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OREGON
ENVIRONMENTAL QUALITY
COMMISSION MEETING
MATERIALS 04/24/2008

State of Oregon
Department of Environmental Quality

Oregon Environmental Quality Commission Meeting

April 24 and 25, 2008

Department of Environmental Quality Headquarters
Room EQC A, 10th Floor
811 SW 6th Avenue
Portland, Oregon

Thursday, April 24—Regular meeting begins at 8:30 am

A. Preliminary Commission Business: Adoption of Minutes of the February 21-22, 2008 Regular Meeting
The Environmental Quality Commission (EQC) will review, amend if necessary, and approve draft minutes of the February 21-22, 2008, regular EQC meeting.

B. Informational Item: Update on the Status of the Umatilla Chemical Agent Disposal Facility (UMCDF)
Joni Hammond, Department of Environmental Quality (DEQ) Eastern Region Division Administrator, and Rich Duval, Administrator of DEQ's Chemical Demilitarization Program will give an update on the status of recent activities at the Umatilla Chemical Agent Disposal Facility (UMCDF). In August 2004, the EQC gave approval to start chemical weapon destruction at UMCDF and DEQ's Chemical Demilitarization Program continues close oversight of work at the facility.
Joni Hammond and Rich Duval, Department of Environmental Quality

C. Informational Item: Results of the Umatilla Chemical Agent Disposal Facility Post-Trial Burn Risk Assessment
Two screening-level risk assessments (with both human health and ecological components) have been completed by DEQ to evaluate the potential for emissions from the UMCDF to pose a threat to human health and the environment. The first screening-level risk assessment, the Pre-Trial Burn Risk Assessment (PreRA), was formally completed in February 1997, at which time the EQC issued hazardous waste and air permits to build and operate the UMCDF, based, in part, upon the results of the PreRA. This informational item will provide the EQC with background on the recently completed Post-Trial Burn Risk Assessment (PostRA) of the UMCDF and a summary of the PostRA's estimates of risk and hazard posed to human health and the environment by UMCDF operations.
Joni Hammond, Rich Duval, and Bruce Hope, Department of Environmental Quality

D. Informational Item: Director's Dialogue
Dick Pedersen, DEQ Acting Director, will discuss current events and issues involving DEQ.

E. Public Forum
The EQC will provide members of the public an opportunity to speak on environmental issues that are not part of the agenda for this meeting. Individuals wishing to speak to the EQC must sign a request form at the meeting and limit presentations to five minutes. The EQC may discontinue public forum after a reasonable time if a large number of speakers wish to appear. In accordance with ORS 183.335(13), no comments may be presented on rule adoption items for which public comment periods have closed.

Working Lunch
The EQC will meet in executive session from approximately 12:30 p.m. to 1:15 p.m. to consider the employment of a new DEQ director. Only representatives of the media may attend and media representatives may not report on any deliberations taking place during the session.[1]

F. Action Item: Pollution Control Tax Credits
The Pollution Control Facilities Tax Credit regulations direct the EQC to "certify a pollution control, solid waste, hazardous waste or used oil facility or portion thereof if the Commission finds that the facility qualifies as a pollution control facility." EQC certification entitles an Oregon taxpayer to subtract up to 35 percent of the facility's cost from its Oregon tax liability.
Maggie Vandehey, Department of Environmental Quality

G. Informational Item: Presentation by Oregon Environmental Council on Recently Published Research Findings
Andrea Durbin, executive director of the Oregon Environmental Council (OEC), will discuss OEC's recently published reports "Pollution in People" and "The Price of Pollution," as well as OEC's current work on toxics reduction. This presentation is timed to coincide with a joint evening meeting between the EQC and OEC's board of directors (see below for time and location information.)

H. Public Hearing: Proposed Greenhouse Gas Reporting Rules
On July 17, 2007, Governor Kulongoski asked the EQC to consider adopting rules for mandatory greenhouse gas reporting as soon as possible. DEQ issued proposed rules on April 1, 2008, and will accept comments on them through May 16, 2008. Senate Bill 107 (2007) introduced a provision which allows Title V Operating Permit holders to request a hearing before the EQC on any proposed rule that goes beyond federal requirements. In anticipation of receiving such a request and to provide the public with an opportunity to be heard in front of the EQC, DEQ has scheduled a hearing on April 24th at 2:45 pm. DEQ has scheduled additional public hearings at several locations to accept comments on the proposed rules, including: Bend, Corvallis, Eugene, Klamath Falls, Medford, Pendleton, and Portland.
Dick Pedersen and Marianne Fitzgerald, Department of Environmental Quality

Thursday, April 24 – Evening Meeting 5:00 – 8:00 pm
The EQC will hold a joint meeting with the Oregon Environmental Council's board of directors at the NW Natural Building, 220 NW Second Avenue, 4th Floor Eastside Hospitality Room, Portland. The meeting is open to the public.

Friday, April 25—Regular meeting begins at 9:30 am

The Commission will meet in executive session from 8:30 am to 9:30 am to consult with counsel concerning legal rights and duties regarding current or potential litigation against the DEQ. Only representatives of the media may attend and media representatives may not report on any deliberations during the session. [2]

I. Action Item: Recycled Water Use Rules
The term "recycled water," also referred to as reclaimed water, means the water discharged from a municipal wastewater treatment facility that is used for a specific beneficial purpose, depending on the quality of treatment. Recycled water may not be used for drinking water. The use of recycled water requires a water quality permit and is regulated under rules adopted by the EQC in 1990. A 2005 Governor's Executive Order directed DEQ to make appropriate revisions to DEQ rules and policies to remove potential regulatory barriers and to encourage water reuse in Oregon. DEQ convened a Water Reuse Task Force in May 2006 to develop recommendations for rule revisions. The EQC will consider adoption of proposed rules that would expand the possible uses of recycled water and clarify the requirements for its use.
Neil Mullane and Judy Johndohl, Department of Environmental Quality

J. Informational Item: Commissioner Reports

K. Informational Item: Preliminary 2009 Legislative Agenda
DEQ management and the EQC will discuss the development of legislative concepts and budget policy packages for the 2009 Legislative session. DEQ was required to submit draft legislative concepts to the Department of Administrative Services (DAS) on April 4, 2008, and will submit its Agency Request Budget by September 1, 2008 to DAS and the Governor's Office. The EQC chairperson must certify DEQ's Agency Budget Request at the August 2008 EQC meeting.
Dick Pedersen and Division Administrators, Department of Environmental Quality

L. Recognition of Chairwoman Lynn Hampton's service on the EQC

Adjourn

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[1] This executive session will be held pursuant to ORS 192.660(2)(a).

[2] This executive session will be held pursuant to ORS 192.660(2)(f), (h).

Future Environmental Quality Commission meeting dates include:

June 19 - 20, 2008 (Medford, Oregon)
August 21 - 22, 2008 (eastern Oregon, location TBD)
October 23 - 24, 2008
December 11 - 12, 2008

Agenda Notes

Staff Reports: Staff reports for each item on this agenda can be viewed and printed from DEQ's Web site at http://www.deq.state.or.us/about/eqc/eqc.htm. To request a particular staff report be sent to you in the mail, contact the EQC Assistant, Department of Environmental Quality, Director's Office, 811 SW Sixth Avenue, Portland, Oregon 97204; telephone 503-229-5990, toll-free 1-800-452-4011 extension 5990, or 503-229-6993 (TTY). Please specify the agenda item letter when requesting reports. If special physical, language or other accommodations are needed for this meeting, please advise the EