS 468.165(6)

Criteria
The applicant must submit the application within two years after the date that they completed construction of the facility. The final application, however, is not valid if the applicant submits the application before they complete construction or before they place the facility into operation.

Applied to this Application
The applicant **filed** the application **within** the two-year **filing requirement** because they completed construction on 6/7/2001 and submitted the application on 8/29/2002. The applicant submitted the application after they completed construction and after they placed the facility into operation on 7/1/2001.

Purpose: Required
ORS 468.155 (1)(a)(A)
OAR 340-266-0060 (4)(A)(B)(C)

Criteria
The principal purpose of the claimed facility must be to reduce air pollution by reducing the maximum acreage to be open-burned in compliance with OAR 340-266-0060 (Acreage limitations, allocations).

The facility shall reduce or eliminate:

a. Open field burning and may include equipment, facilities, and land for gathering, densifying, handling, **storing,** transporting and incorporating grass straw or straw based products;

b. Air quality impacts from open field burning and may include propane burners or mobile field sanitizers; or

c. Grass seed acreage that requires open field burning.

Applied to this Application
The applicant states that the primary or most important purpose of the claimed facility is to reduce air pollution because the straw storage shed complies with OAR 340-266-0060 by reducing the maximum acreage to be open-burned in the Willamette Valley. According to the Department of Agriculture, the applicant last burned 33 acres in 1995.

Method
ORS 468.155
OAR 340-266-0060(C)

Criteria
The facility reduces or eliminates open field burning and its effects on air quality and may include:

a. Production of alternative crops that do not require open field burning;

b. Production of rotation crops that support grass seed production without open field burning; or

c. Drainage tile installations and new crop processing facilities.

Applied to this Application
The effects of field burning **meet the definition of** an air contaminant as defined by ORS 468A.005:

Dust, fume, gas, mist, odor, smoke, vapor, pollen, soot, carbon, acid or particulate matter or any combination thereof.

The straw storage shed **meets the definition** of an alternative to field burning by storing the straw rather than burning it.

Exclusions
ORS 468.155(3)
OAR 340-016-0070(3)

Criteria
The regulations provide a list of over 40 items excluded from the definition of a Pollution Control Facility. Items that do not meet the definition are ineligible for certification.

Applied to this Application
The application record did not indicate that the applicant included any ineligible costs.

Replacement
ORS 468.155(3)(e)

Criteria
The replacement or reconstruction of all or part of a facility that has previously been certified as a pollution control facility under ORS 468.170 is not eligible for the tax credit with two exceptions: 1) the facility was replaced due to a requirement imposed by DEQ or EPA that is different than the requirement to construct the original facility; or 2) the facility was replaced before the end of its useful life.

Applied to this Application
The State of Oregon has not issued any Pollution Control Facilities Tax Credit Certificates to the applicant at this location; therefore, the facility is **not a replacement facility**.

Maximum Credit
ORS 468.173(1)
OAR 340-016-0007

Criteria
The applicable percentage of the certified cost of a facility shall be 50% if the facility is certified under the 1999 Edition of ORS 468.155 to 468.190.

Applied to this Application
The maximum tax credit is 50% because the applicant completed construction of the facility on 5/14/2001, and submitted the application on 8/29/2002.

Facility Cost

Copies of invoices and a project summary report substantiated the claimed facility cost:

Claimed **$102,479**

Facility Cost Allocable to Pollution Control

% Certification Criteria

ORS 468.170(1) The certified "percentage allocable" is limited to the portion of the actual facility cost that is properly allocable to the prevention, control, or reduction of solid waste, hazardous waste, or to recycling or appropriately disposing of used oil.

ORS 468.190(2) The portion of actual costs properly allocable shall be from zero to 100 percent in increments of one percent. If zero percent, the commission shall issue an order denying certification.

Applied to this Application

The percentage of the facility cost that is allocable to pollution control is **zero percent** as discussed below.

Percentage Criteria

ORS 468.190(1) The following factors establish the portion of costs properly allocable to material recovery or recycling for facilities that cost more than $50,000.

a. The extent to which the applicant uses the facility to recover and convert waste products into a salable or usable commodity;

b. The estimated annual percent return on the investment in the facility;

c. Any alternative methods, equipment, and costs for achieving the same pollution control objective;

d. Any related savings or increase in costs that occur or may occur as a result of the installation of the facility; and

e. Any **other relevant factors**.

Applied to this Application

The applicant stores straw in the claimed facility until they can market and sell it. The applicant selected the storage method as an alternative to open field burning because the rate of return is higher than other investment opportunities. The applicant and the Department calculated the percentage of the facility cost allocable to pollution control as shown on the attached worksheet. The Facility ROI from Table 1 is 16.5% using 2001 as the construction completion year, **36** years as the life of the storage building, and $17,000 as the facility's average annual cash flow. The National ROI from Table 2 for 2001 is 8.5%. The **Facility ROI exceeds the National ROI**; therefore, the percentage of the facility cost allocable to pollution control is zero percent. There are no other relevant factors.

Compliance

The applicant states that the facility and site are in compliance with Department rules and statutes, and with EQC orders. DEQ has not issued any permits to the applicant at this site.

Reviewers: Maggie Vandehey, DEQ

Cost Worksheet - Final Application

Caculated according to the standard method - OAR 340-016-0075(3)

Year construction completed (yyyy)	2001
Useful Life of Facility	36

Facility Cost	$102,479
Salvage Value	$0
Government Grants	$0
Other Tax Credits	$0
Ineligible Costs	$0
Eligible Facility Cost	$ 102,479

Cash Flow Worksheet	Year	Gross Annual Income	Annual Operating Expenses	Annual Cash Flow
1st full year of operation.	2002	$ 18,000	$ 1,000	$ 17,000
2nd full year of operation.	2003	$ 18,000	$ 1,000	$ 17,000
3rd full year of operation.	2004	$ 18,000	$ 1,000	$ 17,000
4th full year of operation.	2005	$ 18,000	$ 1,000	$ 17,000
5th full year of operation.	2006	$ 18,000	$ 1,000	$ 17,000
Totals		$ 90,000	$ 5,000	$ 85,000

Average Annual Cash Flow of the Facility		$ 17,000
Return on Investment Factor	(Eligible Cost/Avg. Annual CF)	6.028
Facility ROI (Table 1)		16.5%
National ROI (Table 2)		8.5%

Percentage of Facility Cost Allocable to Pollution Control	0%

State of Oregon
Department of
Environmental
Quality

Director's Recommendation

Deny Application No. **6326** - *Zero Percent Allocable*

Applicant: **Steven E. Davidson**

Claimed:		
Facility Cost		$79,300
Percentage Allocable	X	100%
Maximum Percentage	X	50%

Tax Credit Review Report

Pollution Control Facility: Field Burning
Final Certification
ORS 468.150 -- 468.190
OAR 340-016-0005 -- 340-016-0080

Applicant Identification

4608 Davidson Rd. NE
St. Paul, OR 97137-9731

Organized as: **Individual**
Taxpayer ID: **541-82-2092**

Facility Identification

4608 Davidson Rd. NE
St. Paul, OR 97137

The applicant identified the facility as:

One New Holland model PT240 harvester, serial # 993907
One Echo model IR028267 4" hard reel irrigation system, serial # 00-25187-38

Technical Information

Steven E. Davidson owns 50 acres and leases 50 acres of land under perennial grass-seed cultivation in Marion County. The applicant purchased a harvester and a reel irrigation system used in the production of corn. Prior to planting corn as a rotating alternative crop, the applicant baled and chopped the grass seed straw.

Taxpayer Allowed Credit

ORS 315.304(4)

Criteria

The taxpayer who is allowed the credit is the:

a. **Owner**, including a contract purchaser, **of the** trade or **business** that uses the Oregon property requiring a pollution control facility to prevent or minimize pollution; or

b. Person who, as a lessee or pursuant to an agreement, conducts the trade or business that operates or utilizes such property; or

c. Person who, as an owner, including a contract purchaser, or lessee, owns or leases a pollution control facility that is used for recycling, material recovery or energy recovery as defined in ORS 459.005.

Applied to this Application

Applicant is the **owner of the business** that uses the claimed facility.

Eligibility

Timely Filing

ORS 468.173(1)
OAR 340-016-0007

Criteria

The applicant must submit the application within two years after the date that they complete construction of the facility. The final application, however, is not valid if the applicant submits the application before they complete construction or before they place the facility into operation.

Applied to this Application

The applicant **filed** the application **within** the two-year **filing requirement.** They purchased the claimed facility on 11/13/2001 and submitted the application on 10/22/2002. The applicant placed the facility into operation on 11/13/2001.

Purpose: Required

ORS 468.155 (1)(a)(A)
OAR 340-266-0060 (4)(A)(B)(C)

Criteria

The principal purpose of the claimed facility must be to reduce air pollution by reducing the maximum acreage to be open-burned in compliance with OAR 340-266-0060 (Acreage limitations, allocations).

The facility shall reduce or eliminate:

- Open field burning and may include equipment, facilities, and land for gathering, densifying, handling, storing, transporting and incorporating grass straw or straw based products;
- Air quality impacts from open field burning and may include propane burners or mobile field sanitizers; or
- **Grass seed acreage that requires open field burning.**

Applied to this Application

The EQC has not previously certified harvesting equipment. The EQC has certified irrigation equipment used to land-apply animal waste as a method for reducing water pollution.

The applicant last burned 6 acres in 1993 according to the Oregon Department of Agriculture. The application shows that the applicant baled and chopped 100 acres of perennial grass-seed straw in 1999, 2000, and 2001. The application also shows that the claimed equipment did not result in the applicant removing any acreage from open field burning.

The Department did not complete its analysis on the primary and most important purpose of the harvester and irrigation equipment because the facility is zero percent allocable as shown under the *Percentage Allocable* section below.

Method
ORS 468.155
OAR 340-266-0060(C)

Criteria

The facility shall reduce or eliminate open field burning and its effects on air quality and may include:

a. **Production of alternative crops** that do not require open field burning;

b. Production of rotation crops that support grass seed production without open field burning; or

c. Drainage tile installations and new crop processing facilities.

Applied to this Application

The effects of field burning **meet the definition of** an air contaminant. The applicant uses the harvester and irrigation equipment in the production of corn. The corn is an alternative rotating crop and does not require open field burning. The last time the applicant open field burned was in 1993. The applicant baled and chopped their grass-seed straw in the interim.

The applicant hauls the chopped corn to a local dairy, for producing silage. The applicant delivered approximately 3,000 tons last year to the dairy for an average fee of $30 per ton. Tonnage price varies, depending on lab results of the nutritional value content.

Exclusions
ORS 468.155(3)
OAR 340-016-0070(3)

Criteria

The regulations provide a list of over 40 items excluded from the definition of a Pollution Control Facility. Items that do not meet the definition are ineligible for certification.

Applied to this Application

There are **no exclusions**.

Replacement
ORS 468.155(3)(e)

Criteria

The replacement or reconstruction of all or part of a facility that has previously been certified as a pollution control facility under ORS 468.170 is not eligible for the tax credit with two exceptions: 1) the facility was replaced due to a requirement imposed by DEQ or EPA that is different than the requirement to construct the original facility; or 2) the facility was replaced before the end of its useful life.

Applied to this Application
The State of Oregon has not issued any Pollution Control Facilities Tax Credit Certificates to the applicant at this location; therefore, the facility is **not a replacement** facility.

Maximum Credit
ORS 468.173(1)
OAR 340-016-0007

Criteria
The applicable percentage of the certified cost of a facility is 50% if the facility is certified under the 1999 Edition of ORS 468.155 to 468.190.

Applied to this Application
The maximum tax credit is 50% because the applicant completed construction of the facility on 2/23/2001, and submitted the application on 10/22/2002.

Facility Cost

Copies of invoices substantiated the claimed facility cost.

Referenced Section	Description of Ineligible Portion		Cost
		Claimed	$74,300
Facility Cost	Erroneous deduction of projected trade-in value of equipment		$5,000
			$79,300

Percentage Allocable

% Certification
ORS 468.170(1)

Criteria
The certified "percentage allocable" is limited to the portion of the actual facility cost that is properly allocable to the prevention, control, or reduction of solid waste, hazardous waste, or to recycling or appropriately disposing of used oil.

ORS 468.190(2)

The portion of actual costs properly allocable shall be from zero to 100 percent in increments of one percent. If zero percent, the commission shall issue an order denying certification.

Applied to this Application
The percentage of the facility cost that is allocable to pollution control is **zero percent** as discussed below.

Percentage
ORS 468.190(1)

Criteria
The following factors establish the portion of costs properly allocable to material recovery or recycling for facilities that cost more than $50,000.

a. The extent to which the applicant uses the facility to recover and convert waste products into a salable or usable commodity;

b. The estimated annual percent return on the investment in the facility;

c. Any alternative methods, equipment, and costs for achieving the same pollution control objective;

d. Any related savings or increase in costs that occur or may occur as a result of the installation of the facility; and

e. Any **other relevant factors**.

Applied to this Application
The applicant uses the harvester and irrigation equipment to produce corn that they sell to dairies as silage. The applicant sells approximately 3000 tons a year for an average price of $30 per ton. The Department calculated the percentage of the facility cost allocable to pollution control as shown on the attached worksheet. The Facility ROI from Table 1 is 102% using 2001 as the construction completion year, **5** years as the life of the storage building, and $83,800 as the facility's average annual cash flow. The National ROI from Table 2 for 2001 is 8.5%. The **Facility ROI exceeds the National ROI**; therefore, the percentage of the facility cost allocable to pollution control is zero percent. There are no other relevant factors.

Compliance

The applicant states that the facility and site are in compliance with Department rules and statutes, and with EQC orders. DEQ has not issued any permits to the applicant at this location.

Reviewers: Maggie Vandehey, DEQ

Cost Worksheet - Final Application

Caculated according to the standard method - OAR 340-016-0075(3)

Year construction completed (yyyy)	2001
Useful Life of Facility	5

Facility Cost	$79,300
Salvage Value	$0
Government Grants	$0
Other Tax Credits	$0
Ineligible Costs	$0
Eligible Facility Cost	$ 79,300

Cash Flow Worksheet	Year	Gross Annual Income	Annual Operating Expenses	Annual Cash Flow
1st full year of operation.	2002	$ 90,000	$ 5,000	$ 85,000
2nd full year of operation.	2003	$ 90,000	$ 5,500	$ 84,500
3rd full year of operation.	2004	$ 90,000	$ 6,000	$ 84,000
4th full year of operation.	2005	$ 90,000	$ 7,000	$ 83,000
5th full year of operation.	2006	$ 90,000	$ 7,500	$ 82,500
Totals		$ 450,000	$ 31,000	$ 419,000

Average Annual Cash Flow of the Facility		$ 83,800
Return on Investment Factor	(Eligible Cost/Avg. Annual CF)	0.946
Facility ROI (Table 1)		102.6%
National ROI (Table 2)		8.5%

Percentage of Facility Cost Allocable to Pollution Control	0%

State of Oregon
Department of
Environmental
Quality

Tax Credit Review Report

Pollution Control Facility: Water
Final Certification
ORS 468.150 -- 468.190
OAR 340-016-0005 -- 340-016-0080

Director's Recommendation

Deny Application No. **6400** - Ineligible Facility

Applicant: **United States Gypsum Company**

Claimed:

Facility Cost		$3,044,654
Percentage Allocable	X	100%
Maximum Percentage	X	50%

Applicant Identification

125 S Franklin Street
Chicago, IL 60606

Organized as: **C Corp**
Taxpayer ID: **930223-9**

Facility Identification

29073 Dike Road
Rainier, OR 97048

The applicant identified the facility as:

A 65,760 sq ft A-frame gypsum rock storage building

Technical Information

United States Gypsum Company manufactures gypsum wallboard at its new facility in Rainier, Oregon. The applicant uses gypsum rock as feedstock and claims a building for storing it. The building covers the gypsum rock stockpile area to prevent gypsum from entering subsurface waters. The building is an A-frame structure that sits on 25-foot walls. It is 548 feet long, 120 feet wide and 82 feet high. It holds 75,000 tons of gypsum rock. The building is constructed of structural steel members with sheet metal siding and an earthen floor.

Taxpayer Allowed Credit

ORS 315.304(4)

Criteria

The taxpayer allowed the credit is the:

a. **Owner**, including a contract purchaser, **of the** trade or **business** that uses the Oregon property requiring a pollution control facility to prevent or minimize pollution; or

b. Person who, as a lessee or pursuant to an agreement, conducts the trade or business that operates or utilizes such property.

Applied to this Application

Applicant is the owner of the business that uses the claimed facility.

Eligibility

Timely Filing
1999 Edition
ORS 468.173(1)
OAR 340-016-0007

Criteria

The applicant completed construction before January 1, 2002; therefore, the applicant filed the application according to the 1999 edition of ORS 468.155 to 468.190. Under the 1999 edition, the applicant must file the application within two years after the date that they complete construction of the facility. The applicant, however, may not submit the final application before they complete construction and place the facility into operation.

Applied to this Application

The applicant **filed** the application **within** the two-year filing requirement. They completed construction on 12/4/2000 and submitted the application on 11/22/2002. The applicant placed the facility into operation on 12/22/2000.

Purpose: Voluntary
ORS 468.155 (1)(a)(B)
OAR 340-016-0060(2)(b)

Criteria

The sole purpose, meaning the 'exclusive' purpose, of the claimed facility must be to prevent, control, or reduce a substantial quantity of water pollution.

"Pollution" or "water pollution" means such alteration of the physical, chemical or biological properties of any waters of the state, including change in temperature, taste, color, turbidity, silt or odor of the waters, or such discharge of any liquid, gaseous, solid, radioactive or other substance into any waters of the state, which will or tends to, either by itself or in connection with any other substance, create a public nuisance or which will or tends to render such waters harmful, detrimental or injurious to public health, safety or welfare, or to domestic, commercial, industrial, agricultural, recreational or other legitimate beneficial uses or to livestock, wildlife, fish or other aquatic life or the habitat thereof.

Applied to this Application

The Department concludes that the claimed facility **does not reduce, prevent, or control a substantial quantity** of water pollution and that it **does not have an exclusive pollution control purpose**. The Department bases its recommendation that the Commission deny certification on the following reasons.

Gypsum is a naturally occurring mineral and not considered a potential pollutant. A study by the University of Georgia titled *Use of Gypsum to Improve Physical Properties and Water Relations in Southeastern Soils* concluded that gypsum added to the soil was very beneficial. The US Geological Survey (USGS) is conducting a study in western Washington comparing the infiltration rates of storm water detention basins lined with gypsum to those without gypsum. The State of Washington Department of Transportation has routinely used gypsum to line their storm water detention basins along highways where the soil is highly permeable. The hypothesis is that the gypsum slows the infiltration of storm water and prevents groundwater contamination by heavy metals and materials washed off the highways. The Gypsum Association published *Gypsum's Environmental Story* that states gypsum is non-toxic to humans and can be helpful to animals and plant life. The article also identifies gypsum as a soil additive for settling turbid water without harm to aquatic life, as a component in the brewing of beer, and as an ingredient in canned vegetables, flour, ice cream, blue cheese and other foods.

The applicant uses the A-frame building to keep the raw material from absorbing moisture. Gypsum rock exposed to rain will have twice the amount of moisture as compared to gypsum rock stored under cover. The applicant must reduce the moisture content from the gypsum prior to using it to manufacture wallboard. They use natural gas to remove the moisture; therefore the building helps the applicant reduce their natural gas consumption. The Department determined that the facility failed to have an exclusive claimed pollution control purpose.

Method Criteria

ORS 468.155 (1)(b)(A) The prevention, control, or reduction must be accomplished by disposal or elimination of industrial wastewater and the use of a treatment works for industrial waste as defined in ORS 468B.005.

> "Industrial waste" means any liquid, gaseous, radioactive or solid waste substance or a combination thereof resulting from any process of industry, manufacturing, trade or business, or from the development or recovery of any natural resources.
>
> "Treatment works" means any plant or other works used for the purpose of treating, stabilizing or holding wastes.
>
> > "Wastes" means sewage, industrial wastes, and all other liquid, gaseous, solid, radioactive or other substances which will or may cause pollution or tend to cause pollution of any waters of the state.

Applied to this Application

Storm water that comes in contact with gypsum **does not meet** the definition of industrial waste because it is not the result of a process of industry or manufacturing. The building for storing the gypsum rock **does not meet** the definition of treatment works because it does not treat, stabilize or hold wastes.

Exclusions
ORS 468.155(3)
OAR 340-016-0070(3)

Criteria

The regulations provide a list of over 40 items excluded from the definition of a Pollution Control Facility. Items that do not meet the definition are ineligible for certification.

Applied to this Application

There were **no exclusions**.

Replacement
ORS 468.155(3)(e)

Criteria

The replacement or reconstruction of all or part of a facility that has previously been certified as a pollution control facility under ORS 468.170 is not eligible for the tax credit with two exceptions: 1) the facility was replaced due to a requirement imposed by DEQ or EPA that is different than the requirement to construct the original facility; or 2) the facility was replaced before the end of its useful life.

Applied to this Application

The State of Oregon has not issued any Pollution Control Facilities Tax Credit Certificates to the applicant at this location; therefore, the facility is **not a replacement** facility.

Maximum Credit
ORS 468.173(1)

Criteria

The applicable percentage of the certified cost of a facility shall be 50% if the applicant began construction or installation of the facility prior to January 1, 2001, and completed prior to January 1, 2004.

Applied to this Application

The maximum tax credit is 50% because the applicant began construction on 8/1/1999, completed construction on 12/4/2000, and submitted the application on 11/22/2002.

Facility Cost

Copies of invoices substantiated the claimed facility cost.

Claimed $3,044,654

Facility Cost Allocable to Pollution Control

The Applicant claimed that **100%** of the facility cost is allocable to pollution control.

Factor	Applied to this Facility
ORS 468.190(1)(a)	Salable/Usable Commodity: The facility produces no salable or usable commodities.
ORS 468.190(1)(b)	Return on Investment (ROI): The functional life of the facility used in considering the ROI is **30** years. The percentage of the cost allocable to pollution control is **100%** when calculated according to rule.
ORS 468.190(1)(c)	Alternative Methods: The applicant did not investigate an alternative technology because the claimed facility is the best available technology.
ORS 468.190(1)(d)	Savings/Increase Costs: Gypsum rock will absorb 4.5% water by weight. The building allows the applicant to save $77,188 in natural gas consumption annually. The applicant considered the cost savings in the ROI calculation.
ORS 468.190(1)(e)	Other Relevant Factors: The application record does not indicate there are any other relevant factors.

Compliance

The DEQ staff assigned to the source is Dr. Elliot Zais from the Northwest Region's Water Quality Division. Dr. Zais affirmed rainwater in contact with gypsum rock does not create an adverse impact to water. DEQ issued the following permits to the site:

Air Contaminant Discharge Permit No. 05-0005, issued on 12/29/99
NPDES Storm Water Permit No. 1200-Z, issued on 8/24/01

Reviewers: PBS Engineering and Environmental
Maggie Vandehey, DEQ

Attachment D
Certificate Transfers

The Department recommends that the Environmental Quality Commission transfer **two** Pollution Control Facilities Tax Credit Certificates. The letters requesting the certificate transfer and a copy of the certificates are included in this attachment.

Certificate transfers allow the taxpayer to use the credit beginning on the date of the sale or transfer. The EQC's approval to transfer these certificates includes:

- revocation of the original certificate; and
- re-certification of the facility to the new owners. The new owners are obligated to operate the facilities according to conditions of the EQC's original certification.

Certificate	From	To
3599	Farrelly & Farrelly LLC	TR & T, LLC.
4498	Simco Distributing, Inc	Fred and Doris Simmons

Statutory Provision for Transferring Certification – General

ORS 340.305 - Personal and Corporate Income or Excise Tax

...

(8) Upon any sale, exchange or other disposition of a facility, notice thereof shall be given to the Environmental Quality Commission who shall revoke the certification covering such facility as of the date of such disposition. Notwithstanding ORS 468.170 (4)(c), the transferee may apply for a new certificate under ORS 468.170, but the tax credit available to such transferee shall be limited to the amount of credit not claimed by the transferor. The sale, exchange or other disposition of shares in an S corporation as defined in section 1361 of the Internal Revenue Code or of a partner's interest in a partnership shall not be deemed a sale, exchange or other disposition of a facility for purposes of this subsection.

...

Attachment E
Certified Wood Chipper Report
8/14/03 - 10/27/03

On October 4, 2002, the Commission adopted OAR 340-016-0009. The rule delegates the Commission's authority to certify wood chippers for tax credit purposes to the Department. The Commission requested that the Department periodically provide a listing of the wood chipper certifications.

The Department issued the certificates according to OAR 340-016-0009. The Department's certification of these **32** wood chippers will reduce taxes paid to the State of Oregon by a maximum of **$69,782**.

OAR 340-016-0009 Certification of wood chippers

For the purpose of subdelegating authority to approve and issue final certification of pollution control facilities under OAR 340-016-0080(2):

1) The Environmental Quality Commission authorizes the Director of the Department of Environmental Quality or the Director's delegate to certify wood chippers as provided in OAR 340-016-0060(4)(h)(C) if:
   a) The Department determines the facility is otherwise eligible under OAR 340-016-0060; and
   b) The claimed facility cost does not exceed $50,000 as set forth in OAR 340-016-0075(1).
2) The Department may elect to defer certification of any facility to the Environmental Quality Commission.
3) If the Department determines the facility cost, the percentage of the facility cost allocable to pollution control, or the applicable percentage under ORS 468.173 is less than the applicant claimed on the application then the Department shall:
   a) Notifying the applicant in writing; and
   b) Include a concise statement of the reasons for the proposed certification of a lesser amount or percentage; and
   c) Include a statement advising the applicant of their rights under section (4).
4) Applicants that receive a notification under section (3) may elect to defer certification to the Environmental Quality Commission by notifying the Department within 30 days of the notification date.
5) The Department shall defer certification to the Environmental Quality Commission according to sections (2) and (4).
6) The Director or the Director's delegate shall certify facilities that otherwise qualify under this rule and have not been deferred according to sections (2) or (4).

Adopted 10-4-02; effective 11-01-02

Certified Wood Chippers
8/14/03 - 10/27/03

Certification Date	App #	Applicant	Claimed	Certified	Difference	% Allocable	Maximum Tax Credit	Tax Expenditure Liability
10/27/03	6067	Zebulon Wardle	$ 14,500	$ 17,000	$ (2,500)	100%	50%	$ 7,250
10/9/03	6206	Rocky Wardle	16,000	16,000	0	100%	50%	8,000
5/10/03	6335	Mark Orndoff	4,000	4,000	0	100%	50%	2,000
9/9/03	6512	Robert R. Dame	24,300	24,300	0	100%	35%	8,505
9/9/03	6537	Scott Daley	1,452	1,525	(73)	100%	50%	726
9/9/03	6542	Louis D. Morgan	1,350	1,350	0	100%	35%	473
10/9/03	6546	Timothy Hunt	11,500	11,500	0	100%	35%	4,025
9/9/03	6563	David Rodal	3,695	3,695	0	100%	35%	1,293
9/9/03	6564	John D. Bayless	2,399	2,399	0	100%	35%	840
10/9/03	6566	Richard E. Crusos	6,300	6,300	0	100%	50%	3,150
9/9/03	6567	Larry Hooper	2,500	2,500	0	100%	35%	875
9/9/03	6568	Greg Meltebeke	5,200	5,200	0	100%	35%	1,820
9/9/03	6569	Nils A. Tangedal	498	498	0	100%	50%	249
9/9/03	6570	Judson Dean Schaefer	3,295	3,295	0	100%	35%	1,153
10/9/03	6571	Orson May	1,615	1,615	0	100%	35%	565
9/9/03	6572	David Harwood	999	999	0	100%	35%	350
10/9/03	6573	Pat Borschowa	2,716	2,716	0	100%	35%	951
10/9/03	6577	David W. Anderson	3,040	3,040	0	100%	35%	1,064
9/9/03	6578	Frederick Staats	599	599	0	100%	35%	210
10/9/03	6580	Eldon B. Foster	660	660	0	100%	35%	231
10/9/03	6581	Ruth M. Tuttle	3,195	3,195	0	100%	35%	1,118
10/27/03	6582	Lyal T. Purinton	7,000	7,000	0	100%	35%	2,450
10/9/03	6583	Geoffrey Robillard	630	630	0	100%	35%	221
10/9/03	6584	Western States Arboriculture	12,800	12,800	0	100%	35%	4,480

Certified Wood Chippers
8/14/03 - 10/27/03
continued...

Certification Date	App #	Applicant	Claimed	Certified	Difference	% Allocable	Maximum Tax Credit	Tax Expenditure Liability
10/9/03	6591	Leonard Hoops	1,695	1,695	0	100%	35%	593
10/27/03	6592	Stephen S. Schliebe	4,800	4,800	0	100%	35%	1,680
10/9/03	6593	Robert P. Tone	5,900	5,900	0	100%	35%	2,065
10/9/03	6594	Limb Walker Tree Service Inc.	21,500	21,500	0	100%	35%	7,525
10/27/03	6595	Fred Mathis	2,525	2,525	0	100%	35%	884
10/27/03	6597	Matthew J. Rebsom	1,800	1,800	0	100%	35%	630
10/27/03	6602	Kenneth L. Christensen	5,395	5,395	0	100%	35%	1,888
10/27/03	6604	Lawrence L. Shaffer	7,195	7,195	0	100%	35%	2,518
	Apps	**Sum**	**181,053**	**183,626**	**(2,573)**			**69,782**
	32	Average	5,658	5,738	(80)			2,181
		Minimum	498	498	(2,500)			210
		Maximum	24,300	24,300	0			8,505
		Median	3,245	3,245	0			1,136

Attachment F
Tax Expenditure Liability Report

When the Environmental Quality Commission issues a Pollution Control Facilities Tax Credit Certificate, the State of Oregon incurs a tax expenditure liability. The table in this attachment shows the maximum potential fiscal impact associated with the Commission's decision to certify the facilities presented in this staff report and for the current biennium.

This report shows the maximum amount of credit that each applicant may use to reduce their Oregon taxes in any one year if the Commission certifies their facility. The annual limitation is equal to the tax credit divided by the "remaining useful life" of the facility but no more than ten years. The remaining useful life is the useful life of the facility less the expired period between the date the applicant placed the facility into operation and the date the Commission approved certification.

Tax Expenditure Liability Report
03-05 Biennium

App #	Tax Credit	Placed in Operation	UL	Remaining UL	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
6095	$ 7,985	2001	7	5	1,597	1,597	1,597	1,597	1,597	0	0	0	0	0
6438	24,590	2002	5	4	6,148	6,148	6,148	6,146	0	0	0	0	0	0
6446	72,420	2001	10	8	9,053	9,053	9,053	9,053	9,053	9,053	9,053	9,053	0	0
6479	23,528	2002	7	6	3,921	3,921	3,921	3,921	3,921	3,923	0	0	0	0
6484	5,909	2002	10	9	657	657	657	657	657	657	657	657	653	0
6501	3,938	2001	10	8	492	492	492	492	492	492	492	494	0	0
6517	1,356,120	2002	10	9	150,680	150,680	150,680	150,680	150,680	150,680	150,680	150,680	150,680	0
6527	14,429	2003	10	10	1,443	1,443	1,443	1,443	1,443	1,443	1,443	1,443	1,443	1,442
6532	5,950	2002	7	6	992	992	992	992	992	990	0	0	0	0
6538	26,132	2001	10	8	3,266	3,266	3,266	3,266	3,266	3,266	3,266	3,270	0	0
6557	109,276	2002	7	6	18,213	18,213	18,213	18,213	18,213	18,211	0	0	0	0
6559	19,222	2002	20	10	1,922	1,922	1,922	1,922	1,922	1,922	1,922	1,922	1,922	1,924
6562	2,014	2001	5	3	671	671	672	0	0	0	0	0	0	0
6574	685,876	2001	10	8	85,734	85,734	85,734	85,734	85,734	85,734	85,734	85,738	0	0
6575	366	2003	5	5	73	73	73	73	74	0	0	0	0	0
6579	2,522	2003	5	5	504	504	504	504	506	0	0	0	0	0
6585	9,603	2003	5	5	1,921	1,921	1,921	1,921	1,919	0	0	0	0	0
6586	17,379	2003	5	5	3,476	3,476	3,476	3,476	3,475	0	0	0	0	0
6587	13,600	2003	5	5	2,720	2,720	2,720	2,720	2,720	0	0	0	0	0
6588	33,810	2003	10	10	3,381	3,381	3,381	3,381	3,381	3,381	3,381	3,381	3,381	3,381
6596	1,925	2003	5	5	385	385	385	385	385	0	0	0	0	0
6600	16,557	2003	10	10	1,656	1,656	1,656	1,656	1,656	1,656	1,656	1,656	1,656	1,653
6603	1,824	2003	7	7	261	261	261	261	261	261	258	0	0	0
6606	50,996	2002	7	6	8,499	8,499	8,499	8,499	8,499	8,501	0	0	0	0
Dec-03	**$ 2,505,971**				**307,665**	**307,665**	**307,666**	**306,992**	**300,846**	**290,170**	**258,542**	**258,294**	**159,735**	**8,400**
Oct-03	8,982,220				1,822,303	1,559,805	1,355,567	1,332,976	947,174	759,224	720,219	358,126	96,070	30,757
Total	11,488,191				2,129,968	1,867,470	1,663,233	1,639,968	1,248,020	1,049,394	978,761	616,420	255,805	39,157

State of Oregon

Department of Environmental Quality Memorandum

To: Environmental Quality Commission **Date:** November 28, 2003

From: Mikell O'Mealy, Assistant to the Commission and Director

Subject: Addendum to Item G:, Action Item: Consideration of Pollution Control Facilities Tax Credit Requests

As you may recall, in recent years the Department has asked you to schedule an end-of-the-year Commission conference call meeting to allow you to act on a small number of late-arriving Pollution Control Facilities Tax Credit applications by the end of the calendar year. These were applications that the Department could not finish processing before your last regular meeting of the year, but for which the applicants *could* receive a tax credit applicable to the current tax year if the Commission were to approve their request. Although the end-of-year conference call was often somewhat inconvenient (it occurred during the week between Christmas and New Years), the Commission has always agreed to hold the meeting to deliver excellent customer service to the applicants concerned.

This year, the Department has successfully completed processing on all late-arriving tax credit applications before your December 4-5, 2003 meeting in order to avoid the need for an end-of-year conference call. Attached is an addendum to your current staff report for Item G, *Action Item: Consideration of Pollution Control Facilities Tax Credit Requests*, dated November 13, 2003. This addendum contains sixteen additional tax credit applications for which the Department recommends your approval at the December 5 meeting.

If you have any questions about this addendum, please contact me at 503-229-5301, or toll-free at 1-800-452-4011 ext. 5301 in the state of Oregon.

Thank you, and I look forward to seeing you next week.

State of Oregon

Department of Environmental Quality Memorandum

Date: November 26, 2003

To: Environmental Quality Commission

From: Stephanie Hallock, Director Lina DeConcini for SH

Subject: ADDENDUM to Agenda Item G, Action Item: Tax Credit Application Consideration December 5, 2003 EQC Meeting

Purpose of Addendum

The Department presents this Addendum to Agenda Item G rather than request an Environmental Quality Commission (EQC) telephone meeting to consider Pollution Control Facilities Tax Credit before the calendar year ends. This Addendum includes additional applications for the EQC to consider. Approval of these applications would allow the applicants to use these tax credits for the 2003 tax year.

The Department recommends that the EQC approve **16** additional facilities presented in **Attachment B** to this Addendum. The Review Reports are organized under the following tabs:

- Air
- Alternatives to Field Burning (shown as *Alt FB* on the tab)
- Material Recovery (shown as *Mat Rec* on the tab)
- Underground Storage Tanks (shown as *UST/AST* on the tab)
- Water

This Addendum includes an update to **Attachment A** of the Staff Report dated November 13, 2003. It is a comprehensive list of all Pollution Control Facilities Tax Credit applications presented in Agenda Item G and includes these 16 additional applications.

This Addendum also includes an update to the Tax Expenditure Liability Report in **Attachment F** of the Staff Report. As above, the update now includes these 16 additional applications.

Approved:

Section: Maggie Vandehey 11/25

Division:

Report Prepared By: Maggie Vandehey
Phone: 503-229-6878

Attachment A - Ammended
Summary of Recommendations

Recommended for Approval

App #	Applicant	Claimed	Certified	Difference	% Allocable	Maximum Tax Credit	Tax Expenditure Liability	Media	EQC Action
5736	Columbia Steel Casting Company, Inc.	67,341	49,114	(18,227)	100%	50%	24,557	Water	
5974	TDY Industries, Inc.	2,617,306	2,532,814	(84,492)	100%	50%	1,266,407	Air	
6095	Willamette Graystone	20,410	15,970	(4,440)	100%	50%	$7,985	Air	
6432	Frank Hoekstre	243,119	213,439	(29,680)	96%	50%	102,451	Alt. FB	
6433	Frank Hoekstre	538,747	521,644	(17,103)	77%	50%	200,833	Alt. FB	
6438	James D. Straughan - 80% Thomas E. Straughan - 20%	49,180	49,180	0	100%	50%	24,590	NPS	
6446	John W. Lekkerkerker	166,629	144,840	(21,789)	100%	50%	72,420	Water	
6469	Cascade Steel Rolling Mills, Inc	1,056,847	1,056,847	0	100%	35%	369,896	Air	
6479	Kenneth R. McCoy	67,222	67,222	0	100%	35%	23,528	NPS	
6484	Terrain Tamers Chip Hauling	18,574	16,882	(1,692)	100%	35%	5,909	Water	
6496	Columbia Steel Casting Company, Inc.	100,657	91,507	(9,150)	100%	50%	45,754	Air	
6501	U Pull It Salem Auto Wrecking	7,875	7,875	0	100%	50%	3,938	Water	
6514	Columbia Steel Casting Company, Inc.	37,355	37,355	0	100%	35%	13,074	Air	
6517	Hermiston Power Partnership	3,874,628	3,874,628	0	100%	35%	1,356,120	Air	
6527	Fujimi America Inc.	53,744	41,227	(12,517)	100%	35%	14,429	Air	
6532	Timothy Pfeiffer	17,120	17,000	(120)	100%	35%	5,950	NPS	
6538	KLK Farm	98,610	98,610	0	53%	50%	26,132	NPS	
6541	WSCO Petroleum Corp	108,107	107,435	(672)	100%	35%	37,602	UST	
6557	Freres Lumber Co.	379,518	312,217	(67,301)	100%	35%	109,276	Air	
6558	Larsen's Creamery, Inc.	92,654	92,654	0	100%	35%	32,429	Water	
6559	William Gooding	56,266	54,921	(1,345)	100%	35%	19,222	Air	
6560	Roger E. Neuschwander	6,000	6,000	0	100%	35%	2,100	Alt. FB	
6561	Roger E. Neuschwander	200,359	197,359	(3,000)	100%	35%	69,076	Alt. FB	
6562	Cloudburst Recycling	5,755	5,755	0	100%	35%	2,014	Mat. Rec.	
6574	Intel Corporation	1,371,751	1,371,751	0	100%	50%	685,876	Air	
6575	Kiser Enterprises	1,569	1,046	(523)	100%	35%	366	Mat. Rec.	
6579	New KAB VIII, LLC	7,207	7,207	0	100%	35%	2,522	Mat. Rec.	
6585	Metro Metals Northwest	45,066	27,438	(17,628)	100%	35%	9,603	Mat. Rec.	
6586	Metro Metals Northwest	49,655	49,655	0	100%	35%	17,379	Mat. Rec.	
6587	Metro Metals Northwest	38,856	38,856	0	100%	35%	13,600	Mat. Rec.	
6588	Jeff Cutsforth Farm	96,599	96,599	0	100%	35%	33,810	NPS	
6590	Pope & Talbot, Inc.	201,807	197,417	(4,390)	100%	35%	69,096	Air	
6596	Sharp Auto Body	5,500	5,500	0	100%	35%	1,925	Mat. Rec.	

1. Tax expenditure liability = certified cost * % allocable * maximum allowable %.

Attachment A - Ammended
Summary of Recommendations

App #	Applicant	Claimed	Certified	Difference	% Allocable	Maximum Tax Credit	Tax Expenditure Liability	Media	EQC Action
6600	Baker Sanitary Service	47,305	47,305	0	100%	35%	16,557	Mat. Rec.	
6603	Global Leasing	5,211	5,211	0	100%	35%	1,824	Mat. Rec.	
6606	Pacific Sanitation	145,704	145,704	0	100%	35%	50,996	Mat. Rec.	
6607	Garbarino Disposal & Recycling Service,	4,869	4,869	0	100%	35%	1,704	Mat. Rec.	
6610	M & M Rentals LLC	105,523	96,219	(9,304)	100%	50%	48,110	UST	
6615	Rosavers Supermarkets, Inc.	46,700	46,700	0	100%	50%	23,350	Mat. Rec.	
6626	Columbia Steel Casting Company, Inc.	8,750	8,750	0	100%	35%	3,063	Air	

Apps		Claimed	Certified	Tax Expenditure Liability
40	**Sum**	**12,066,095**	**11,762,722**	**4,815,471**
	Average	301,652	294,068	120,387
	Minimum	1,569	1,046	366
	Maximum	3,874,628	3,874,628	1,356,120
	Median	55,005	49,418	23,439

Recommended for Denial

App #	Applicant	Claimed Cost	% Allocable	Maximum Tax Credit	Media	EQC Action
6260	Merix Corporation	241,280	100%	50%	Water	
6266	Ronald and Beverly Rohde	102,479	0%	50%	Air	
6326	Steven E. Davidson	79,300	0%	50%	FB	
6400	US Gypsum	$3,044,654	100%	50%	Water	

Apps		Claimed Cost
4	**Sum**	**3,467,713**
	Average	866,928
	Minimum	79,300
	Maximum	3,044,654
	Median	171,880

Recommended for Transfer

Certificate #	From	To	EQC Action
3599	Farrelly & Farrelly LLC	TR & T, LLC.	
4498	Simco Distributing, Inc	Fred and Doris Simmons	

1. Tax expenditure liability = certified cost * % allocable * maximum allowable %.

Attachment B
Background and References for Final Approvals

State of Oregon
Department of Environmental Quality

Tax Credit Review Report

Pollution Control Facility: Air
Final Certification
ORS 468.150 -- 468.190
OAR 340-016-0005 -- 340-016-0080

Director's Recommendation

Approve Application No. **5974 @ Reduced Cost**

Applicant: **TDY Industries, Inc., dba Wah Chang**

Certification of:

Facility Cost		**$2,532,814**
Percentage Allocable	X	100%
Maximum Percentage	X	50%
Tax Credit		**$1,266,407**

Certificate Period: **10 years**

Applicant Identification

PO Box 460
Albany, OR 97321

Organized as: **C Corp.**
Taxpayer ID: **95-2316677**

Facility Identification

1600 Old Salem Road
Albany, OR 97321

The certificate will identify the facility as:

Five Engine Exhaust Emissions Reduction Systems and Noise Reduction Systems

Technical Information

TDY Industries, Inc., dba Wah Chang, produces pure zirconium metal from naturally occurring zircon sand at its Albany, Oregon, facility. The applicant installed a cogeneration plant to provide the electricity and steam required to keep the plant operating during prolonged periods of power interruption. The cogeneration plant last produced 30 megawatt hours (MWH) of electricity in January 2003 during a test of the system. The company generated 360 MWH in 2002, and 17,245 MWH of electricity in 2001. The cogeneration plant includes five large natural gas fired engines with electric generators and steam vaporizers. Without the pollution equipment, the engines would produce the following pollutants each hour that the plant is operating: 8.63 pounds of nitrogen oxides (NO_x), 23.44 pounds of carbon monoxide (CO), and 2.47 pounds of volatile organic compounds (VOC). The applicant claims air pollution controls and noise pollution controls associated with the cogeneration plant.

- The **air pollution controls** include five Selective Catalyst Reduction (SCR) systems, five Oxidation Catalyst units, an ammonia hydroxide (NH_4OH) storage tank and an injection system. When the cogeneration plant is running, these components reduce exhaust emissions to: 0.69 pounds of NO_x per hour (92% reduction); 4.71 pounds of CO per hour (80% reduction); and 1.71 pounds of VOC per hour (30% reduction).

- The applicant claimed the following **noise pollution controls**: five large mufflers installed on the exhaust of the engines, insulation on the exhaust ducting, and acoustical insulation in the engine room to reduce the noise level. The applicant installed mufflers with the engines; therefore, sound level data without the mufflers is not available. A sound level measurement taken 50 feet from the building housing the generators was 71 dBA. The noise sensitive property is a cemetery 600 yards north of the facility. The applicant reduced noise levels within the facility prior to the installation of the cogeneration plant because of complaints from people attending services at the cemetery.

Taxpayer Allowed Credit

ORS 315.304(4)

Criteria

The applicant must be:

a. **Owner**, including a contract purchaser, of the trade or **business that uses** the Oregon property requiring a pollution control **facility** to prevent or minimize pollution; or

b. Person who, as a lessee or pursuant to an agreement, conducts the trade or business that operates or utilizes such property.

Applied to this Application

The applicant owns the business that uses the pollution control facility.

Eligibility

Timely Filing
1999 Edition
ORS 468.165(6)
OAR 340-016-0007

Criteria

The applicant must submit the application within two years after the date that they complete construction of the facility if that date was on or before December 31, 2001. The applicant must also submit the final application after they complete construction and place the facility into operation.

Applied to this Application

The applicant submitted the application **within** the **two-year filing requirement**. They completed construction on 7/1/2001, placed the facility into operation on 7/2/2001, and submitted the application on 12/28/2001. Therefore, the applicant submitted the application after they completed construction and placed the facility into operation.

Purpose: Required
ORS 468.155 (1)(a)(A)
OAR 340-016-0060(2)(a)

Criteria

The principal purpose of the claimed facility must be to comply with a requirement imposed by DEQ, EPA, or LRAPA to prevent, reduce, or control air pollution. That principal purpose must be the most important or primary purpose of the facility. The facility must have only one primary purpose.

> "Air Pollution" is the presence in the outdoor atmosphere of one or more air contaminants, or any combination thereof, in sufficient quantities and of such characteristics and of a duration as are or are likely to be injurious to public welfare, to the health of human, plant or animal life or to property or to interfere unreasonably with enjoyment of life and property throughout such area of the state as shall be affected thereby. ORS 468A.005

Applied to this Application

The applicant installed the five Selective Catalyst Reduction (SCR) systems, five Oxidation Catalyst units, ammonia hydroxide (NH_4OH) storage tank and injection system to **comply with** the applicant's **Title V Air Contamination Discharge Permit** to limit the discharge of NO_x, CO, and VOC to the environment imposed by DEQ.

The applicant also installed five large mufflers on the engines and insulated the exhaust ducting and vaporizer to **comply with** DEQ noise rule ORS **340-035-0035 Table 7**. Table 7 requires noise levels to be less than 55dBA 50% of the time between the hours of 7 am and 10 pm; and noise levels cannot exceed 75 dBA for more than 1% of the time. The noise sensitive property is a cemetery located 600 yards north of the claimed facility. The applicant used an acoustical engineer to calculate the noise levels at the cemetery assuming the applicant had not installed the mufflers. The calculated noise levels exceeded the levels in Table 7 of ORS 340-35-035.

The primary and most important purpose of the **noise curtains** is to meet OSHA requirements. The applicant installed the noise curtains in the engine bays to isolate a single engine from adjacent engines so that maintenance personnel may work on the engines for extended periods. The noise curtain, however, does not reduce noise levels at the noise sensitive property. The Department subtracted the cost of the noise curtains from the claimed cost under the *Facility Cost* section below.

Method
ORS 468.155 (1)(b)(B)

Criteria

The prevention, control, or reduction must be accomplished by the disposal or elimination of air contaminants, air pollution, or air contamination sources; and the use of an air cleaning device as defined in ORS 468A.005.

> "Air contaminant" means a dust, fume, gas, mist, odor, smoke, vapor, pollen, soot, carbon, acid or particulate matter or any combination thereof.
>
> "Air-cleaning device" means any method, process or equipment, which removes, reduces or renders less noxious air contaminants prior to their discharge in the atmosphere.

Applied to this Application
The gas streams exhausted from the internal combustion engines **meet the definition of air pollution** because the NO_x, CO, and VOC are air contaminants. The SCR and Oxidation Catalyst Units **meet the definition of air cleaning devices** because they reduce and render the air contaminants less noxious prior to their discharge into the atmosphere.

The noise level at the noise sensitive property meets **the definition of industrial noise levels.** (ORS 340-35-035 Table 7). The five large mufflers installed on the engines, the vent silencer, and the insulation on the exhaust ducting reduced industrial noise levels at the noise sensitive property. An acoustical engineer calculated the noise levels at less than 50 dBA at the noise sensitive property based on noise levels measured 50 feet from the engines.

Exclusions
ORS 468.155(3)
OAR 340-016-0070(3)

Criteria
The regulations provide a list of more than 40 items excluded from the definition of a Pollution Control Facility. One of the listed items is "Any distinct portion of a pollution control facility that makes an insignificant contribution to the principal or sole purpose of the facility..." Items that do not meet the definition are ineligible for certification.

Applied to this Application
The applicant claimed cost for demolishing the pre-existing building, painting the new building, and heat recovery engineering services. These items make an insignificant contribution to the pollution control purpose described in the Purpose: Required section above. The Department subtracted the cost of these items under the Facility Cost section below.

Replacement
ORS 468.155 (3)(e)

Criteria
The replacement or reconstruction of all or part of a facility that has previously been certified as a pollution control facility under ORS 468.170 is not eligible for the tax credit with two exceptions: 1) the facility was replaced due to a requirement imposed by DEQ or EPA that is different than the requirement to construct the original facility; or 2) the facility was replaced before the end of its useful life.

Applied to this Application
The State of Oregon certified 58 pollution control facilities tax credits at this location. The claimed facility **is not a replacement** of one of the previously certified facilities.

Maximum Credit
ORS 468.173(1)
OAR 340-016-0007

Criteria
The maximum tax credit available to the applicant is **50%** if the applicant completed construction of the facility on or before December 31, 2001 and the applicant submitted the application on or before December 31, 2003.

Applied to this Application
The maximum tax credit is **50%** because the applicant completed construction on 07/01/2001 and submitted the application on 12/28/2001.

Facility Cost

Subtractions
OAR 340-016-0070(1)

Criteria
The applicant must provide documents that substantiate the claimed facility cost. The claimed cost may not include:

a) the salvage value of a pre-existing facility if the applicant is replacing a facility;

b) the amount of any government grants received to pay part of the facility cost;

c) the present value of any other state tax credits for which the investment is eligible; and

d) ineligible costs as set forth in OAR 340-016-0070(3).

Applied to this Application
There are **no subtractions**.

$ Certification
ORS 468.170(1)

Criteria
The certified cost is limited to the actual cost of the pollution control portion of the facility. The certified cost may not exceed the taxpayer's own cash investment in the facility or portion of the facility.

Applied to this Application
Copies of **invoices substantiated** the eligible facility **cost**.

Referenced Section	Description of Ineligible Portion	Cost
	Claimed Cost	$2,617,306
	No cost documentation	(27,685)
	ORS 468.165(2)	
Exclusions:		
	Painting building	(5,200)
	equipment	(22,122)
	Demolition	(26,889)
	Heat recovery engineering	(2,596)
	Eligible Cost	**$2,532,814**

Facility Cost Allocable to Pollution Control

% Certification
ORS 468.170(1)

Criteria
The certified "percentage allocable" is limited to the portion of the actual facility cost that is properly allocable to the prevention, control, or reduction of air pollution.

ORS 468.190(1) The following factors establish the portion of costs properly allocable to air pollution control for facilities that cost more than $50,000.

a. The extent to which the applicant uses the facility to recover and convert waste products into a salable or usable commodity;

b. The estimated annual percent return on the investment in the facility;

c. Any alternative methods, equipment, and costs for achieving the same pollution control objective;

d. Any related savings or increase in costs that occur or may occur as a result of the installation of the facility; and

e. Any **other relevant factors**.

Applied to this Application
The claimed facility produces no salable or usable commodities. The claimed facility does not have a positive return on the investment; therefore, **100% of the facility cost is allocable to pollution control**. The functional life of the facility that the Department would have used to calculate the return on investment is **10** years. The applicant did not investigate an alternative technology because the claimed facility is the best available technology. There were no related savings associated with the claimed facility but there are increased operating costs. There are no other relevant factors.

Compliance

ORS 468.180(1) Criteria
The Environmental Quality Commission may not issue a certificate unless the applicant constructed or installed the claimed facility in accordance with the applicable provisions of ORS 454.010 to 454.040, 454.205 to 454.255, 454.505 to 454.535, 454.605 to 454.755, ORS chapters 459, 459A, 465, 466 and 467 and ORS chapters 468, 468A and 468B. This includes the rules and standards adopted to implement these provisions.

Applied to this Application
The DEQ staff member assigned to the source is Ali Nikukar from the Western Region Office. He affirmed the applicant's statement that the claimed facility is in compliance with Department rules and statutes and with EQC orders.

DEQ issued the following permits to the site:

- Title V Air Contamination Discharge Permit No. 22-0547, issued 9/12/2001
- NPDES General Permit – Storm Water Permit No. 1200-Z, issued 7/22/1997
- NPDES Wastewater Discharge Permit No. 100522, issued 9/30/1988

Reviewers: PBS Engineering and Environmental
Maggie Vandehey, DEQ

State of Oregon
Department of Environmental Quality

Tax Credit Review Report

Pollution Control Facility: Air
Final Certification
ORS 468.150 -- 468.190
OAR 340-016-0005 -- 340-016-0080

Director's Recommendation

Approve Application No. **6469**

Applicant: **Cascade Steel Rolling Mills, Inc**

Certification of:

Facility Cost		$1,056,847
Percentage Allocable	X	100%
Maximum Percentage	X	35%
Tax Credit		**$369,896**

Certificate Period: **10 years**

Applicant Identification

3200 North Highway 99 West
McMinnville, OR 97128

Organized as: **C Corp**
Taxpayer ID: **93-0871545**

Facility Identification

3200 North Highway 99 West
McMinnville, OR 97128

The certificate will identify the facility as:

An American Air six compartment baghouse and a Robinson Industries Fan, model BC1036, SWSI

Technical Information

Cascade Steel Rolling Mills, Inc. owns and operates a scrap iron and steel mill in McMinnville. The applicant melts the scrap metal in an electric arc furnaces (EAF). The applicant uses the melted metal to form billets that will be used in the hot rolling mill.

The applicant claims a used six-compartment baghouse to capture particulate emissions that previously escaped the main canopy. The baghouse includes a used Siemens 600 horsepower fan motor that provides an additional 200,000 actual cubic feet per minute (acfm), and a reverse-air cleaning mechanism to clean the 700 fiberglass filter-bags. The applicant claims a partition and a canopy to separate the furnace area from the rest of the building. These structures reduce fugitive emissions from the melt shop roof when the applicant removes the direct shell evacuation system from the EAF to load the furnace with scrap metal and to drain the melted metal. The claimed facility collects hazardous waste (K601) and disposes of it at U.S. Ecology in Idaho.

The applicant uses the claimed facility in conjunction with the existing baghouse to reduce furnace emissions using a total of 2,400 HP fans that create draft exhaust up to 700,000 acfm. The pre-existing baghouse has 12 compartments and two fans to draft exhausts from the melt shop and EAF at approximately 500,000 acfm.

Taxpayer Allowed Credit

ORS 315.304(4)

Criteria

The taxpayer who is allowed the credit must be:

a. The **owner**, including a contract purchaser, **of** the trade or **business** that utilizes Oregon property requiring a pollution control facility to prevent or minimize pollution:

b. A person who, as a lessee or pursuant to an agreement, conducts the trade or business that operates or utilizes such property;

Applied to this Application

Applicant is the owner of the business that operates the facility.

Eligibility

Timely Filing
2001 Edition
ORS 468.165(6)

Criteria

The applicant must submit the application within one year after the date that they completed construction of the facility. The final application, however, is not valid if the applicant submits the application before they complete construction or before they place the facility into operation.

Applied to this Application

The applicant submitted the application **within the** one-year **filing period** by completing construction on 5/1/2002 and submitting the application on 3/10/2003. The applicant submitted the final application after completing construction and placing the facility into operation on 5/1/2002.

Purpose: Voluntary
ORS 468.155 (1)(a)(B)
OAR 340-016-0060(2)(A)

Criteria

The sole purpose, meaning the 'exclusive' purpose, of the claimed facility must be to prevent, control, or reduce a substantial quantity of air pollution.

"Air Pollution" is the presence in the outdoor atmosphere of one or more air contaminants, or any combination thereof, in sufficient quantities and of such characteristics and of a duration as are or are likely to be injurious to public welfare, to the health of human, plant or animal life or to property or to interfere unreasonably with enjoyment of life and property throughout such area of the state as shall be affected thereby. ORS 468A.005

Applied to this Application

Particulate emissions **meet the definition of air pollution**. The applicant voluntarily installed the claimed facility that they use to collect, treat, and dispose of 12,000 tons per year of air pollutants, particularly K601.

Method
ORS 468.155 (1)(b)(B)

The prevention, control, or reduction must be accomplished by the disposal or elimination of air contaminants, air pollution, or air contamination sources; and the use of an air cleaning device as defined in ORS 468A.005.

"Air contaminant" means a dust, fume, gas, mist, odor, smoke, vapor, pollen, soot, carbon, acid or particulate matter or any combination thereof.

"Air-cleaning device" means any method, process or equipment, which removes, reduces or renders less noxious air contaminants prior to their discharge in the atmosphere.

Applied to this Application

The baghouse, the partition, and the canopy meet the definition of an air cleaning device because the system removes hazardous particulate emissions (K601) that meets the definition of an air contaminate as defined by ORS 468A.005.

Any source at, from, or by reason of which there is emitted into the atmosphere any air contaminant, regardless of who the person may be who owns or operates the building, premises or other property in, at or on which such source is located, or the facility, equipment or other property by which the emission is caused or from which the emission comes.

Exclusions
ORS 468.155(3)
OAR 340-016-0070(3)

Criteria

The regulations provide a list of over 40 items excluded from the definition of a Pollution Control Facility. Items that do not meet the definition are ineligible for certification.

Applied to this Application

There are **no exclusions**.

Replacement
ORS 468.155(3)(e)

Criteria

The replacement or reconstruction of all or part of a facility that has previously been certified as a pollution control facility under ORS 468.170 is not eligible for the tax credit with two exceptions:

1) the facility was replaced due to a requirement imposed by DEQ or EPA that is different than the requirement to construct the original facility; or

2) the facility was replaced before the end of its useful life.

Applied to this Application

The State of Oregon issued three Pollution Control Facilities Tax Credit Certificates to the applicant at this location. One of these was for Phase I of the baghouse system. The applicant uses the claimed facility, which is Phase II of the baghouse system, in conjunction with the previously certified baghouse. The claimed facility is **not a replacement facility.**

Maximum Credit
ORS 468.173(3)(g)

Criteria
The applicable percentage of the certified cost of a facility is 35% if the applicant voluntarily constructed or installed the claimed facility.

Applied to this Application
The **maximum tax credit is 35%** because the applicant voluntarily constructed the claimed faclity. Gary Andes in DEQ's Northwest Region confirmed that the applicant voluntarily constructed the claimed facilty.

Facility Cost

Subtractions
OAR 340-016-0070(1)

Criteria
The applicant must provide documents that substantiate the claimed facility cost. The claimed cost may not include:

a) the salvage value of a pre-existing facility if the applicant is replacing a facility;

b) the amount of any government grants received to pay part of the facility cost;

c) the present value of any other state tax credits for which the investment is eligible; and

d) ineligible costs as set forth in OAR 340-016-0070(3).

Applied to this Application
There are **no subtractions**.

$ Certification
ORS 468.170(1)

Criteria
The certified cost is limited to the actual cost of the pollution control portion of the facility. The certified cost may not exceed the taxpayer's own cash investment in the facility or portion of the facility.

Applied to this Application
Copies of invoices substantiated the claimed facility cost.

Referenced Section	Description of Ineligible Portion		Cost
		Claimed	$1,056,847
	There are no deductions		0
		Certified	**$1,056,847**

Facility Cost Allocable to Pollution Control

% Certification
ORS 468.170(1)

Criteria
The certified "percentage allocable" is limited to the portion of the actual facility cost that is properly allocable to the prevention, control, or reduction of air pollution.

ORS 468.190(1) The following factors establish the portion of costs properly allocable to pollution control facilities that cost more than $50,000.

a. The extent to which the applicant uses the facility to recover and convert waste products into a salable or usable commodity;

b. The estimated annual percent return on the investment in the facility;

c. Any alternative methods, equipment, and costs for achieving the same pollution control objective;

d. Any related savings or increase in costs that occur or may occur as a result of the installation of the facility; and

e. Any **other relevant factors**.

Applied to this Application
The claimed facility produces no salable or usable commodities. The claimed facility does not have a positive return on the investment. Therefore, **100% of the facility cost is allocable to pollution control**. The functional life of the facility that the Department would have used to calculate the return on investment is **10** years. The applicant did not investigate an alternative technology because the claimed facility is the best available technology. There were no related savings associated with the claimed facility but there are increased operational costs. There are no other relevant factors.

Compliance

ORS 468.180(1) Criteria
The Environmental Quality Commission may not issue a certificate unless the applicant constructed or installed the claimed facility in accordance with the applicable provisions of ORS 454.010 to 454.040, 454.205 to 454.255, 454.505 to 454.535, 454.605 to 454.755, ORS chapters 459, 459A, 465, 466 and 467 and ORS chapters 468, 468A and 468B. This includes the rules and standards adopted to implement these provisions.

Applied to this Application
The applicant states the facility and site are in compliance with Department rules and statutes, and with EQC orders. The DEQ staff assigned to the source is Gary Andes from the Western Region. Mr. Andes confirmed the applicant's statement.

DEQ issued a Notice of Approval (NOA) No. 017248

Reviewers: Maggie Vandehey, DEQ

State of Oregon
Department of
Environmental
Quality

Tax Credit Review Report

Pollution Control Facility: Air
Final Certification
ORS 468.150 -- 468.190
OAR 340-016-0005 -- 340-016-0080

Director's Recommendation:

Approve Application No. **6496 @ Reduced Cost**

Applicant: **Columbia Steel Casting Co., Inc.**

Certification of:

Facility Cost		$91,507
Percentage Allocable	x	100%
Maximum Percentage	x	50%
Tax Credit		**$45,754**

Certificate Period: **7 years**

Applicant Identification

PO Box 83095
Portland, OR 97283

Organized as: **S Corp.**
Taxpayer ID: **93-0336095**

Facility Identification

10425 North Bloss Avenue
Portland, OR 97203

The certificate will identify the facility as:

Used Fabric Filter Dust Collector, Wheelabrator #72, Model 108 Ultra Jet Dust Collector, SN # A-127983

Technical Information

Columbia Steel Casting Company manufactures alloy steel castings. The applicant claims a rebuilt Wheelabrator fabric filter dust collector (baghouse). The claimed facility collects fine particulate matter (PM) generated by a new shotblast cleaning machine. The baghouse and the shotblast cleaning machine are interlocked to prevent the inadvertent discharge of PM emissions. The claimed facility prevents approximately eight tons of PM from being discharged into the atmosphere each year. The dust collected by the baghouse discharges to a used cement mixer truck claimed on application number 6620. The claimed facility includes a three-walled concrete foundation to support the baghouse and the truck loading process.

The baghouse has an approximate 99% efficiency rating. The applicant sized the baghouse for 8,000 cubic feet of air per minute. The baghouse has an air to cloth ratio of 7.71 to 1 by using 72 bags that are six inches in diameter and 110 inch long.

Taxpayer Allowed Credit

ORS 315.304(4) Criteria

The taxpayer who is allowed the credit is the:

a. **Owner**, including a contract purchaser, **of** the trade or **business** that uses the Oregon property requiring a pollution control facility to prevent or minimize pollution; or

b. Person who, as a lessee or pursuant to an agreement, conducts the trade or business that operates or utilizes such property.

Applied to this Application

The applicant is the **owner** of the business that uses the claimed facility.

Eligibility

Timely Filing
1999 Edition
ORS 468.173(1)
OAR 340-016-0007

Criteria

The applicant must submit the application within two years after the date that they complete construction of the facility if that date was on or before December 31, 2001. The applicant must also submit the final application after they complete construction and place the facility into operation.

Applied to this Application

The applicant submitted the application **within** the **two-year** period *by* complet*ing* construction on 4/20/2001 and submitt*ing* the application less than two years later on 4/18/2003. As required, the applicant submitted the application after completing construction and placing the facility into operation on 5/1/2001.

Purpose: Required
ORS 468.155 (1)(a)(A)
OAR 340-016-0060(2)(a)

Criteria

The principal purpose of the claimed facility must be to comply with a requirement imposed by DEQ, EPA, or LRAPA to prevent, reduce, or control air pollution. This purpose must be the most important or primary purpose of the facility. The facility must have only one primary purpose.

> "Air Pollution" is the presence in the outdoor atmosphere of one or more air contaminants, or any combination thereof, in sufficient quantities and of such characteristics and of a duration as are or are likely to be injurious to public welfare, to the health of human, plant or animal life or to property or to interfere unreasonably with enjoyment of life and property throughout such area of the state as shall be affected thereby. ORS 468A.005

Applied to this Application

The Wheelabrator baghouse and associated external ductwork and controls **comply with** air contaminant **discharge permit** #26-1869 imposed by DEQ. The primary or most important purpose of the claimed facility is to prevent air pollution.

The applicant also claims internal ducting. The applicant would have had to

install the ducting with or without the claimed facility to prevent discharge of airborne particulate to the work environment. The primary and most important **purpose of** the **internal ducting is material handling**. The Department subtracted the costs of the ducting from the claimed cost under the *Facility Cost* section below.

Method
ORS 468.155 (1)(b)(B)

Criteria
The prevention, control, or reduction must be accomplished by the disposal or elimination of air contaminants, air pollution, or air contamination sources; and the use of an air cleaning device as defined in ORS 468A.005.

"Air contaminate" is defined as any dust, fume, gas, mist, odor, smoke, vapor, pollen, soot, carbon, acid or particulate matter or any combination thereof.

"Air contamination source" is defined as any source at, from, or by reason of which there is emitted into the atmosphere any air contaminant, regardless of who the person may be who owns or operates the building, premises or other property in, at or on which such source is located, or the facility, equipment or other property by which the emission is caused or from which the emission comes.

Applied to this Application
The Wheelabrator baghouse **meets the definition of** an air-cleaning device and controls particulate emissions that meet the definition of an air contaminate as defined by ORS 468A.005

Exclusions
ORS 468.155 (3)
OAR 340-016-070(3)

Criteria
The regulations provide a list of more than 40 items excluded from the definition of a Pollution Control Facility. Items that make an insignificant contribution to the pollution control purpose of the claimed facility and maintenance are among these items. Items that do not meet the definition are ineligible for certification.

Applied to this Application
The applicant claims catwalks, ladders, and the platform used to perform maintenance on the baghouse structure. These items do not make a **significant contribution** to the pollution control purpose of the claimed facility. The Department subtracted the cost of these items from the claimed facility cost under the *Facility Cost* section below.

Replacement
ORS 468.155 (3)(e)

Criteria

The replacement or reconstruction of all or part of a facility that the State of Oregon has previously certified as a pollution control facility under ORS 468.170 is not eligible for the tax credit with two exceptions:

a. the applicant replaced the facility due to a DEQ, EPA, or regional air pollution authority requirement that is different than the requirement to construct the original facility; or

b. the applicant replaced the facility before the end of its useful life.

Applied to this Application

The State of Oregon has issued 19 Pollution Control Facilities Tax Credit Certificates to the applicant at this location. Eighteen were for air cleaning devices. The State did not previously certify the claimed facility or any of its distinguishable parts as a Pollution Control Facility; therefore, the facility is **not a replacement facility**.

Maximum Credit
ORS 468.173(1)

Criteria

The applicable percentage of the certified cost of a facility shall be 50% if the applicant began construction or installation of the facility prior to January 1, 2001, and completed it prior to January 1, 2004.

Applied to this Application

The **maximum tax credit is 50%** because the applicant began construction on 9/5/2000, completed construction on 4/20/2001, and submitted the application on 4/18/2003.

Facility Cost

Subtractions
OAR 340-016-0070(1)

Criteria

The applicant must provide documents that substantiate the claimed facility cost. The claimed cost may not include:

a) the salvage value of a pre-existing facility if the applicant is replacing a facility;

b) the amount of any government grants received to pay part of the facility cost;

c) the present value of any other state tax credits for which the investment is eligible; and

d) ineligible costs as set forth in OAR 340-016-0070(3).

Applied to this Application
There are **no subtractions**.

$ Certification Criteria
ORS 468.170(1) The certified cost is limited to the actual cost of the pollution control portion of the facility. The certified cost may not exceed the taxpayer's own cash investment in the facility or portion of the facility.

Applied to this Application
Copies of **invoices substantiated** the eligible facility **cost**.

Referenced Section	Description of Ineligible Portion		Cost
		Claimed	$100,657
Purpose:	Interior Ducting		- $5,000
Exclusions:	Work platform, catwalk & ladder		- $4,150
		Certified	**$91,507**

Facility Cost Allocable to Pollution Control

% Certification Criteria
ORS 468.170(1) The certified "percentage allocable" is limited to the portion of the actual facility cost that is properly allocable to the prevention, control, or reduction of air pollution.

ORS 468.190(1) The following factors establish the portion of costs properly allocable to facilities that control air pollution and cost more than $50,000.

a. The extent to which the applicant uses the facility to recover and convert waste products into a salable or usable commodity;

b. The estimated annual percent return on the investment in the facility;

c. Any alternative methods, equipment, and costs for achieving the same pollution control objective;

d. Any related savings or increase in costs that occur or may occur as a result of the installation of the facility; and

e. Any **other relevant factors**.

Applied to this Application
The claimed facility produces no salable or usable commodities. The claimed facility does not have a positive return on the investment; therefore, **100% of the facility cost is allocable to pollution control**. The functional life of the facility that the Department would have used to calculate the return on investment is **7** years. The applicant did not investigate an alternative technology because the claimed facility is the best available technology. There were no related savings associated with the claimed facility but there are increased operating costs. There are no other relevant factors.

Compliance

ORS 468.180(1) Criteria

The Environmental Quality Commission may not issue a certificate unless the applicant constructed or installed the claimed facility in accordance with the applicable provisions of ORS 454.010 to 454.040, 454.205 to 454.255, 454.505 to 454.535, 454.605 to 454.755, ORS chapters 459, 459A, 465, 466 and 467 and ORS chapters 468, 468A and 468B. This includes the rules and standards adopted to implement these provisions.

Applied to this Application

The DEQ staff member assigned to the source is Gregg Dahmen from the Northwest Region Office. He affirmed the applicant's statement that the claimed facility is in compliance with Department rules and statutes and with EQC orders.

DEQ issued the following permits to the site:

- NPDES No 1200-COLS issued December 22, 1999; and
- Air Contaminant Discharge Permit No. 26-1869, issued September 24, 2002.

Reviewers: PBS Engineering and Environmental
Maggie Vandehey, DEQ

State of Oregon
Department of
Environmental
Quality

Tax Credit Review Report

Pollution Control Facility: Air
Final Certification
ORS 468.150 -- 468.190
OAR 340-016-0005 -- 340-016-0080

Director's Recommendation

Approve Application No. **6514**

Applicant: **Columbia Steel Casting Co., Inc.**

Certification of:

Facility Cost		$37,355
Percentage Allocable	X	100%
Maximum Percentage	X	35%
Tax Credit		**$13,074**

Certificate Period: **7 years**

Applicant Identification

PO Box 83095
Portland, OR 97283

Organized as: **S Corp**
Taxpayer ID: **93-0336095**

Facility Identification

10425 N Bloss Avenue
Portland, OR 97203

The certificate will identify the facility as:

Four low-NOx burners for Heat Treat Oven #6

Technical Information

Columbia Steel Casting Co., Inc. is a foundry that manufactures alloy steel castings using ovens to heat-treat the castings. The applicant installed four (4) Eclipse Thermjet natural gas burners to replace existing burners in heat treat oven #6.

The applicant replaced the old burners with the new low-NO_x as part of an on-going program to upgrade all heat treating ovens. The manufacturer of the 20-year old burners designed them before the federal Environmental Protection Agency recognized nitrogen oxides as an environmental problem.

The claimed facility includes the new burners, a combustion air blower, changes to gas and air piping, gas and air control valves, and modifications to the existing electrical control system.

The burner manufacturer's data estimates a 37% reduction of NO_x, and a 39-69% reduction of CO. Based on this estimate, the applicant forecast usage is 132 hours per week, using 30 therms/hr of gas, and the net annual pollution reduction would be approximately 1110 pounds of No_x per year, and 252 pounds of CO per year.

Taxpayer Allowed Credit

ORS 315.304(4)

Criteria

The taxpayer who is allowed the credit is the:

a. Owner, including a contract purchaser, of the trade or business that uses the Oregon property requiring a pollution control facility to prevent or minimize pollution; or

b. Person who, as a lessee or pursuant to an agreement, conducts the trade or business that operates or utilizes such property.

Applied to this Application

Applicant is the **owner** and operator of the facility and the business located at the address above.

Eligibility

Timely Filing

2001 Edition
ORS 468.165 (6)
OAR 340-016-0007

Criteria

The applicant must submit the application within one year after the date that they completed construction of the facility. The final application, however, is not valid if the applicant submits the application before they complete construction or before they place the facility into operation.

Applied to this Application

The applicant submitted the application **within** the **one-year** filing requirement since they completed construction on 10/18/2002 and submitted the application on 5/15/2003. The applicant submitted the application after they completed construction and placed the facility into operation on 10/18/2002.

Purpose: Voluntary

ORS 468.155 (1)(a)(B)
OAR 340-016-0060(2)(b)

Criteria

The sole purpose, meaning the 'exclusive' purpose, of the claimed facility must be to prevent, control, or reduce a substantial quantity of air pollution.

"Air Pollution" is the presence in the outdoor atmosphere of one or more air contaminants, or any combination thereof, in sufficient quantities and of such characteristics and of a duration as are or are likely to be injurious to public welfare, to the health of human, plant or animal life or to property or to interfere unreasonably with enjoyment of life and property throughout such area of the state as shall be affected thereby. ORS 468A.005

Applied to this Application

The four newly installed Eclipse Thermjet burners reduce a substantial quantity of air pollution by diverting approximately 40% of Carbon Monoxide (CO) and 37% of Nitrogen Oxide (NOx) from being released into the atmosphere. The CO and NOx reduction is considered substantial compared to the previous control. The previous control was the original four combustion burners which

were built in 1982 were still capable of functioning as intended but released greater amounts of air pollutants due to lack of combustion control technology.

Method
ORS 468.155 (1)(b)(B)

Criteria
The prevention, control, or reduction must be accomplished by the disposal or elimination of air contaminants, air pollution, or air contamination sources; and the use of an air cleaning device as defined in ORS 468A.005.

"Air contaminant" is defined as any dust, fume, gas, mist, odor, smoke, vapor, pollen, soot, carbon, acid or particulate matter or any combination thereof.

"Air-cleaning device" is defined as any method, process or equipment that removes, reduces or renders less noxious air-contaminants prior to their discharge in the atmosphere.

Applied to this Application
CO and NOx **meet the definition of** an air contaminates. The Eclipse Thermjet burners **meet the definition of** an air-cleaning device.

Exclusions
ORS 468.155(3)
OAR 340-016-0070(3)

Criteria
The regulations provide a list of over 40 items excluded from the definition of a Pollution Control Facility. Items that do not meet the definition are ineligible for certification.

Applied to this Application
There were **no exclusions**.

Replacement
ORS 468.155(3)(e)

Criteria
The replacement or reconstruction of all or part of a facility that the State of Oregon has previously certified as a pollution control facility under ORS 468.170 is not eligible for the tax credit with two exceptions:

1) the applicant replaced the facility due to a DEQ, EPA, or regional air pollution authority requirement that is different than the requirement to construct the original facility; or

2) the applicant replaced the facility before the end of its useful life.

Applied to this Application
The State of Oregon issued 19 Pollution Control Facilities Tax Credit Certificates to the applicant at this location. Eighteen were for air pollution control devices. The claimed facility did not replace any of the previously certified pollution controls; therefore, the facility is **not a replacement** facility.

Maximum Credit
ORS 468.173(3)(g)

Criteria
The maximum tax credit is 35% if the applicant submitted the application between January 1, 2002 and December 31, 2008, inclusively; and the certified facility cost does not exceed $200,000.

Applied to this Application
The **maximum tax credit is 35%** because the applicant submitted the application on 5/15/2003, and the certified facility cost is $37,355.

Facility Cost

Subtractions Criteria

OAR 340-016-0070(1) The applicant must provide documents that substantiate the claimed facility cost. The claimed cost may not include:

a) the salvage value of a pre-existing facility if the applicant is replacing a facility;

b) the amount of any government grants received to pay part of the facility cost;

c) the present value of any other state tax credits for which the investment is eligible; and

d) ineligible costs as set forth in OAR 340-016-0070(3).

Applied to this Application
There are **no subtractions**.

$ Certification Criteria

ORS 468.170(1) The certified cost is limited to the actual cost of the pollution control portion of the facility. The certified cost may not exceed the taxpayer's own cash investment in the facility or portion of the facility.

Applied to this Application
Copies of **invoices substantiate** the claimed **cost**.

Referenced Section	Description of Ineligible Portion		Cost
		Claimed	$37,355
	There are no deductions		$0
		Certified	**$37,355**

Facility Cost Allocable to Pollution Control

% Certification Criteria

ORS 468.170(1) The certified "percentage allocable" is limited to the portion of the actual facility cost that is properly allocable to the prevention, control, or reduction of air pollution.

ORS 468.190 (3) If the facility cost does not exceed $50,000, the portion of the actual costs properly allocable to pollution control is the percentage of time the applicant uses the claimed facility to control air or water pollution.

Applied to this Application
The certified facility cost is **$37,355** and the applicant uses the facility **100%** of the time for pollution control.

Compliance

ORS 468.180(1) Criteria

The Environmental Quality Commission may not issue a certificate unless the applicant constructed or installed the claimed facility in accordance with the applicable provisions of ORS 454.010 to 454.040, 454.205 to 454.255, 454.505 to 454.535, 454.605 to 454.755, ORS chapters 459, 459A, 465, 466 and 467 and ORS chapters 468, 468A and 468B. This includes the rules and standards adopted to implement these provisions.

Applied to this Application

The DEQ staff assigned to the source is Gregg Dahmen in the Northwest region. Mr. Dahmen affirmed the applicant's statement that the site is in compliance with Department rules and statutes, and with EQC orders.

DEQ issued the following permits to the applicant at this site:

- NPDES No 1200-COLS issued December 22, 1999; and
- Air Contaminant Discharge Permit No. 26-1869, issued September 24, 2002.

Reviewer: Maggie Vandehey, DEQ

State of Oregon
Department of
Environmental
Quality

Tax Credit Review Report

Pollution Control Facility: Air
Final Certification
ORS 468.150 -- 468.190
OAR 340-016-0005 -- 340-016-0080

Director's Recommendation

Approve Application No. **6590 @ Reduced Cost**

Applicant: **Pope & Talbot, Inc.**

Certification of:

Facility Cost		$197,417
Percentage Allocable	X	100%
Maximum Percentage	X	35%
Tax Credit		**$69,096**

Certificate Period: **10 years**

Applicant Identification

1500 SW First Avenue, Suite 200
Portland, OR 97201

Organized as: **C Corp.**
Taxpayer ID: **94-0777139**

Facility Identification

30480 America Drive
Halsey, OR 97348

The certificate will identify the facility as:

Venturi/Packed Column wet scrubber for the smelt dissolving tank

Technical Information

Pope & Talbot, Inc. manufactures bleached kraft pulp at its Halsey mill. The applicant produces pulp by cooking wood chips. The smelt tank recovers a portion of the chemicals used in the cooking process. The fumes from the smelt tank include the regulated air pollutants total reduced sulfur (TRS) and total suspended particulate (TSP). The TSP leaving the smelt tank vent creates visible emissions called opacity. The applicant replaced an existing smelt dissolving tank scrubber that allowed excessive opacity emissions. The applicant claims a new Type P Venturi/packed column wet scrubber manufactured by Amerex Industries capable of treating 22,000 cubic feet of air per minute. The scrubber system includes a 125 hp fan, a 230 gallons per minute water recirculation pump, an exhaust stack, and an explosion damper. The manufacturers designed the claimed facility to reduce TSP to less than 0.1 grains per cubic foot of exhausted air. The manufacturer estimates TRS will be about 0.02 pounds per ton of waste-solids produced during the cooking process. The applicant estimates that the TSP reduction will be about 8 tons per year. The opacity will not exceed 15%.

Taxpayer Allowed Credit

ORS 315.304(4)

Criteria

The applicant must be:

a. Owner, including a contract purchaser, of the trade or business that uses the Oregon property requiring a pollution control facility to prevent or minimize pollution; or

b. Person who, as a lessee or pursuant to an agreement, conducts the trade or business that operates or utilizes such property.

c. A person who, as an owner, including a contract purchaser, or **lessee**, owns or **leases** a pollution control **facility** that is used in a business that is engaged in a production activity **described in 40 C.F.R. 430.20** (as of July 1, 1998).

Applied to this Application

The applicant **leases the claimed facility** from Wilmington Trust Company. The applicant uses the claimed facility in a bleached kraft pulp manufacturing process described in 40 C.F.R. 430.20.

Eligibility

Timely Filing

ORS 468.165(6)

Criteria

The applicant must submit the application within one year after the date that they completed construction of the facility. The final application, however, is not valid if the applicant submits the application before they complete construction or before they place the facility into operation.

Applied to this Application

The applicant filed the application **within** the **one-year filing period** because they completed construction on 10/1/2002, placed the facility into operation on 11/1/2002, and submitted the application on 9/3/2003. Therefore, the applicant submitted the application after they completed construction and after they placed the facility into operation.

Purpose: Required

ORS 468.155 (1)(a)(A)

OAR 340-016-0060(2)(a)

Criteria

The principal purpose of the claimed facility must be to comply with a requirement imposed by DEQ, EPA, or LRAPA to prevent, reduce, or control air pollution. That principal purpose must be the most important or primary purpose of the facility. The facility must have only one primary purpose.

"Air Pollution" is the presence in the outdoor atmosphere of one or more air contaminants, or any combination thereof, in sufficient quantities and of such characteristics and of a duration as are or are likely to be injurious to public welfare, to the health of human, plant or animal life or to property or to interfere unreasonably with enjoyment of life and property throughout such area of the state as shall be affected thereby. ORS 468A.005

Applied to this Application
The applicant claims the facility has a **principal purpose**. The Type P Venturi/packed column wet scrubber and its support equipment complies with the applicant's Air Contaminant Discharge Permit imposed by DEQ. The primary or most important purpose of the claimed facility is to reduce air pollution.

Method
ORS 468.155 (1)(b)(B)

Criteria
The prevention, control, or reduction must be accomplished by the disposal or elimination of air contaminants, air pollution, or air contamination sources; and the use of an air cleaning device as defined in ORS 468A.005.

> "Air contaminant" means a dust, fume, gas, mist, odor, smoke, vapor, pollen, soot, carbon, acid or particulate matter or any combination thereof.
>
> "Air-cleaning device" means any method, process or equipment, which removes, reduces or renders less noxious air contaminants prior to their discharge in the atmosphere.

Applied to this Application
Particulate and opacity emissions **meet the definition of air pollution**. DEQ regulates particulate and opacity emissions in the applicant's air contaminant discharge permit. The Venturi/packed column wet scrubber **meets the definition of an air cleaning device**.

Exclusions
ORS 468.155(3)
OAR 340-016-0070(3)

Criteria
The regulations provide a list of more than 40 items excluded from the definition of a Pollution Control Facility. One of the listed items is "Any distinct portion of a pollution control facility that makes an insignificant contribution to the principal or sole purpose of the facility..." Items that do not meet the definition are ineligible for certification.

Applied to this Application
The applicant included a 36" diameter explosion damper that makes an insignificant contribution to the purpose of the facility under the *Purpose: Required* section above. The explosion damper is not required for pollution control. The Department subtracted the associated costs from the claimed facility cost under the *Facility Cost* section below.

Replacement
ORS 468.155 (3)(e)

Criteria
The replacement or reconstruction of all or part of a facility that has previously been certified as a pollution control facility under ORS 468.170 is not eligible for the tax credit with two exceptions: 1) the facility was replaced due to a requirement imposed by DEQ or EPA that is different than the requirement to construct the original facility; or 2) the facility was replaced before the end of its useful life.

Applied to this Application
The State of Oregon issued three certificates to the applicant. Two of the certificates were for controlling air pollution. The claimed facility **is not a**

replacement to one of the previously certified facilities.

Maximum Credit Criteria
ORS 468.173(3)(h) The maximum tax credit is 35% if the applicant submitted the application between January 1, 2002 and December 31, 2008, inclusively, and the facility is located within a designated distressed area as defined by the Economic and Community Development Department in ORS 285A.010.

Applied to this Application
The **maximum tax credit is 35%** because the applicant submitted the application on 9/3/2003 and the facility is located in a designated economic distressed area as shown in the attachment to this report.

Facility Cost

Copies of invoices substantiated the claimed facility cost.

Referenced Section	Description of Ineligible Portion		Cost
		Claimed	$201,807
	Exclusions 36" diameter explosion damper		$ (4,390)
		Certified	**$197,417**

Facility Cost Allocable to Pollution Control

% Certification Criteria
ORS 468.170(1) The certified "percentage allocable" is limited to the portion of the actual facility cost that is properly allocable to the prevention, control, or reduction of air pollution.

ORS 468.190(1) The following factors establish the portion of costs properly allocable to pollution control facilities that cost more than $50,000.

a. The extent to which the applicant uses the facility to recover and convert waste products into a salable or usable commodity;

b. The estimated annual percent return on the investment in the facility;

c. Any alternative methods, equipment, and costs for achieving the same pollution control objective;

d. Any related savings or increase in costs that occur or may occur as a result of the installation of the facility; and

e. Any **other relevant factors**.

Applied to this Application
The claimed facility produces no salable or usable commodities. The claimed facility does not have a positive return on the investment; therefore, **100% of the facility cost is allocable to pollution control**. The functional life of the facility that the Department would have used to calculate the return on investment is **20** years. The applicant did not investigate an alternative technology because the claimed facility is the best available technology. There were no related savings

associated with the claimed facility but there are increased costs. There are no other relevant factors.

Compliance

ORS 468.180(1) Criteria

The Environmental Quality Commission may not issue a certificate unless the applicant constructed or installed the claimed facility in accordance with the applicable provisions of ORS 454.010 to 454.040, 454.205 to 454.255, 454.505 to 454.535, 454.605 to 454.755, ORS chapters 459, 459A, 465, 466 and 467 and ORS chapters 468, 468A and 468B. This includes the rules and standards adopted to implement these provisions.

Applied to this Application

The applicant states the facility and site are in compliance with Department rules and statutes, and with EQC orders. The DEQ staff assigned to the source is Jim Boylan from the Western Region. Mr. Boylan confirmed the applicant's statement.

DEQ issued the following permits to the applicant at this site:

- Air Permit No. 22-3501 issued on 5/22/2000;
- Wastewater Permit No. 101114 issued on 6/30/1993; and
- Stormwater Permit No. 1200-Z issued on 7/22/1997.

Reviewers: PBS Engineering and Environmental
Maggie Vandehey, DEQ

State of Oregon
Department of
Environmental
Quality

Tax Credit Review Report

Pollution Control Facility: Air
Final Certification
ORS 468.150 -- 468.190
OAR 340-016-0005 -- 340-016-0080

Director's Recommendation

Approve Application No. **6626**

Applicant: **Columbia Steel Casting Co., Inc.**

Certification of:		
Facility Cost		$8,750
Percentage Allocable	X	100%
Maximum Percentage	X	35%
Tax Credit		**$3,063**

Certificate Period: **7 years**

Applicant Identification

PO Box 83095
Portland, OR 97283

Organized as: **S Corp.**
Taxpayer ID: **93-0336095**

Facility Identification

10425 N. Bloss Avenue
Portland, OR 97203

The certificate will identify the facility as:

1980 International Harvester Dust Transfer Truck. VIN No. D3177KGB11602.

Technical Information

Columbia Steel Casting produces alloy steel castings. The manufacturing process generates approximately 2,000 tons of dust per year that several baghouses capture. The applicant purchased a 1980 International Harvester ready mix cement truck to collect, wet, and transport the dust from the baghouses to the applicant's on-site landfill. The applicant adds water to the dust in the mixing truck. This causes the dust to bind together and prevents airborne particulate matter (PM) emissions during transporting and dumping at the landfill. The landfill is located in close proximity to the backhouse.

Taxpayer Allowed Credit

ORS 315.304(4) Criteria

The taxpayer who is allowed the credit is the:

(a) **Owner**, including a contract purchaser, of the trade or **business** that **uses the Oregon property** requiring a pollution control facility to prevent or minimize pollution; or

(b) Person who, as a lessee or pursuant to an agreement, conducts the trade or business that operates or utilizes such property.

Applied to this Application

Applicant is the owner of the business that uses the claimed facility.

Eligibility

Timely Filing

2001 Edition
ORS 468.165(6)

Criteria

The applicant must submit the application within one year after the date that they completed construction of the facility. The final application, however, is not valid if the applicant submits the application before they complete construction or before they place the facility into operation.

Applied to this Application

The applicant **filed** the application **within** the **one-year filing** requirement since the applicant completed construction on 5/30/2002 and submitted the application on 5/30/2003. The applicant submitted the application after they completed construction and placed the facility into operation on 5/31/2002.

Purpose: Required

ORS 468.155 (1)(a)(A)
OAR 340-016-0060(2)(a)

Criteria

The principal purpose of the claimed facility must be to comply with a requirement imposed by DEQ, EPA, or LRAPA to prevent, reduce, or control air pollution. That principal purpose must be the most important or primary purpose of the facility. The facility must have only one primary purpose.

> "Air Pollution" is the presence in the outdoor atmosphere of one or more air contaminants, or any combination thereof, in sufficient quantities and of such characteristics and of a duration as are or are likely to be injurious to public welfare, to the health of human, plant or animal life or to property or to interfere unreasonably with enjoyment of life and property throughout such area of the state as shall be affected thereby. ORS 468A.005

Applied to this Application

The dust mixing and transport truck **complies with** the DEQ imposed requirement in the applicant's Air Contaminant Discharge **Permit** that prohibits the discharge of fugitive PM emissions to the atmosphere. The Department determined that the main value in the truck is the mixing mechanism. The primary or most important purpose of the claimed facility is to prevent air pollution.

Method
ORS 468.155 (1)(b)(B)

Criteria
The prevention, control, or reduction must be accomplished by the disposal or elimination of air contaminants, air pollution, or air contamination sources; and the use of an air cleaning device as defined in ORS 468A.005.

"Air contaminant" means any dust, fume, gas, mist, odor, smoke, vapor, pollen, soot, carbon, acid or particulate matter or any combination thereof.

"Air-cleaning device" means any method, process or equipment that removes, reduces or renders less noxious air-contaminants prior to their discharge in the atmosphere.

Applied to this Application
Particulate matter **meets the definition** of an air contaminant as defined by ORS 468A.005. The dust wetting and transport truck meets the definition of an air-cleaning device because it prevents the discharge of air contaminates to the atmosphere.

Exclusions
ORS 468.155(3)
OAR 340-016-0070(3)

Criteria
The regulations provide a list of more than 40 items excluded from the definition of a Pollution Control Facility. Items that do not meet the definition are ineligible for certification.

Applied to this Application
There are **no exclusions**.

Maximum Credit
ORS 468.173(3)(f)

Criteria
The maximum tax credit is 35% if the applicant submitted the application between January 1, 2002 and December 31, 2008, inclusively; and the certified facility cost does not exceed $200,000.

Applied to this Application
The **maximum tax credit is 35%** because the applicant submitted the application on 5/30/2003, and the recommended certified facility cost is $8,750.

Facility Cost

Subtractions Criteria

OAR 340-016-0070(1) The applicant must provide documents that substantiate the claimed facility cost. The claimed cost may not include:

a) the salvage value of a pre-existing facility if the applicant is replacing a facility;

b) the amount of any government grants received to pay part of the facility cost;

c) the present value of any other state tax credits for which the investment is eligible; and

d) ineligible costs as set forth in OAR 340-016-0070(3).

Applied to this Application
There are **no subtractions**.

$ Certification Criteria

ORS 468.170(1) The certified cost is limited to the actual cost of the pollution control portion of the facility. The certified cost may not exceed the taxpayer's own cash investment in the facility or portion of the facility.

Applied to this Application
Copies of **invoices substantiate** the claimed **cost**.

Referenced Section	Description of Ineligible Portion		Cost
		Claimed	$8,750
	There are no deductions		
		Certified	**$8,750**

Facility Cost Allocable to Pollution Control

% Certification Criteria

ORS 468.170(1) The certified "percentage allocable" is limited to the portion of the actual facility cost that is properly allocable to the prevention, control, or reduction of air pollution. .

ORS 468.190 (3) If the cost of the facility (or facilities certified under one certificate) does not exceed $50,000, the portion of the actual costs properly allocable shall be in the proportion that the ratio of the time the facility is used for prevention, control or reduction of air, water or noise pollution or solid or hazardous waste or to recycling or appropriately disposing of used oil bears to the entire time the facility is used for any purpose.

Applied to this Application
The certified facility cost is **$8,750** and the applicant uses the facility **100%** of the time for pollution control.

Compliance

ORS 468.180(1) Criteria

The Environmental Quality Commission may not issue a certificate unless the applicant constructed or installed the claimed facility in accordance with the applicable provisions of ORS 454.010 to 454.040, 454.205 to 454.255, 454.505 to 454.535, 454.605 to 454.755, ORS chapters 459, 459A, 465, 466 and 467 and ORS chapters 468, 468A and 468B. This includes the rules and standards adopted to implement these provisions.

Applied to this Application

The DEQ staff assigned to the source is Gregg Dahmen in the Northwest region. Mr. Dahmen affirmed the applicant's statement that the facility and site are in compliance with Department rules and statutes, and with EQC orders.

DEQ issued the following permits to the applicant at this site:

- NPDES No 1200-COLS issued December 22, 1999; and
- Air Contaminant Discharge Permit No. 26-1869, issued September 24, 2002.

Reviewers: PBS Engineering and Environmental
Maggie Vandehey, DEQ

State of Oregon
Department of
Environmental
Quality

Tax Credit Review Report

Pollution Control Facility: Field Burning
Final Certification
ORS 468.150 -- 468.190
OAR 340-016-0005 -- 340-016-0080

Director's Recommendation

Approve Application No. **6432 @ Reduced Cost & Percentage**

Applicant: **Frank Hoekstre**

Certification of:

Facility Cost		$213,439
Percentage Allocable	X	96%
Maximum Percentage	X	50%
Tax Credit		**$102,451**

Certificate Period: **10 years**

Applicant Identification

PO Box 139
Dallas, OR 97338

Organized as: **Sole Proprietor**
Taxpayer ID: **93-1093951**

Facility Identification

13895 Beck Road
Dallas, OR 97338

The certificate will identify the facility as:

One 140' x 140' x 24' pole building with concrete floor and loading dock

Technical Information

Franklin Hoekstre compresses and stores grass-seed straw from area growers. The applicant claims Building C to protect the straw from inclement weather until it can be exported. Building C is capable of storing 2,400 tons of straw. The loading dock allows the applicant's clients to unload the straw for storage and to load trucks with the straw for shipment overseas.

Taxpayer Allowed Credit

ORS 315.304(4)

Criteria

The taxpayer who is allowed the credit is the:

a. **Owner,** including a contract purchaser, **of the** trade or **business** that uses the Oregon property requiring a pollution control facility to prevent or minimize pollution; or

b. Person who, as a lessee or pursuant to an agreement, conducts the trade or business that operates or utilizes such property.

Applied to this Application

Applicant is the **owner of the business** that uses the building.

Eligibility

Timely Filing

ORS 468.173(1)
1999 Edition
OAR 340-016-0007

Criteria

The applicant must submit the application within two years after the date that they complete construction of the facility if that date was on or before December 31, 2001. The applicant must also submit the final application after they complete construction and place the facility into operation.

Applied to this Application

The applicant submitted the application **within the two-year** filing period since they completed construction on 10/31/2001 and submitted the application on 1/17/2003. The applicant submitted the application after they completed construction and after they placed the facility into operation on 10/15/2001.

Purpose: Required

ORS 468.155 (1)(a)(A)
OAR 340-266-0060 (4)(A)(B)(C)

Criteria

The principal purpose of the claimed facility must be to reduce air pollution by reducing the maximum acreage to be open-burned in compliance with OAR 340-266-0060 (Acreage limitations, allocations).

The facility shall **reduce** or eliminate:

a. Open field burning and may include equipment, facilities, and land for gathering, densifying, handling, storing, transporting and incorporating grass straw or straw based products;

b. Air quality impacts from open field burning and may include propane burners or mobile field sanitizers; or

c. **Grass seed acreage that requires open field burning**.

Applied to this Application

The applicant claims that the primary and most important purpose of the building and loading dock is to comply with OAR 340-266-0060 by reducing the maximum acreage that will be open-burned and to reduce air pollution. The primary and most important purpose of the ramp to the scales is for billing purposes rather than to eliminate open field burning. The Department describes this subtraction under the *Exclusions* section below.

Method

ORS 468.150

Criteria

As approved by the Environmental Quality Commission, alternative methods for field sanitation, and straw utilization and disposal; and persons purchasing and utilizing such methods are eligible for a "pollution control facilities tax credit."

ORS 340-016-0060 (4)(b)

The facility reduces or eliminates:

a. Open field burning and may include equipment, **facilities**, and land for gathering, densifying, handling, **storing**, transporting and incorporating grass straw or straw based products; or

b. Air quality impacts from open field burning and may include propane burners or mobile field sanitizers; or

c. Grass seed acreage that requires open field burning. The facility may include:

- Production of alternative crops that do not require open field burning;
- Production of rotation crops that support grass seed production without open field burning; or
- Drainage tile installations and new crop processing facilities.

Applied to this Application
The straw storage building and loading dock are an **approved alternative method** for field sanitation and straw utilization and disposal. The effects of field burning **meet the definition of** an air contaminant as defined by ORS 468A.005:

> Dust, fume, gas, mist, odor, smoke, vapor, pollen, soot, carbon, acid or particulate matter or any combination thereof.

Exclusions
ORS 468.155 (3)
OAR 340-016-0070(3)

Criteria
The regulations provide a list of over 40 items excluded from the definition of a Pollution Control Facility. Items that do not meet the definition are ineligible for certification.

Applied to this Application
ORS 468.155 specifically **excludes parking areas** and **roadways**; and **insignificant contributions** to the pollution control purpose described under the *Purpose: Required* section above. The Department subtracted the cost of these items from the claimed cost under the *Facility Cost* section below.

Replacement
ORS 468.155(3)(e)

Criteria
The replacement or reconstruction of all or part of a facility that has previously been certified as a pollution control facility under ORS 468.170 is not eligible for the tax credit with two exceptions:

1. the facility was replaced due to a requirement imposed by DEQ or EPA that is different than the requirement to construct the original facility; or
2. the facility was replaced before the end of its useful life.

Applied to this Application
The State of Oregon issued two previous tax credit certifications to the applicant. The claimed facility does not replace any previously certified building.

Maximum Credit Criteria

ORS 468.173(1) The applicable percentage of the certified cost of a facility shall be 50% if the applicant began construction or installation of the facility prior to January 1, 2001, and completed prior to January 1, 2004.

Applied to this Application

The **maximum tax credit is 50%** because the applicant began construction on 7/13/2000 and completed construction on 10/31/2001.

Facility Cost

Copies of invoices substantiated the claimed facility cost:

Referenced Section	Description of Ineligible Portion		Cost
		Claimed	**$243,119**
Facility Cost Exclusions	Work performed on a Building A		-$2,558
	Ramp to scales		-$1,697
	Roadway and parking		-$25,425
		Certified	**$213,439**

Percentage Allocable

% Certification

ORS 468.170(1) Criteria

The certified "percentage allocable" is limited to the portion of the actual facility cost that is properly allocable to the prevention, control, or reduction of air pollution.

ORS 468.190(2) The portion of actual costs properly allocable shall be from zero to 100 percent in increments of one percent. If zero percent, the commission shall issue an order denying certification.

ORS 468.190(1) The following factors establish the portion of costs properly allocable to pollution control.

a. The extent to which the applicant uses the facility to recover and convert waste products into a salable or usable commodity;

b. The estimated annual percent return on the investment in the facility;

c. Any alternative methods, equipment, and costs for achieving the same pollution control objective;

d. Any related savings or increase in costs that occur or may occur as a result of the installation of the facility; and

e. Any other relevant factors.

Applied to this Application

Grass-seed straw is a salable or usable commodity when there is an available market. Exporters, such as Quality Trading Company, pay the applicant $8 a ton

to store the straw until there is a market. The applicant included the revenue from the straw at the building's full capacity in calculating the facility's return on investment (ROI). The functional life of the facility used in calculating the Percentage of the Facility Cost Allocable to Pollution Control is **20** years. The percentage of the cost allocable to pollution control is **96%** when calculated according to the standard method under OAR 340-016-0075(3). The storage building is an alternative method to open-field burning grass-seed straw. The applicant will incur increased costs in operating and maintaining the claimed building. The applicant included these increased costs in the ROI calculation. (The applicant did not include the depreciation expense because taxpayers may use the tax credit AND depreciation.) There are no other relevant factors.

Compliance

The applicant claims the facility and site comply with Department rules and statutes. DEQ has not issued any permits to the applicant at this site.

Reviewer: Maggie Vandehey, DEQ

State of Oregon
Department of
Environmental
Quality

Tax Credit Review Report

Pollution Control Facility: Field Burning
Final Certification
ORS 468.150 -- 468.190
OAR 340-016-0005 -- 340-016-0080

Director's Recommendation

Approve Application No. **6433 @ Reduced Cost & Percentage**

Applicant: **Frank Hoekstre**

Certification of:

Facility Cost		$521,645
Percentage Allocable	X	77%
Maximum Percentage	X	50%
Tax Credit		**$200,833**

Certificate Period: **10 years**

Applicant Identification

PO Box 139
Dallas, OR 97338

Organized as: **Sole Proprietor**
Taxpayer ID: **93-1093951**

Facility Identification

13895 Beck Road
Dallas, OR 97338

The certificate will identify the facility as:

216' x 60' x 24' straw compressing and storage building (Building A) and a 65' x 55' loading dock

Technical Information

Franklin Hoekstre compresses and stores grass-seed straw from area growers. The growers flail chop the straw before trucking it to the applicant. The applicant compresses the straw into bales and then stores it out of inclement weather until it can be exported. The applicant claims a pole building identified as Building A. Building A houses the applicant's straw compressing operation and is capable of storing up to 400 tons of straw. This building is one of a series of buildings used for storing straw. The applicant claims the pole building, the loading dock, and a driveway/parking area. The applicant also claims the building's electrical service, which is a major expenditure necessary to support the exporter-owned baler. The loading dock allows the area growers to unload their straw for compressing and storage. The loading dock also allows exporters to load straw into trucks for shipment overseas.

Taxpayer Allowed Credit

ORS 315.304(4)

Criteria

The taxpayer who is allowed the credit is the:

a. **Owner,** including a contract purchaser, **of the** trade or **business** that uses the Oregon property requiring a pollution control facility to prevent or minimize pollution; or

b. Person who, as a lessee or pursuant to an agreement, conducts the trade or business that operates or utilizes such property.

Applied to this Application

Applicant is the **owner of the business** that uses the building.

Eligibility

Timely Filing

ORS 468.173(1)
1999 Edition
OAR 340-016-0007

Criteria

The applicant must submit the application within two years after the date that they complete construction of the facility if that date was on or before December 31, 2001. The applicant must also submit the final application after they complete construction and place the facility into operation.

Applied to this Application

The applicant submitted the application **within the two-year** filing period since they completed construction on 12/27/2000 and submitted the application on 10/18/2002. The applicant submitted the application after they completed construction and after they placed the facility into operation on 1/1/2001.

Purpose: Required

ORS 468.155 (1)(a)(A)
OAR 340-266-0060 (4)(A)(B)(C)

Criteria

The principal purpose of the claimed facility must be to reduce air pollution by reducing the maximum acreage to be open-burned in compliance with OAR 340-266-0060 (Acreage limitations, allocations).

The facility shall **reduce** or eliminate:

a. Open field burning and may include equipment, facilities, and land for gathering, densifying, handling, storing, transporting and incorporating grass straw or straw based products;

b. Air quality impacts from open field burning and may include propane burners or mobile field sanitizers; or

c. **Grass seed acreage that requires open field burning.**

Applied to this Application

The primary and most important purpose of the building and the loading dock is to comply with OAR 340-266-0060 by reducing the maximum acreage that will be open-burned and to reduce air pollution.

The primary and most important purpose of the safety rails are to comply with Occupational Safety & Health Administration (OSHA) requirements rather than to eliminate open field burning. The Department subtracted the cost of the safety rails from the claimed cost under the *Facility Cost* section below.

Method
ORS 468.150

Criteria
The Environmental Quality Commission has approved the alternative method for field sanitation, straw utilization, and disposal.

ORS 340-016-0060 (4)(b)

The facility reduces or eliminates:

a. Open field burning and may include equipment, **facilities**, and land for gathering, **densifying**, handling, **storing**, **transporting** and incorporating grass straw or straw based products; or

b. Air quality impacts from open field burning and may include propane burners or mobile field sanitizers; or

c. Grass seed acreage that requires open field burning. The facility may include:

- Production of alternative crops that do not require open field burning;
- Production of rotation crops that support grass seed production without open field burning; or
- Drainage tile installations and new crop processing facilities.

Applied to this Application
The straw compressing and storage building with the electrical loading dock are an **approved alternative method** for field sanitation and straw utilization and disposal. The effects of field burning **meet the definition of** an air contaminant as defined by
ORS 468A.005:

> Dust, fume, gas, mist, odor, smoke, vapor, pollen, soot, carbon, acid or particulate matter or any combination thereof.

Exclusions
ORS 468.155 (3)
OAR 340-016-0070(3)

Criteria
The regulations provide a list of over 40 items excluded from the definition of a Pollution Control Facility. Items that do not meet the definition are ineligible for certification.

Applied to this Application
ORS 468.155 specifically **excludes parking areas** and **roadways**; and **insignificant contributions** to the pollution control purpose described under the *Purpose: Required* section above. The Department subtracted the cost of these items from the claimed cost under the *Facility Cost* section below.

Replacement
ORS 468.155(3)(e)

Criteria
The replacement or reconstruction of all or part of a facility that has previously been certified as a pollution control facility under ORS 468.170 is not eligible

for the tax credit with two exceptions:

1. the facility was replaced due to a requirement imposed by DEQ or EPA that is different than the requirement to construct the original facility; or
2. the facility was replaced before the end of its useful life.

Applied to this Application
The State of Oregon issued two previous tax credit certifications to the applicant. The claimed facility **does not replace** any previously certified building.

Maximum Credit
ORS 468.173(1)

Criteria
The applicable percentage of the certified cost of a facility shall be 50% if the applicant began construction or installation of the facility prior to January 1, 2001, and completed it prior to January 1, 2004.

Applied to this Application
The **maximum tax credit is 50%** because the applicant began construction on 11/15/1999 and completed construction on 10/18/2002.

Facility Cost

Subtractions
OAR 340-016-0070(1)

Criteria
The applicant must provide documents that substantiate the claimed facility cost. The claimed cost may not include:

a) the salvage value of a pre-existing facility if the applicant is replacing a facility;

b) the amount of any government grants received to pay part of the facility cost;

c) the present value of any other state tax credits for which the investment is eligible; and

d) ineligible costs as set forth in OAR 340-016-0070(3).

Applied to this Application
There are **no subtractions**.

$ Certification
ORS 468.170(1)

Criteria
The certified cost is limited to the actual cost of the pollution control portion of the facility. The certified cost may not exceed the taxpayer's own cash investment in the facility or portion of the facility.

Applied to this Application
Copies of invoices and canceled checks substantiate the claimed facility cost.

Referenced Section	Description of Ineligible Portion		Cost
		Claimed	**$538,747**
Facility Cost	Invoice transferrred from App. # 6432		$2,558
		Adjusted	$541,305
Purpose	Railing		-$1,162
Exclusions	Repairs		-$115
	Roadway & Parking		-$18,384
		Certified	**$521,645**

Percentage Allocable

% Certification

ORS 468.170(1) Criteria

The certified "percentage allocable" is limited to the portion of the actual facility cost that is properly allocable to the prevention, control, or reduction of air pollution.

ORS 468.190(2) The portion of actual costs properly allocable shall be from zero to 100 percent in increments of one percent. If zero percent, the commission shall issue an order denying certification.

ORS 468.190(1) The following factors establish the portion of costs properly allocable to pollution control facilities that cost more than $50,000.

a. The extent to which the applicant uses the facility to recover and convert waste products into a salable or usable commodity;

b. The estimated annual percent return on the investment in the facility;

c. Any alternative methods, equipment, and costs for achieving the same pollution control objective;

d. Any related savings or increase in costs that occur or may occur as a result of the installation of the facility; and

e. Any other relevant factors.

Applied to this Application

Grass-seed straw is a salable or usable commodity when there is an available market. Exporters, such as Quality Trading Company, pay the applicant $8 a ton to store the straw until there is a market. The applicant included the revenue from the straw at the building's full capacity and revenue from the compressing operation in the return on investment calculation. The functional life of the facility used in calculating the Percentage of the Facility Cost Allocable to Pollution Control is **20** years. The percentage of the cost allocable to pollution control is **77%** when calculated according to the standard method under OAR 340-016-0075(3). The storage building is an alternative method to open-field burning grass-seed straw. The applicant will incur increased costs in operating and maintaining the claimed building. The applicant included these increased costs in the ROI calculation. (The applicant did not include the depreciation

expense because taxpayers may use the tax credit AND depreciation.) There are no other relevant factors.

Compliance The applicant claims the facility and site comply with Department rules and statutes. DEQ has not issued any permits to the applicant at this site.

Reviewer: Maggie Vandehey, DEQ

State of Oregon
Department of
Environmental
Quality

Tax Credit Review Report

Pollution Control Facility: Field Burning
Final Certification
ORS 468.150 -- 468.190
OAR 340-016-0005 -- 340-016-0080

Director's Recommendation

Approve Application No. **6560**

Applicant: **Roger E. Neuschwander**

Certification of:

Facility Cost		$6,000
Percentage Allocable	X	100%
Maximum Percentage	X	35%
Tax Credit		**$2,100**

Certificate Period: **10 years**

Applicant Identification

31983 Harris Drive
Harrisburg, OR 97446

Organized as: **Sole Proprietor**
Taxpayer ID: **93-0727909**

Facility Identification

Exit off I-5 at 209, N on Rowland
Harrisburg, OR 97446

The certificate will identify the facility as:

One - Bush Hog Flex-wing Rotary Cutter, Model CR20F, Serial # 200B1

Technical Information

Roger Neuschwander is a grass seed producer who owns 200 acres and leases 885 acres. The grower currently cultivates all acreage under perennial grass seed production. The applicant claims a new Bush Hog flex-wing rotary cutter as an alternative to open field burning. The new equipment and the building claimed on application number 6561 allow the applicant to remove 985 acres under perennial grass seed production from being open field burned. The applicant burned and baled as much acreage of straw as permitted in the past. The applicant last burned 355 acres in the last three years, 53 of the acres were propane flame burned in 2003.

Taxpayer Allowed Credit

ORS 315.304(4)

Criteria

The taxpayer who is allowed the credit is the:

(a) **Owner**, including a contract purchaser, **of** the trade or **business that uses** the Oregon property requiring a pollution control facility to prevent or minimize pollution; or

(b) Person who, as a lessee or pursuant to an agreement, conducts the trade or business that operates or utilizes such property.

Applied to this Application

Applicant is the **owner** of the business that uses the claimed facility.

Eligibility

Timely Filing

2001 Edition
ORS 468.165(6)

Criteria

The applicant must submit the application within one year after the date that they completed construction of the facility. The final application, however, is not valid if the applicant submits the application before they complete construction and place the facility into operation.

Applied to this Application

The applicant submitted the application **within** the **one-year** filing **requirement** by completing construction on 4/5/2003 and submitting the application on 7/28/2003. The applicant submitted the application after they completed construction and placed the facility into operation on 7/20/2003.

Purpose: Required

ORS 468.155 (1)(a)(A)
OAR 340-016-0060 (4)(b)

Criteria

The principal purpose of the claimed facility must be to reduce air pollution by reducing the maximum acreage to be open-burned in compliance with OAR 340-016-0060 (Acreage limitations, allocations).

The facility shall reduce or eliminate:

a. Open field burning and may include **equipment**, facilities, and land for **gathering**, densifying, **handling**, storing, transporting and incorporating **grass straw** or straw based products;

b. Air quality impacts from open field burning and may include propane burners or mobile field sanitizers; or

c. Grass seed acreage that requires open field burning.

Applied to this Application

The Bush Hog rotary cutter reduces air pollution by complying with OAR 340-016-0060.

Method
ORS 468.150

Criteria
As approved by the Environmental Quality Commission, alternative methods for field sanitation, and straw utilization and disposal; and persons purchasing and utilizing such methods are eligible for a "pollution control facilities tax credit."

ORS 340-016-0060 (4)(b)

The facility reduces or eliminates:

a. Open field burning and may include **equipment**, facilities, and land for **gathering**, densifying, **handling**, storing, transporting and incorporating grass straw or straw based products; or

b. Air quality impacts from open field burning and may include propane burners or mobile field sanitizers; or

c. Grass seed acreage that requires open field burning. The facility may include:

- Production of alternative crops that do not require open field burning;
- Production of rotation crops that support grass seed production without open field burning; or
- Drainage tile installations and new crop processing facilities.

Applied to this Application
The Bush Hog rotary cutter is an **approved alternative method** for field sanitation and straw utilization and disposal. The effects of field burning **meet the definition of** an air contaminant as defined by ORS 468A.005:

> Dust, fume, gas, mist, odor, smoke, vapor, pollen, soot, carbon, acid or particulate matter or any combination thereof.

Exclusions
ORS 468.155(3)
OAR 340-016-0070(3)

Criteria
The regulations provide a list of over 40 items excluded from the definition of a Pollution Control Facility. Items that do not meet the definition are ineligible for certification.

Applied to this Application
There are **no** exclusions.

Replacement
ORS 468.155(3)(e)

Criteria
The replacement or reconstruction of all or part of a facility that the State of Oregon has previously certified as a pollution control facility under ORS 468.170 is not eligible for the tax credit with two exceptions:

1) The applicant replaced the facility due to a DEQ, EPA, or regional air pollution authority requirement that is different than the requirement to construct the original facility; or

2) The applicant replaced the facility before the end of its useful life.

Applied to this Application
The State of Oregon has issued six Pollution Control Facilities Tax Credit Certificates to the applicant at this location; however, the claimed facility **does not replacement** a previously certified facility.

Maximum Credit
ORS 468.173(3)(f)

Criteria
The maximum tax credit is 35% if the applicant submitted the application between January 1, 2002 and December 31, 2008, inclusively; and the certified facility cost does not exceed $200,000.

Applied to this Application
The **maximum tax credit is 35%** because the applicant submitted the application on 7/28/2003, and the certified facility cost is $6,000.

Facility Cost

Subtractions
OAR 340-016-0070(1)

Criteria
The applicant must provide documents that substantiate the claimed facility cost. The claimed cost may not include:

a) the salvage value of a pre-existing facility if the applicant is replacing a facility;

b) the amount of any government grants received to pay part of the facility cost;

c) the present value of any other state tax credits for which the investment is eligible; and

d) ineligible costs as set forth in OAR 340-016-0070(3).

Applied to this Application
There are **no subtractions**.

$ Certification
ORS 468.170(1)

Criteria
The certified cost is limited to the actual cost of the pollution control portion of the facility. The certified cost may not exceed the taxpayer's own cash investment in the facility or portion of the facility.

Applied to this Application
Copies of **invoices substantiate** the claimed **cost**.

Referenced Section	Description of Ineligible Portion		Cost
		Claimed	$6,000
	There are no deductions		
		Certified	**$6,000**

Facility Cost Allocable to Pollution Control

% Certification Criteria

ORS 468.170(1) The certified "percentage allocable" is limited to the portion of the actual facility cost that is properly allocable to the prevention, control, or reduction of water pollution.

ORS 468.190 (3) If the facility cost does not exceed $50,000, the portion of the actual costs properly allocable to pollution control is the percentage of time the applicant uses the claimed facility to control air or water pollution.

Applied to this Application
The recommended certified facility cost is **$6,000** and the applicant uses the facility **100%** of the time for pollution control.

Compliance

ORS 468.180(1) Criteria
The Environmental Quality Commission may not issue a certificate unless the applicant constructed or installed the claimed facility in accordance with the applicable provisions of ORS 454.010 to 454.040, 454.205 to 454.255, 454.505 to 454.535, 454.605 to 454.755, ORS chapters 459, 459A, 465, 466 and 467 and ORS chapters 468, 468A and 468B. This includes the rules and standards adopted to implement these provisions.

Applied to this Application
The applicant states they are in compliance with Department rules and statutes, and with EQC orders. DEQ has not issued any permits to the applicant at this site.

Reviewer: Maggie Vandehey, DEQ

State of Oregon
Department of Environmental Quality

Tax Credit Review Report

Pollution Control Facility: Field Burning
Final Certification
ORS 468.150 -- 468.190
OAR 340-016-0005 -- 340-016-0080

Director's Recommendation

Approve Application No. **6561 @ Reduced Cost**

Applicant: **Roger F. Neuschwander**

Certification of:

Facility Cost		$197,359
Percentage Allocable	X	100%
Maximum Percentage	X	35%
Tax Credit		**$69,076**

Certificate Period: **10 years**

Applicant Identification

31983 Harris Drive
Harrisburg, OR 97446

Organized as: **Sole Proprietor**
Taxpayer ID: **93-0727909**

Facility Identification

Exit off I-5 at 209, N on Rowland
Harrisburg, OR 97446

The certificate will identify the facility as:

A 30' x 111' x 200' steel straw storage building

Technical Information

Roger Neuschwander is a grass seed producer who owns 200 acres and leases 885 acres that are under perennial grass seed production. The applicant claims a pre-engineered 30'x 111'x 200' steel building to protect baled straw that is a by-product after seed harvesting. The building can store approximately 2,900 tons of baled straw by-product. The storage area has a rock floor and an 18-inch concrete berm perimeter. The applicant also claims rock for a 20 foot by 105 foot access road and the cost of the land associated with the the claimed facility.

The applicant burned and baled as much acreage of straw as permitted in the past. The applicant burned 355 acres in the last three years and propane-flame burned 53 acres in 2003.

Taxpayer Allowed Credit

ORS 315.304(4)

Criteria

The taxpayer who is allowed the credit is the:

a. **Owner**, including a contract purchaser, **of** the trade or **business that uses** the Oregon property requiring a pollution control facility to prevent or minimize pollution; or

b. Person who, as a lessee or pursuant to an agreement, conducts the trade or business that operates or utilizes such property.

Applied to this Application

Applicant is the owner of the business that uses the claimed facility.

Eligibility

Timely Filing
2001 Edition
ORS 468.165(6)

Criteria

The applicant mist submit the applicant must file the application within one year after the date that they completed construction of the facility. The final application, however, is not valid if the applicant submits the application before they complete construction or before they place the facility into operation.

Applied to this Application

The applicant **filed** the application **within** the one-year **requirement**. They completed construction on 7/24/2003 and submitted the application on 7/28/2003. The applicant submitted the application after they completed construction and placed the facility into operation on 7/24/2003.

Purpose: Required
ORS 468.155 (1)(a)(A)
OAR 340-016-0060 (4)(b)

Criteria

The principal purpose of the claimed facility must be to reduce air pollution by reducing the maximum acreage to be open-burned in compliance with OAR 340-016-0060 (Acreage limitations, allocations).

The facility shall reduce or eliminate:

a. Open field burning and may include equipment, facilities, and land for gathering, densifying, handling, storing, transporting and incorporating grass straw or straw based products;

b. Air quality impacts from open field burning and may include propane burners or mobile field sanitizers; or

c. Grass seed acreage that requires open field burning.

Applied to this Application

The steel building complies with OAR 340-016-0060 by reducing the maximum acreage to be open-burned. The primary purpose of the claimed facility is to reduce or control air pollution.

Method Criteria

ORS 468.150 As approved by the Environmental Quality Commission, alternative methods for field sanitation, and straw utilization and disposal; and persons purchasing and utilizing such methods are eligible for a "pollution control facilities tax credit."

ORS 340-016-0060 (4)(b) The facility reduces or eliminates:

a. Open field burning and may include equipment, facilities, and land for gathering, densifying, handling, **storing, transporting** and incorporating grass straw or straw based products; or

b. Air quality impacts from open field burning and may include propane burners or mobile field sanitizers; or

c. Grass seed acreage that requires open field burning. The facility may include:

- Production of alternative crops that do not require open field burning;
- Production of rotation crops that support grass seed production without open field burning; or
- Drainage tile installations and new crop processing facilities.

Applied to this Application

The straw storage building and loading dock are an approved alternative method for field sanitation and straw utilization and disposal. The effects of field burning meet the definition of an air contaminant as defined by ORS 468A.005:

> Dust, fume, gas, mist, odor, smoke, vapor, pollen, soot, carbon, acid or particulate matter or any combination thereof.

Method Criteria

ORS 468.155 (1)(a)(B) OAR 340-016-0060(4)(b)(C) The facility reduce or eliminate open field burning and its effects on air quality and may include:

a. Production of alternative crops that do not require open field burning;

b. Production of rotation crops that support grass seed production without open field burning; or

c. Drainage tile installations and new crop processing facilities.

"Air contaminant" means any dust, fume, gas, mist, odor, smoke, vapor, pollen, soot, carbon, acid or particulate matter or any combination thereof.

Applied to this Application

The straw storage building **meets the definition** of an alternative to field burning by eliminating field sanitization burning.

Exclusions
ORS 468.155(3)
OAR 340-016-0070(3)

Criteria
The regulations provide a list of over 40 items excluded from the definition of a Pollution Control Facility. The list includes roadways. Items that do not meet the definition are ineligible for certification.

Applied to this Application
The applicant included the costs for an access road. The Department subtracted the associated costs from the claimed facility cost under the *Facility Cost* section below.

Replacement
ORS 468.155(3)(e)

Criteria
The replacement or reconstruction of all or part of a facility that the State of Oregon has previously certified as a pollution control facility under ORS 468.170 is not eligible for the tax credit with two exceptions:

1) The applicant replaced the facility due to a **DEQ,** EPA, or regional air pollution authority **requirement** that is different than the requirement to construct the original facility; or
2) The applicant replaced the facility before the end of its useful life.

Applied to this Application
The State of Oregon has issued six Pollution Control Facilities Tax Credit Certificates to the applicant at this location. The claimed facility **does not replace** any of the previously certified facilities.

Maximum Credit
ORS 468.173(3)(f)

Criteria
The maximum tax credit is 35% if the applicant submitted the application between January 1, 2002 and December 31, 2008, inclusively; and the certified facility cost does not exceed $200,000.

Applied to this Application
The **maximum tax credit is 35%** because the applicant submitted the application on 7/28/2003, and the recommended certified facility cost is $197,359.

Facility Cost

Subtractions
OAR 340-016-0070(1)

Criteria
The applicant must provide documents that substantiate the claimed facility cost. The claimed cost may not include:

a) the salvage value of a pre-existing facility if the applicant is replacing a facility;
b) the amount of any government grants received to pay part of the facility cost;
c) the present value of any other state tax credits for which the investment is eligible; and
d) ineligible costs as set forth in OAR 340-016-0070(3).

Applied to this Application
There are **no subtractions**.

$ Certification Criteria
ORS 468.170(1) The certified cost is limited to the actual cost of the pollution control portion of the facility. The certified cost may not exceed the taxpayer's own cash investment in the facility or portion of the facility.

Applied to this Application
Copies of **invoices and a purchase agreement substantiate** the claimed **cost**. The applicant claimed the assessed value of the land associated with the building. The applicant withdrew the amount of the previously owned land from the claimed facility cost.

Referenced Section	Description of Ineligible Portion		Cost
		Claimed	$200,359
Exclusions	Rock for access road		-$1,000
$ Certification	Land previously owned		-$2,000
		Certified	**$197,359**

Facility Cost Allocable to Pollution Control

% Certification Criteria
ORS 468.170(1) The certified "percentage allocable" is limited to the portion of the actual facility cost that is properly allocable to the prevention, control, or reduction of air pollution.

ORS 468.190(1) The following factors establish the portion of costs properly allocable to pollution control facilities that cost more than $50,000.

a. The extent to which the applicant uses the facility to recover and convert waste products into a salable or usable commodity;

b. The estimated annual percent return on the investment in the facility;

c. Any alternative methods, equipment, and costs for achieving the same pollution control objective;

d. Any related savings or increase in costs that occur or may occur as a result of the installation of the facility; and

e. Any **other relevant factors**.

Applied to this Application
The claimed facility produces no salable or usable commodities. The claimed facility does not have a positive return on the investment; therefore, **100% of the facility cost is allocable to pollution control**. (The custom baler owns the straw stored in the building. Grass seed growers construct storage buildings so custom balers have a place to store the straw after removing it from the grower's

fields.) The functional life of the facility that the Department would have used to calculate the return on investment is **20** years. The applicant did not investigate an alternative technology. There were no related savings associated with the claimed facility but there are increased operating costs. There are no other relevant factors.

Compliance

ORS 468.180(1) Criteria

The Environmental Quality Commission may not issue a certificate unless the applicant constructed or installed the claimed facility in accordance with the applicable provisions of ORS 454.010 to 454.040, 454.205 to 454.255, 454.505 to 454.535, 454.605 to 454.755, ORS chapters 459, 459A, 465, 466 and 467 and ORS chapters 468, 468A and 468B. This includes the rules and standards adopted to implement these provisions.

Applied to this Application

The applicant states that the claimed facility is in compliance with Department rules and statutes and with EQC orders. DEQ has not issued any permits to the applicant at this location.

Reviewers: Maggie Vandehey, DEQ

State of Oregon
Department of Environmental Quality

Tax Credit Review Report

Pollution Control Facility: Material Recovery
Final Certification
ORS 468.150 -- 468.190
OAR 340-016-0005 -- 340-016-0080

Director's Recommendation

Approve Application No. **6607**

Applicant: **Garbarino Disposal & Recycling Service, Inc.**

Certification of:

Facility Cost		$4,869
Percentage Allocable	X	100%
Maximum Percentage	X	35%
Tax Credit		**$1,704**

Certificate Period: **7 years**

Applicant Identification

PO Box 250
North Plains, OR 97133

Organized as: **S Corp**
Taxpayer ID: **93-1097105**

Facility Identification

30966 NW Hillcrest
North Plains, OR 97133

The certificate will identify the facility as:

Ten - 4 yd cardboard recycle containers, Inv. #2202513

Technical Information

Garbarino Disposal and Recycling Service, Inc. claims ten 4-yard cardboard containers. The applicant places the containers with its commercial customers in Washington County to collect cardboard. The containers are green steel with swivel casters and lids. The applicant collects and empties the containers on a regular schedule. The company sorts, bales, and sells the cardboard to the appropriate recycling mill for reuse into similar products. Most of the applicant's customers disposed of the cardboard as solid waste before the applicant provided the containers.

Taxpayer Allowed Credit

ORS 315.304(4)

Criteria

The taxpayer who is allowed the credit is the:

a. Owner, including a contract purchaser, of the trade or business that uses the Oregon property requiring a pollution control facility to prevent or minimize pollution; or

b. Person who, as a lessee or pursuant to an agreement, conducts the trade or business that operates or utilizes such property; or

c. Person who, as an owner, including a contract purchaser, or lessee, owns or leases a pollution control facility **that is used for** recycling, **material recovery** or energy recovery as defined in ORS 459.005.

Applied to this Application

The applicant is the **owner** of the business that uses the cardboard containers in a material recovery process.

Eligibility

Timely Filing
2001 Edition
ORS 468.165(6)

Criteria

The applicant must submit the application within one year after the date that they completed construction of the facility. The final application, however, is not valid if the applicant submits the application before they complete construction or before they place the facility into operation.

Applied to this Application

The applicant **submitted** the application **within** the one-year **filing requirement**. They completed construction on 6/7/2002, placed the facility into operation on 6/7/2002, and submitted the application on 6/11/2002. They did not file the application before they completed construction or before they placed the facility into operation.

Purpose: Voluntary
ORS 468.155 (1)(a)(B)
OAR 340-016-0010(7)(a)(b)

Criteria

The sole purpose, meaning the 'exclusive' purpose, of the claimed facility must be to prevent, control, or reduce a substantial quantity of solid waste.

"Solid waste" as defined by ORS 459.005: All **useless or discarded** putrescible and non-putrescible materials, including but not limited to garbage, rubbish, refuse, ashes, paper and **cardboard**, sewage sludge, septic tank and cesspool pumpings or other sludge, useless or discarded commercial, industrial, demolition and construction materials, discarded or abandoned vehicles or parts thereof, discarded home and industrial appliances, manure, vegetable or animal solid and semisolid materials, dead animals and infectious waste as defined by ORS 459.386

Applied to this Application
Old corrugated cardboard **meets the definition of** solid waste as defined in ORS 459.005. The containers reduce a substantial quantity of solid waste by diverting approximately 104 tons annually from the landfill.

Method
ORS 468.155 (1)(b)(D)

Criteria
The prevention, control, or reduction must be accomplished by the use of a material recovery process which obtains useful material from material that would otherwise be solid waste.

"Material Recovery" means any process, such as pre-segregation, for obtaining **materials from solid waste**, hazardous waste or used oil. The recovered material shall still have useful physical or chemical properties after serving a specific purpose and can, therefore, be reused or recycled for the same or other purpose. The recovered material shall have **useful physical** or chemical properties that yield a competitive end-product of real economic value.

OAR 340-016-0010(7)
OAR 340-016-0060(4)(e)

Criteria
The facility produces an end product of utilization that is an item of real economic value and is competitive with an end product produced in another state. The facility produces the end product by mechanical processing, chemical processing; or through the production, processing, **pre-segregation**, or use of materials which:

a. Have useful chemical or physical properties and which may be used for the same or other purposes: or
b. May be used in the same kind of application as its prior use without change in identity.

Applied to this Application
The applicant **uses** the containers **in a material recovery process** to obtain secondary fibers from solid waste. The applicant pre-segregates the material prior **selling it for its fiber content**.

Exclusions
ORS 468.155(3)
OAR 340-016-0070(3)

Criteria
The regulations provide a list of over 40 items excluded from the definition of a Pollution Control Facility. Items that do not meet the definition are ineligible for certification.

Applied to this Application
There are **no exclusions**.

Replacement
ORS 468.155(3)(e)

Criteria
The replacement or reconstruction of all or part of a facility that the State of Oregon previously certified as a pollution control facility under ORS 468.170

is not eligible for the tax credit with two exceptions:

a. The applicant replaced the facility because DEQ or EPA imposed a different requirement than the requirement to construct the original facility; or

b. The applicant replaced the facility before the end of its useful life.

Applied to this Application
The State of Oregon issued six certificates for material recovery pollution controls to the applicant at this location. The claimed facility **did not replace** any of the previously certified facilities.

Maximum Credit
ORS 468.170(3)(d)
ORS 468.155(1)(b)(D)

Criteria
The maximum tax credit is 35% if the applicant submitted the application between January 1, 2002 and December 31, 2008, inclusively, and the facility is used for material recovery or recycling, as those terms are defined in ORS 459.005.

Applied to this Application
The maximum tax credit is **35%** because the applicant submitted the application on 6/7/2003, and the facility is used in a **material recovery process.**

Facility Cost

Subtractions
OAR 340-016-0070(1)

Criteria
The applicant must provide documents that substantiate the claimed facility cost. The claimed cost may not include:

a) the salvage value of a pre-existing facility if the applicant is replacing a facility;

b) the amount of any government grants received to pay part of the facility cost;

c) the present value of any other state tax credits for which the investment is eligible; and

d) ineligible costs as set forth in OAR 340-016-0070(3).

Applied to this Application
There are **no subtractions**.

$ Certification
ORS 468.170(1)

Criteria
The certified cost is limited to the actual cost of the material recovery portion of the facility. The certified cost may not exceed the taxpayer's own cash investment in the facility or portion of the facility.

Applied to this Application
The applicant provided copies of invoices that substantiate the claimed cost.

Referenced Section	Description of Ineligible Portion		Cost
		Claimed	$4,869
		Certified	**$4,869**

Facility Cost Allocable to Pollution Control

% Certification Criteria

ORS 468.170 (1) The certified "percentage allocable" is limited to the portion of the actual facility cost that is properly allocable to the prevention, control, or **reduction of solid waste**, hazardous waste, or to recycling or appropriately disposing of used oil.

ORS 468.190(3) The percentage of the cost allocable to pollution control is equal to the portion of time that the applicant uses the facility to prevent, control or reduce solid waste, hazardous waste, or to recycle or appropriately dispose of used oil if the cost of the facility **does not exceed $50,000**.

Applied to this Application

The applicant uses the containers **100%** of the time to recover solid waste.

Compliance

The applicant states the facility and site are in compliance with Department rules and statutes, and with EQC orders. DEQ has not issued any permits to the site.

Reviewer: Maggie Vandehey, DEQ

State of Oregon
Department of Environmental Quality

Tax Credit Review Report

Pollution Control Facility: Material Recovery
Final Certification
ORS 468.150 -- 468.190
OAR 340-016-0005 -- 340-016-0080

Director's Recommendation

Approve Application No. **6615**

Applicant: **Rosavers Supermarkets, Inc.**

Certification of:

Facility Cost		$46,700
Percentage Allocable	X	100%
Maximum Percentage	X	50%
Tax Credit		**$23,350**

Certificate Period: **10 years**

Applicant Identification

PO Box 9000
Spokane, WA 99209-9000

Organized as: **C Corp**
Taxpayer ID: **91-0582615**

Facility Identification

PO Box 9000

The certificate will identify the facility as:

One - bulk feed can recycler, Model Cando II 90000, Serial # 1703;
Two - can and plastic recyclers, Model One Stop 80000, Serial #s 1707 and 1708

Technical Information

Rosavers Supermarkets, Inc. is a retail grocery store. The applicant claims three machines used to reclaim containers returned for the deposit.

Taxpayer Allowed Credit

ORS 315.304(4) Criteria

The taxpayer who is allowed the credit is the:

a. Owner, including a contract purchaser, of the trade or business that uses the Oregon property requiring a pollution control facility to prevent or minimize pollution; or

b. Person who, as a lessee or pursuant to an agreement, conducts the trade or business that operates or utilizes such property; or

c. Person who, as an **owner**, including a contract purchaser, or lessee, owns or leases a pollution control facility that is **used for recycling, material recovery** or energy recovery as defined in ORS 459.005.

Applied to this Application

Rosavers Supermarkets, Inc. owns the claimed facility that they use for recycling or material recovery.

Eligibility

Timely Filing
1999 Edition
ORS 468.173(1)
OAR 340-016-0007

Criteria

The applicant must submit the application within two years after the date that they complete construction of the facility if that date was on or before December 31, 2001. The applicant must also submit the final application after they complete construction and place the facility into operation.

Applied to this Application

The applicant submitted the application **within** the **two-year** filing **requirement** since they installed the claimed facility on **10/22/2001** and submitted the application on **10/22/2003**. The applicant submitted the application after they completed construction and placed the facility into operation on 10/22/2001.

Purpose: Voluntary
ORS 468.155 (1)(a)(B)
OAR 340-016-0010(7)(a)(b)

Criteria

The **sole purpose**, meaning the 'exclusive' purpose, of the claimed facility must be to prevent, control, or reduce a **substantial quantity** of **solid waste**, hazardous waste, or used oil.

> "Solid waste" as defined by ORS 459.005: All useless or discarded putrescible and non-putrescible materials, including but not limited to garbage, rubbish, refuse, ashes, paper and cardboard, sewage sludge, septic tank and cesspool pumpings or other sludge, useless or discarded commercial, industrial, demolition and construction materials, discarded or abandoned vehicles or parts thereof, discarded home and industrial appliances, manure, vegetable or animal solid and semisolid materials, dead animals and infectious waste as defined by ORS 459.386. (b) **excludes** "Materials used for fertilizing or for other productive purposes or which are salvageable as such material are used on land in agricultural operations and the growing or harvesting of crops and the raising of animals."

Applied to this Application

The applicant has increase can, plastic and glass recycling by over 50% with the new machines. The applicant had low participation with non-automated recycling because it was time-consuming, messy, and inconvenient. The machines reduce a **substantial quantity** of **solid waste**.

Method
ORS 468.155 (1)(b)(D)

Criteria
The claimed facility must prevent, control, or **reduce** the waste material by the **use of a material recovery process**. The process must obtain useful material from material that would otherwise be solid waste, hazardous waste or used oil.

"Material Recovery" means any **process**, such as **pre-segregation**, for obtaining materials from solid waste, hazardous waste or used oil. The recovered material shall still have useful physical or chemical properties after serving a specific purpose and can, therefore, be reused or recycled for the same or other purpose. The recovered material shall have useful physical or chemical properties that yield a **competitive end product** of real economic value

OAR 340-016-0010(7)
OAR 340-016-0060(4)(e)

Criteria
The facility produces an end product of utilization. It must be an item of real economic value and it must be competitive with an end product produced in another state. The facility must produce the end product by mechanical processing, chemical processing; or through the production, **processing, pre-segregation**, or use of materials which:

a. Have **useful chemical or physical properties** and which may be used for the same or other purposes: or
b. May be used in the same kind of application as its prior use without change in identity.

Applied to this Application
The automated recycling machines process and segregate cans, plastic, and glass that have useful physical properties.

Exclusions
ORS 468.155(3)
OAR 340-016-0070(3)

Criteria
The regulations **exclude** over 40 items from the definition of a Pollution Control Facility. Any items that **do not meet the definition** are ineligible for certification.

Applied to this Application
There are **no exclusions**.

Replacement
ORS 468.155(3)(e)

Criteria
The replacement or reconstruction of all or part of a previously certified pollution control facility is not eligible for the tax credit. There are, however, with two exceptions:

1. The applicant replaced the facility because DEQ or EPA imposed a different requirement than the requirement to construct the original facility; or

2. The applicant replaced the facility before the end of its useful life.

Applied to this Application
The claimed facility is **not a replacement facility** because the State of Oregon has not issued any Pollution Control Facilities Tax Credit Certificates to the applicant at this site.

Maximum Credit
ORS 468.173(1)
OAR 340-016-0007

Criteria
The applicable percentage of the certified cost of a facility shall be 35% if the facility is certified under the 1999 Edition of ORS 468.155 to 468.190.

Applied to this Application
The **maximum tax credit is 50%** because the applicant submitted the application under the 1999 Edition by completing construction of the facility on 10/22/2001.

Facility Cost

Subtractions
OAR 340-016-0070(1)

Criteria
The applicant must provide documents that substantiate the claimed facility cost. The claimed cost may not include:

a) the salvage value of a pre-existing facility if the applicant is replacing a facility;

b) the amount of any government grants received to pay part of the facility cost;

c) the present value of any other state tax credits for which the investment is eligible; and

d) ineligible costs as set forth in OAR 340-016-0070(3).

Applied to this Application
There are **no subtractions**.

$ Certification
ORS 468.170(1)

Criteria
The certified cost is limited to the **actual cost** of the material recovery portion of the facility. The certified cost may not exceed the **taxpayer's own cash** investment in the facility or portion of the facility.

Applied to this Application
Invoices substantiated the eligible facility cost. The cost represents the taxpayer's own cash investment.

Referenced Section	Description of Ineligible Portion		Cost
		Claimed	$46,700
	There are no deductions		0
		Certified	**$46,700**

Facility Cost Allocable to Pollution Control

% Certification Criteria

ORS 468.170(1) The certified "percentage allocable" is limited to the portion of the actual facility cost that is properly allocable to the prevention, control, or reduction of solid waste, hazardous waste, or to recycling or appropriately disposing of used oil.

ORS 468.190(3) The facility cost **does not exceed $50,000**. The portion of costs properly allocable to material recovery or recycling is in proportion to the **ratio of time** the applicant uses the claimed facility to control solid or hazardous waste or to recycling or appropriately disposing of used oil bears to the entire time the facility is used for any purpose.

Applied to this Application
The applicant uses the automated recycling machines **100%** of the time to reduce solid waste.

Compliance

ORS 468.180(1) Criteria
The Environmental Quality Commission may not issue a certificate unless the applicant constructed or installed the claimed facility in accordance with the applicable provisions of ORS 454.010 to 454.040, 454.205 to 454.255, 454.505 to 454.535, 454.605 to 454.755, ORS chapters 459, 459A, 465, 466 and 467 and ORS chapters 468, 468A and 468B. This includes the rules and standards adopted to implement these provisions.

Applied to this Application
The applicant states the facility and site are in compliance with Department rules and statutes, and with EQC orders. DEQ has not issued any permits to the site.

Reviewer: Maggie Vandehey

State of Oregon
Department of
Environmental
Quality

Tax Credit Review Report

Pollution Control Facility: UST/AST
Final Certification
ORS 468.150 -- 468.190
OAR 340-016-0005 -- 340-016-0080

Director's Recommendation

Approve Application No. **6541 @ Reduced Cost**

Applicant: **WSCO Petroleum Corp**

Certification of:		
Facility Cost		$107,435
Percentage Allocable	X	100%
Maximum Percentage	X	35%
Tax Credit		**$37,602**

Certificate Period: **10 years**

Applicant Identification

2929 NW 29th
Portland, OR 97210-1705

Organized as: **C Corp**
Taxpayer ID: **97-0757213**

Facility Identification

334 W Harvard Avenue
Roseburg, OR 97470

The certificate will identify the facility as:

EPA upgrades to gas station

Technical Information

WSCO Petroleum Corp operates a retail gas station and convenience store. The applicant upgraded their gasoline and diesel delivery system to meet the federal EPA requirements to prevent leaks from contaminating surface and groundwater. The applicant installed 205 feet of double-wall flexible piping to replace corroded piping. They also installed an automatic tank gauge system, leak detection, an overfill alarm, automatic shutoff valves, an oil/water separator and sumps.

Taxpayer Allowed Credit

ORS 315.304(4) Criteria

The taxpayer who is allowed the credit is the:

(a) **Owner**, including a contract purchaser, **of the** trade or **business** that uses the Oregon property requiring a pollution control facility to prevent or minimize pollution; or

(b) Person who, as a lessee or pursuant to an agreement, conducts the trade or business that operates or utilizes such property.

Applied to this Application
Applicant is the **owner of the business** that uses the claimed facility.

Eligibility

Timely Filing
2001 Edition
ORS 468.165(6)

Criteria
The applicant must submit the application within one year after the date that they completed construction of the facility. The final application, however, is not valid if the applicant submits the application before they complete construction or before they place the facility into operation.

Applied to this Application
The applicant submitted the application **within** the one-year **requirement** by submitting the application on 7/9/2003, less than one year after completing construction on 7/17/2002. The applicant did not submit the application before they completed construction or before they placed the facility into operation on 7/17/2002.

Purpose: Required
ORS 468.155 (1)(a)(A)
OAR 340-016-0060(2)(a)

Criteria
The principal purpose of the claimed facility must be to comply with a requirement imposed by DEQ or EPA to prevent, reduce, or control air and water pollution. The facility must meet the federal EPA's requirements for underground storage tanks and DEQ's requirements under OAR Chapter 340, Division 150. That principal purpose must be the most important or primary purpose of the facility. The facility must have only one primary purpose.

> "Water Pollution" means such alteration of the physical, chemical or biological properties of any waters of the state, including change in temperature, taste, color, turbidity, silt or odor of the waters, or such discharge of any liquid, gaseous, solid, radioactive or other substance into any waters of the state, which will or tends to, either by itself or in connection with any other substance, create a public nuisance or which will or tends to render such waters harmful, detrimental or injurious to public health, safety or welfare, or to domestic, commercial, industrial, agricultural, recreational or other legitimate beneficial uses or to livestock, wildlife, fish or other aquatic life or the habitat thereof.

Applied to this Application
Petroleum **meets the definition of** water pollution. The upgrades comply with the federal EPA requirements for underground storage tanks and DEQ requirements under OAR Chapter 340, Division 150. The primary or most important purpose of the claimed facility is to prevent and quickly detect leaks that would cause air and water pollution during storing, filling, and dispensing operations.

Method
ORS 468.155 (1)(b)(E)

Criteria
The applicant uses the facility to detect, deter, or prevent spills or unauthorized releases. Methods may include corrosion protection, leak detection, spill and

OAR 340-016-0025(2)(g) overfill prevention, oil/water separators, vapor recovery and tank vaults.

Applied to this Application
The applicant uses the claimed facility to **detect, deter, or prevent spills** or unauthorized releases.

Exclusions Criteria
ORS 468.155(3) OAR 340-016-0070(3) The regulations provide a list of over 40 items excluded from the definition of a Pollution Control Facility. Insignificant contributions to the claimed facility's pollution control purpose are on the list. Items that do not meet the definition are ineligible for certification.

Applied to this Application
The applicant installed non-corrosive double-wall flexible piping and an automatic tank gauge system. The applicant's service requires piping to deliver product to its customers. The tank gauge system provides inventory control in addition to pollution control. A portion of these items makes an **insignificant contribution** to the pollution control purpose of the claimed facility. The Department subtracted the standard deduction for these items from the claimed facility cost shown under the *Facility Cost* section below.

Replacement Criteria
ORS 468.155(3)(e) The replacement or reconstruction of all or part of a facility that the State of Oregon has previously certified as a pollution control facility under ORS 468.170 is not eligible for the tax credit with two exceptions:

1) the applicant replaced the facility due to a DEQ, EPA, or regional air pollution authority requirement that is different than the requirement to construct the original facility; or

2) the applicant replaced the facility before the end of its useful life.

Applied to this Application
The claimed facility is **not a replacement** facility.

Maximum Credit Criteria
ORS 468.173(3)(f) The maximum tax credit is 35% if the applicant submitted the application between January 1, 2002 and December 31, 2008, inclusively; and the certified facility cost does not exceed $200,000.

Applied to this Application
The **maximum tax credit is 35%** because the applicant submitted the application on 7/9/2003, and the recommended facility cost is $107,435.

Facility Cost

Subtractions Criteria
OAR 340-016-0070(1) The applicant must provide documents that substantiate the claimed facility cost. The claimed cost may not include:

a) the salvage value of a pre-existing facility if the applicant is replacing a

facility;

b) the amount of any government grants received to pay part of the facility cost;

c) the present value of any other state tax credits for which the investment is eligible; and

d) ineligible costs as set forth in OAR 340-016-0070(3).

Applied to this Application
There are **no subtractions**.

$ Certification Criteria
ORS 468.170(1) The certified cost is limited to the actual cost of the pollution control portion of the facility. The certified cost may not exceed the taxpayer's own cash investment in the facility or portion of the facility.

Applied to this Application
Copies of **invoices substantiated** the eligible facility **cost**.

Referenced Section	Description of Ineligible Portion		Cost
		Claimed	$108,107
Exclusions	10% of tank gauge system		(600)
	205' of piping @ $1.64 per foot		(336)
		Certified	**$107,435**

Facility Cost Allocable to Pollution Control

% Certification Criteria
ORS 468.170(1) The certified "percentage allocable" is limited to the portion of the actual facility cost that is properly allocable to the prevention, control, or reduction of air and water pollution.

ORS 468.190(1) The following factors establish the portion of costs properly allocable to pollution control for facilities that cost more than $50,000.

a. The extent to which the applicant uses the facility to recover and convert waste products into a salable or usable commodity;

b. The estimated annual percent return on the investment in the facility;

c. Any alternative methods, equipment, and costs for achieving the same pollution control objective;

d. Any related savings or increase in costs that occur or may occur as a result of the installation of the facility; and

e. Any **other relevant factors**.

Applied to this Application
The claimed facility produces no salable or usable commodities. The functional

life of the facility used in considering the ROI is **20** years. The claimed facility does not have a return on the investment; therefore, 100% of the facility cost is allocable to pollution control. The applicant did not investigate an alternative technology because the claimed facility is the best available technology. There are no savings or increases in costs. There are no other relevant factors.

Compliance

ORS 468.180(1) Criteria

The Environmental Quality Commission may not issue a certificate unless the applicant constructed or installed the claimed facility in accordance with the applicable provisions of ORS 454.010 to 454.040, 454.205 to 454.255, 454.505 to 454.535, 454.605 to 454.755, ORS chapters 459, 459A, 465, 466 and 467 and ORS chapters 468, 468A and 468B. This includes the rules and standards adopted to implement these provisions.

Applied to this Application

WSCO Petroleum Corporation states the facility and the site are in compliance with Department rules and statutes, and with EQC orders. DEQ staff assigned to the source, Eric Clough in the Western Region, confirmed that, to the best of his knowledge, the applicant's statement is true. DEQ issued permit number 10-761-2001-OPER on October 11, 2001.

Reviewer: Maggie Vandehey, DEQ

State of Oregon
Department of Environmental Quality

Tax Credit Review Report

Director's Recommendation

Approve Application No. **6610 @ Reduced Cost**

Applicant: **M & M Rentals LLC**

Certification of:

Facility Cost		$ 96,219
Percentage Allocable	X	100%
Maximum Percentage	X	50%
Tax Credit		**$ 48,110**

Certificate Period: **10 years**

Pollution Control Facility: UST/AST
Final Certification
ORS 468.150 -- 468.190
OAR 340-016-0005 -- 340-016-0080

Applicant Identification

Organized As: **LLC**
Business: **retal gas station**
Taxpayer ID: **90-000-4365**

The applicant's address is:

3015 Salem Avenue SE
Albany, OR 97321

Facility Identification

The certificate will identify the facility as:

Upgrade tank system to meet federal EPA requirements

The applicant is the of the facility located at:

655 N Albany Road
Albany, OR 97321

Technical Information

M & M Rental LLC owns a retail gas station. The applicant upgraded the station to meet federal Environmental Protection Agency (EPA) requirements. The applicant installed a double-walled underground storage tank with two compartments, 250' of double wall piping, spill containment basins, an automatic tank gauge system, leak detection, overfill alarms, sumps, oil/water separators, and automatic shutoff valves.

Taxpayer Allowed Credit

ORS 315.304(4) Criteria

The taxpayer who is allowed the credit is the:

a. **Owner**, including a contract purchaser, **of** the trade or **business** that uses the Oregon property requiring a pollution control facility to prevent or minimize pollution; or

b. Person who, as a lessee or pursuant to an agreement, conducts the trade or business that operates or utilizes such property; or

Applied to this Application

M & M Rentals LLC owns the claimed facility and the retail gas station.

Eligibility

Timely Filing
1999 Edition
ORS 468.173(1)
OAR 340-016-0007

Criteria

The applicant must submit the application within two years after the date that the completed construction of the facility if that date was on or before December 31, 2001. The applicant must also submit the final application after they complete construction and place the facility into operation.

Applied to this Application

The applicant filed the application **within** the **two-year requirement** by completing construction of the claimed facility on 11/28/2001 and submitting the application on 10/21/2003. Additionally, the applicant filed the application after they completed construction and placed the facility into operation on 1/20/2002.

Purpose: Required
ORS 468.155 (1)(a)(A)
OAR 340-016-0060(2)(a)

Criteria

The principal purpose of the claimed facility must be to comply with a requirement imposed by DEQ or EPA to prevent, reduce, or control water or air pollution. That principal purpose must be the most important or primary purpose of the facility. The facility must have only one primary purpose.

> "Water Pollution" means such alteration of the physical, chemical or biological properties of any waters of the state, including change in temperature, taste, color, turbidity, silt or odor of the waters, or such discharge of any liquid, gaseous, solid, radioactive or other substance into any waters of the state, which will or tends to, either by itself or in connection with any other substance, create a public nuisance or which will or tends to render such waters harmful, detrimental or injurious to public health, safety or welfare, or to domestic, commercial, industrial, agricultural, recreational or other legitimate beneficial uses or to livestock, wildlife, fish or other aquatic life or the habitat thereof. ORS 468B.005

Applied to this Application
The claimed facility **meets** the federal **Environmental Protection Agency's requirements** for underground storage tanks and DEQ's requirements under OAR Chapter 340, Division 150 for controlling air and water pollution.

Method
ORS 468.155 (1)(b)(A)

Criteria
The prevention, control, or reduction must be accomplished by disposal or elimination of industrial wastewater and the use of a treatment works for industrial waste as defined in ORS 468B.005.

> "Industrial waste" means any liquid, gaseous, radioactive or solid waste substance or a combination thereof resulting from any process of industry, manufacturing, trade or business, or from the development or recovery of any natural resources.
>
> "Treatment works" means any plant or other works used for the purpose of treating, stabilizing or holding wastes.

OAR-016-0025 (2)(g) The facility will be used to detect, deter, or prevent spills or unauthorized releases.

Applied to this Application
Petroleum **meets the definition of** industrial waste. The upgrades comply with the federal EPA requirements for underground storage tanks and DEQ requirements under OAR Chapter 340, Division 150. The primary or most important purpose of the claimed facility is to prevent and quickly detect leaks that would cause air and water pollution during storing, filling, and dispensing operations.

Exclusions
ORS 468.155 (3) OAR 340-016-0070(3)

Criteria
The regulations provide a list of over 40 items excluded from the definition of a Pollution Control Facility. Insignificant contributions to the claimed facility's pollution control purpose are on the list. Items that do not meet the definition are ineligible for certification.

Applied to this Application
The applicant installed non-corrosive double wall piping, a double wall tank, and an automatic tank gauge system. The applicant's service requires the tank and the piping to deliver product to its customers. The tank gauge system provides inventory control in addition to pollution control. A portion of these items makes an **insignificant contribution** to the pollution control purpose of the claimed facility. The Department subtracted the "standard deduction" for these items from the claimed facility cost shown under the *Facility Cost* section.

Replacement
ORS 468.155 (3)(e)

Criteria
The replacement or reconstruction of all or part of a facility that has previously been certified as a pollution control facility under ORS 468.170 is not eligible for the tax credit with two exceptions:

1) the facility was replaced due to a requirement imposed by DEQ or EPA that is different than the requirement to construct the original facility; or

2) the facility was replaced before the end of its useful life.

Applied to this Application
The State of Oregon has issued two Pollution Control Facilities Tax Credit Certificates to the applicant for upgrading tank systems. The upgrades were at different retail gas stations. The claimed facility is **not a replacement facility**.

Maximum Credit
ORS 468.173(1)
OAR 340-016-0007

Criteria
The applicant must submit the application within two years after the date that the completed construction of the facility if that date was completed on or before December 31, 2001. The applicant must also submit the final application after they complete construction and place the facility into operation.

Applied to this Application
The **maximum tax credit is 50%** because the applicant completed construction of the facility on 11/28/2001.

Facility Cost

Subtractions
OAR 340-016-0070(1)

Criteria
The applicant must provide documents that substantiate the claimed facility cost. The claimed cost **may not include**:

a) the salvage value of a pre-existing facility if the applicant is replacing a facility;

b) the amount of any government grants received to pay part of the facility cost;

c) the present value of any other state tax credits for which the investment is eligible; and

d) **ineligible costs** as set forth in OAR 340-016-0070(3).

Applied to this Application
There are **no subtractions**.

$ Certification
ORS 468.170(1)

Criteria
The certified cost is limited to the **actual cost** of the material recovery portion of the facility. The certified cost may not exceed the

taxpayer's own cash investment in the facility or portion of the facility.

Applied to this Application
Invoices substantiated the eligible facility cost. The recommended certified cost represents the taxpayer's own cash investment.

Referenced Section	Description of Ineligible Portion		Cost
		Claimed	$105,523
Exclusions	10% of tank gauge system		(349)
	50% of double wall tank		(8,542)
	250' piping @ $1.64 per foot		(413)
		Certified	**$96,219**

Facility Cost Allocable to Pollution Control

% Certification Criteria

ORS 468.170(1) The certified "percentage allocable" is limited to the portion of the actual facility cost that is properly allocable to pollution control.

ORS 468.190(1) The following factors establish the portion of costs properly allocable to material recovery or recycling for facilities that cost more than $50,000.

a. The extent to which the applicant uses the facility to recover and convert waste products into a salable or usable commodity;

b. The estimated annual percent return on the investment in the facility;

c. Any alternative methods, equipment, and costs for achieving the same pollution control objective;

d. Any related savings or increase in costs that occur or may occur as a result of the installation of the facility; and

e. Any other relevant factors.

Applied to this Application
The claimed facility produces no salable or usable commodities. The functional life of the facility used in considering the ROI is **20** years. The claimed facility does not have a return on the investment; therefore, 100% of the facility cost is allocable to pollution control. The applicant did not investigate an alternative technology because the claimed facility is the best available technology. There are no savings or increases in costs. There are no other relevant factors.

Compliance

ORS 468.180(1) Criteria

The Environmental Quality Commission may not issue a certificate unless the applicant constructed or installed the claimed facility in accordance with the applicable provisions of ORS 454.010 to 454.040, 454.205 to 454.255, 454.505 to 454.535, 454.605 to 454.755, ORS chapters 459, 459A, 465, 466 and 467 and ORS chapters 468, 468A and 468B. This includes the rules and standards adopted to implement these provisions.

Applied to this Application

M & M Rentals LLC states the facility and the site are in compliance with Department rules and statutes, and with EQC orders. DEQ staff assigned to the source, Jim Parr in the Western Region, confirmed that, to the best of his knowledge, the applicant's statement is true. DEQ issued permit number 22-12087-2001-OPER on July 3, 2001.

Reviewers: Maggie Vandehey

State of Oregon
Department of Environmental Quality

Tax Credit Review Report

Director's Recommendation

Approve Application No. **5736 @ Reduced Cost**

Applicant: **Columbia Steel Casting Co., Inc.**

Certification of:		
Facility Cost		$49,114
Percentage Allocable	X	100%
Maximum Percentage	X	50 %
Tax Credit		**$24,557**

Certificate Period: **7 years**

Pollution Control Facility: Water
Final Certification
ORS 468.150 -- 468.190
OAR 340-016-0005 -- 340-016-0080

Applicant Identification
PO Box 83095
Portland, OR 97283

Organized as: **S Corp.**
Taxpayer ID: **93-0336095**

Facility Identification
10425 N. Bloss Avenue
Portland, OR 97203

The certificate will identify the facility as:

Three 20-gallon Gardner-Denver Model 7002505 oil/water separators
One 90-gallon Gardner-Denver Model 201EAQ035 oil/water separator
One wash-pad sump.

Technical Information

Columbia Steel Casting produces alloy steel castings. The manufacturing process requires large amounts of compressed air, which contains moisture and oil. Prior to installing the claimed facilities, the applicant drained the oily condensate onto adsorbent pads. This process frequently allowed oily water to mix with storm water. The applicant installed four oil/water separators to remove the oily condensate created by the five air compressors. Gardner-Denver manufactured the four oil/water separators.

The applicant also installed a 2000-gallon sump at the outdoor fueling and pressure washing area to collect the oily water and sediment. A sump pump transfers the oily water into a 90-gallon oil/water separator. The applicant also claims piping to transfer the oily condensate from the compressors and the outdoor sump to the four gravity type oil/water separators. The applicant transfers the collected oil to a collection tank for recycling and pumps the water into a closed loop system that recycles all of their industrial wastewater.

Taxpayer Allowed Credit

ORS 315.304(4)

Criteria

The taxpayer who is allowed the credit must be:

a. The **owner**, including a contract purchaser, of the trade or **business** that utilizes Oregon property **requiring** a pollution control **facility** to prevent or minimize pollution; or

b. A person who, as a lessee or pursuant to an agreement, conducts the trade or business that operates or utilizes such property;

Applied to this Application

Applicant is the owner of the claimed facility.

Eligibility

Timely Filing

1999 Edition
ORS 468.165 (6)
OAR 340-016-0007

Criteria

The applicant must submit the application within two years after the date that they complete construction of the facility if that date was on or before December 31, 2001. The applicant must also submit the final application after they complete construction and place the facility into operation.

Applied to this Application

The applicant submitted the application **within** the **two-year** filing **requirement** since they completed construction on 10/15/1999 and submitted the application on 10/15/2001. The applicant submitted the application after they completed construction and placed the facility into operation on 10/15/1999.

Purpose: Required

ORS 468.155 (1)(a)(A)
OAR 340-016-0060(2)(a)

Criteria

The principal purpose of the claimed facility must be to comply with a requirement imposed by DEQ, EPA, or LRAPA to prevent, reduce, or control air pollution. That principal purpose must be the most important or primary purpose of the facility. The facility must have only one primary purpose.

"Water pollution" means such alteration of the physical, chemical or biological properties of any waters of the state, including change in temperature, taste, color, turbidity, silt or odor of the waters, or such discharge of any liquid, gaseous, solid, radioactive or other substance into any waters of the state, which will or tends to, either by itself or in connection with any other substance, create a public nuisance or which will or tends to render such waters harmful, detrimental or injurious to

public health, safety or welfare, or to domestic, commercial, industrial, agricultural, recreational or other legitimate beneficial uses or to livestock, wildlife, fish or other aquatic life or the habitat thereof. ORS 468B.005

Applied to this Application
The facility complies with the applicant's 1200 COLS storm water permit requirements to prevent oily water from entering surface waters. DEQ issued the storm water permit. Storm-water samples tested after the applicant installed the claimed facility did not indicate the presence of oil at levels above the permitted limits.

The applicant claims piping from the air compressors to the four oil/water separators. The primary and most important purpose of this piping is material handling. The Department subtracted the cost of the piping under the *Facility Cost* section below.

Method

ORS 468.155 (1)(b)(A)

Criteria
The prevention, control, or reduction must be accomplished by disposal or elimination of industrial wastewater and the use of a treatment works for industrial waste as defined in ORS 468B.005.

"Industrial waste" means any liquid, gaseous, radioactive or solid waste substance or a combination thereof resulting from any process of industry, manufacturing, trade or business, or from the development or recovery of any natural resources.

"Treatment works" means any plant or other works used for the purpose of treating, stabilizing or holding wastes.

Applied to this Application
The presence of oil in storm water **meets the definition** of water pollution as defined under the *Purpose: Require* section. The four oil water separators and the wash pad sump **meet the definition** of a treatment works in ORS 468B.005 because they remove oil from consensate prior to discharge.

Exclusions

ORS 468.155 (3)
OAR 340-016-0070(3)

Criteria
The regulations provide a list of more than 40 items excluded from the definition of a Pollution Control Facility. Items that do not meet the definition are ineligible for certification.

Applied to this Application
There are no other exclusions other than the piping discussed in the *Purpose: Required* section.

Replacement
ORS 468.155 (3)(e)

Criteria
The replacement or reconstruction of all or part of a facility that has previously been certified as a pollution control facility under ORS 468.170 is not eligible for the tax credit with two exceptions:

1) the facility was replaced due to a requirement imposed by DEQ or EPA that is different than the requirement to construct the original facility; or

2) the facility was replaced before the end of its useful life.

Applied to this Application
The State of Oregon issued 19 certificates to the applicant at this location; 18 for control air pollution. The claimed facility is **not a replacement** to any of the previously certified facilities.

Maximum Credit
ORS 468.173(1)

Criteria
The maximum tax credit available to the applicant is **50%** if construction of the facility commenced prior to January 1, 2001, they completed construction prior to January 1, 2004, and they filed on or before December 1, 2004.

Applied to this Application
The **maximum tax credit is 50%** since the applicant commenced construction on 04/01/96, completed construction on 10/15/99, and submitted the application on 10/15/01.

Facility Cost

Subtractions
OAR 340-016-0070(1)

Criteria
The applicant must provide documents that substantiate the claimed facility cost. The claimed cost may not include:

a) the salvage value of a pre-existing facility if the applicant is replacing a facility;

b) the amount of any government grants received to pay part of the facility cost;

c) the present value of any other state tax credits for which the investment is eligible; and

d) ineligible costs as set forth in OAR 340-016-0070(3).

Applied to this Application
There are **no subtractions**.

$ Certification
ORS 468.170(1)

Criteria
The certified cost is limited to the actual cost of the pollution control portion of the facility. The certified cost may not exceed the taxpayer's own cash investment in the facility or portion of the facility.

Applied to this Application
Copies of **invoices substantiate** the claimed **cost**.

Referenced Section	Description of Ineligible Portion		Cost
		Claimed	$67,341
Facility Cost	Applicant reduced cost on 08/20/03.		-$ 7,689
Purpose	Piping from air compressors to oil water separators.		-$10,538
		Certified	**$49,114**

Facility Cost Allocable to Pollution Control

ORS 468.190 (3)

Criteria

If the cost of the facility (or facilities certified under one certificate) does not exceed $50,000, the portion of the actual costs properly allocable shall be in the proportion that the ratio of the time the facility is used for prevention, control or reduction of air, water or noise pollution or solid or hazardous waste or to recycling or appropriately disposing of used oil bears to the entire time the facility is used for any purpose.

Applied to this Application

The certified facility cost is **$42,785** and the facility is used **100%** of the time for pollution control.

Compliance

ORS 468.180(1)

Criteria

The Environmental Quality Commission may not issue a certificate unless the applicant constructed or installed the claimed facility in accordance with the applicable provisions of ORS 454.010 to 454.040, 454.205 to 454.255, 454.505 to 454.535, 454.605 to 454.755, ORS chapters 459, 459A, 465, 466 and 467 and ORS chapters 468, 468A and 468B. This includes the rules and standards adopted to implement these provisions.

Applied to this Application

The DEQ staff member assigned to the source is Dennis Jurries in the Northwest region. Mr. Jurries affirmed the applicant's statement that the facility is in compliance with Department rules and statutes, and with EQC orders

DEQ issued the following permits to the applicant at this site:

- NPDES No 1200-COLS issued December 22, 1999; and
- Air Contaminant Discharge Permit No. 26-1869, issued September 24, 2002.

Reviewer: Maggie Vandehey, DEQ

State of Oregon
Department of
Environmental
Quality

Tax Credit Review Report

Pollution Control Facility: Water
Final Certification
ORS 468.150 -- 468.190
OAR 340-016-0005 -- 340-016-0080

Director's Recommendation

Approve Application No. **6558**

Applicant: **Larsen's Creamery, Inc.**

Certification of:		
Facility Cost		$92,654
Percentage Allocable	X	100%
Maximum Percentage	X	35%
Tax Credit		**$32,429**

Certificate Period: **5 years**

Applicant Identification

16940 SE 130th
Clackamas, OR 97015

Organized as: **S Corp.**
Taxpayer ID: **93-0699375**

Facility Identification

215 13th Street
Oregon City, OR 97045

The certificate will identify the facility as:

Dissolved Air Flotation (DAF), Model RSP-30 MS, Serial # WWW-1121-0302

Technical Information

Larsen's Creamery, Inc. produces and packages butter from cream. The applicant installed a wastewater treatment system to reduce total suspended solids (TSS), biological oxygen demand (BOD) and fats, oils, and grease (FOG) from wastewater discharged to the Oregon City sewage treatment plant. The applicant creates high levels of these pollutants during equipment washing. The applicant purchased a dissolved air flotation (DAF) system designed and installed by World Water Works. The DAF system creates micro-air-bubbles that cause suspended materials to float to the surface where they are skimmed off. The claimed facility reduced TSS from 700 parts per million (ppm) to 140 ppm; BOD from 6,500 ppm to 200 ppm; and FOG from 1644 ppm to 5 ppm.

Taxpayer Allowed Credit

ORS 315.304(4)

Criteria

The applicant must be:

(a) Owner, including a contract purchaser, of the trade or business that uses the Oregon property requiring a pollution control facility to prevent or minimize pollution; or

(a) Person who, as a lessee or pursuant to an agreement, conducts the trade or business that operates or utilizes such property.

Applied to this Application

Applicant is the **owner** of the business that uses the claimed facility.

Eligibility

Timely Filing
2001 Edition
ORS 468.165(6)

Criteria

The applicant must submit the application within one year after the date that they completed construction of the facility. The final application, however, is not valid if the applicant submits the application before they complete construction or before they place the facility into operation.

Applied to this Application

The applicant **submitted** the application **within** the **one-year** requirement. They completed construction on 2/1/2003, placed the facility into operation on 3/1/2003, and submitted the application on 7/22/2003. The applicant submitted the application after they completed construction and placed the facility into operation.

Purpose: Voluntary
ORS 468.155 (1)(a)(B)
OAR 340-016-0060(2)(b)

Criteria

The sole purpose, meaning the 'exclusive' purpose, of the claimed facility must be to prevent, control, or reduce a substantial quantity of water pollution.

> "Water pollution" means such alteration of the physical, chemical or biological properties of any waters of the state, including change in temperature, taste, color, turbidity, silt or odor of the waters, or such discharge of any liquid, gaseous, solid, radioactive or other substance into any waters of the state, which will or tends to, either by itself or in connection with any other substance, create a public nuisance or which will or tends to render such waters harmful, detrimental or injurious to public health, safety or welfare, or to domestic, commercial, industrial, agricultural, recreational or other legitimate beneficial uses or to livestock, wildlife, fish or other aquatic life or the habitat thereof.

Applied to this Application

The DAF system reduces a **substantial quantity** of **water pollution**. DEQ regulates TSS, BOD and FOG as water pollutants. DEQ requires that manufactures remove these pollutants prior to discharge to state waters. The applicant previously discharged to the Oregon City sewage treatment plant and the City removed these pollutants.

Method
ORS 468.155 (1)(b)(A)

Criteria
The prevention, control, or reduction must be accomplished by disposal or elimination of industrial wastewater and the use of a treatment works for industrial waste as defined in ORS 468B.005.

> "Industrial waste" means any liquid, gaseous, radioactive or solid waste substance or a combination thereof resulting from any process of industry, manufacturing, trade or business, or from the development or recovery of any natural resources.
>
> "Treatment works" means any plant or other works used for the purpose of treating, stabilizing or holding wastes.

Applied to this Application
The DAF system reduces TSS, BOD and FOG that **meets the definition of** industrial wastewater as defined by ORS 468B.005. The DAF system **meets the definition of** a treatment works in ORS 468B.005.

Exclusions
ORS 468.155(3)
OAR 340-016-0070(3)

Criteria
The regulations provide a list of more than 40 items excluded from the definition of a Pollution Control Facility. Items that do not meet the definition are ineligible for certification.

Applied to this Application
The application record did not indicate that the applicant included any ineligible costs.

Replacement
ORS 468.155(3)(e)

Criteria
The replacement or reconstruction of all or part of a facility that has previously been certified as a pollution control facility under ORS 468.170 is not eligible for the tax credit with two exceptions: 1) the facility was replaced due to a requirement imposed by DEQ or EPA that is different than the requirement to construct the original facility; or 2) the facility was replaced before the end of its useful life.

Applied to this Application
The claimed facility is **not a replacement** of a previously certified facility.

Maximum Credit
ORS 468.173(3)(f)

Criteria
The maximum tax credit is 35% if the applicant submitted the application between January 1, 2002 and December 31, 2008, inclusively; and the facility cost does not exceed $200,000.

Applied to this Application
The **maximum tax credit is 35%** because the applicant submitted the application on 7/22/2003, and the facility cost does not exceed $200,000.

Facility Cost

Copies of invoices substantiated the claimed facility cost.

Referenced Section	Description of Ineligible Portion		Cost
		Claimed	$92,654
	There are no deductions		
		Certified	**$92,654**

Facility Cost Allocable to Pollution Control

% Certification Criteria

ORS 468.170(1) The certified "percentage allocable" is limited to the portion of the actual facility cost that is properly allocable to the prevention, control, or reduction of water and air pollution.

ORS 468.190(1) The following factors establish the portion of costs properly allocable to pollution control for facilities that cost more than $50,000.

a. The extent to which the applicant uses the facility to recover and convert waste products into a salable or usable commodity;

b. The estimated annual percent return on the investment in the facility;

c. Any alternative methods, equipment, and costs for achieving the same pollution control objective;

d. Any related savings or increase in costs that occur or may occur as a result of the installation of the facility; and

e. Any **other relevant factors**.

Applied to this Application

The claimed facility produces no salable or usable commodities. The functional life of the facility that the Department would have used to calculate the return on investment is **5** years. The claimed facility has an annual operating cost of $28,664 per year. The ROI calculation determined 100% of the facility cost is allocable to pollution control. The percentage of the cost allocable to pollution control is **100%** when calculated according to OAR.

The applicant did not investigate an alternative technology because the claimed facility is the best available technology.

The applicant previously discharged to the Oregon City sewage treatment plant and the City removed TSS, BOD and FOG. The City charged the applicant to discharge high concentrations of these pollutants. By installing the claimed facility, the applicant realized a cost saving of $12,060 per year in reduced sewage treatment fees. The application record does not indicate there are any other relevant factors.

Compliance

ORS 468.180(1) Criteria

The Environmental Quality Commission may not issue a certificate unless the applicant constructed or installed the claimed facility in accordance with the applicable provisions of ORS 454.010 to 454.040, 454.205 to 454.255, 454.505 to 454.535, 454.605 to 454.755, ORS chapters 459, 459A, 465, 466 and 467 and ORS chapters 468, 468A and 468B. This includes the rules and standards adopted to implement these provisions.

Applied to this Application

There is no DEQ staff member assigned to the applicant's facility. The applicant stated that the facility and site are in compliance with Department rules and statutes, and with EQC orders. DEQ has not issued any permits to the site.

Reviewers: PBS Engineering and Environmental
Maggie Vandehey, DEQ

Attachment F - Ammended

Tax Expenditure Liability Report

03-05 Biennium

App #	Tax Credit	Placed in Operation	UL	Remaining UL	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
5736	24,557	1999	7	3	8,186	8,186	8,185	0	0	0	0	0	0	0
5974	1,266,407	2001	10	8	158,301	158,301	158,301	158,301	158,301	158,301	158,301	158,300	0	0
6095	$ 7,985	2001	7	5	1,597	1,597	1,597	1,597	1,597	0	0	0	0	0
6432	102,451	2001	10	8	12,806	12,806	12,806	12,806	12,806	12,806	12,806	12,809	0	0
6433	200,833	2001	10	8	25,104	25,104	25,104	25,104	25,104	25,104	25,104	25,105	0	0
6438	24,590	2002	5	4	6,148	6,148	6,148	6,146	0	0	0	0	0	0
6446	72,420	2001	10	8	9,053	9,053	9,053	9,053	9,053	9,053	9,053	9,053	0	0
6469	369,896	2002	10	9	41,100	41,100	41,100	41,100	41,100	41,100	41,100	41,100	41,096	0
6479	23,528	2002	7	6	3,921	3,921	3,921	3,921	3,921	3,923	0	0	0	0
6484	5,909	2002	10	9	657	657	657	657	657	657	657	657	653	0
6496	45,754	2001	7	5	9,151	9,151	9,151	9,151	9,150	0	0	0	0	0
6501	3,938	2001	10	8	492	492	492	492	492	492	492	494	0	0
6514	13,074	2002	7	6	2,179	2,179	2,179	2,179	2,179	2,179	0	0	0	0
6517	1,356,120	2002	10	9	150,680	150,680	150,680	150,680	150,680	150,680	150,680	150,680	150,680	0
6527	14,429	2003	10	10	1,443	1,443	1,443	1,443	1,443	1,443	1,443	1,443	1,443	1,442
6532	5,950	2002	7	6	992	992	992	992	992	990	0	0	0	0
6538	26,132	2001	10	8	3,266	3,266	3,266	3,266	3,266	3,266	3,266	3,270	0	0
6541	37,602	2002	10	9	4,178	4,178	4,178	4,178	4,178	4,178	4,178	4,178	4,178	0
6557	109,276	2002	7	6	18,213	18,213	18,213	18,213	18,213	18,211	0	0	0	0
6558	32,429	2003	5	5	6,486	6,486	6,486	6,486	6,485	0	0	0	0	0
6559	19,222	2002	20	10	1,922	1,922	1,922	1,922	1,922	1,922	1,922	1,922	1,922	1,924
6560	2,100	2003	10	10	210	210	210	210	210	210	210	210	210	210
6561	69,076	2003	20	10	6,908	6,908	6,908	6,908	6,908	6,908	6,908	6,908	6,908	6,904
6562	2,014	2001	5	3	671	671	672	0	0	0	0	0	0	0
6574	685,876	2001	10	8	85,734	85,734	85,734	85,734	85,734	85,734	85,734	85,738	0	0
6575	366	2003	5	5	73	73	73	73	74	0	0	0	0	0
6579	2,522	2003	5	5	504	504	504	504	506	0	0	0	0	0
6585	9,603	2003	5	5	1,921	1,921	1,921	1,921	1,919	0	0	0	0	0
6586	17,379	2003	5	5	3,476	3,476	3,476	3,476	3,475	0	0	0	0	0
6587	13,600	2003	5	5	2,720	2,720	2,720	2,720	2,720	0	0	0	0	0

Attachment F - Ammended

Tax Expenditure Liability Report

03-05 Biennium

App #	Tax Credit	Placed in Operation	UL	Remaining UL	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
6588	33,810	2003	10	10	3,381	3,381	3,381	3,381	3,381	3,381	3,381	3,381	3,381	3,381
6590	69,096	2002	20	10	6,910	6,910	6,910	6,910	6,910	6,910	6,910	6,910	6,910	6,906
6596	1,925	2003	5	5	385	385	385	385	385	0	0	0	0	0
6600	16,557	2003	10	10	1,656	1,656	1,656	1,656	1,656	1,656	1,656	1,656	1,656	1,653
6603	1,824	2003	7	7	261	261	261	261	261	261	258	0	0	0
6606	50,996	2002	7	6	8,499	8,499	8,499	8,499	8,499	8,501	0	0	0	0
6607	1,704	2002	7	6	284	284	284	284	284	284	0	0	0	0
6610	48,110	2002	10	9	5,346	5,346	5,346	5,346	5,346	5,346	5,346	5,346	5,342	0
6615	23,350	2001	10	8	2,919	2,919	2,919	2,919	2,919	2,919	2,919	2,917	0	0
6626	3,062	2002	7	6	510	510	510	510	510	512	0	0	0	0
Dec-03	**$ 4,815,472**				**598,243**	**598,243**	**598,243**	**589,384**	**583,236**	**556,927**	**522,324**	**522,077**	**224,379**	**22,420**
Oct-03	8,982,220				1,822,303	1,559,805	1,355,567	1,332,976	947,174	759,224	720,219	358,126	96,070	30,757
Total	13,797,692				2,420,546	2,158,048	1,953,810	1,922,360	1,530,410	1,316,151	1,242,543	880,203	320,449	53,177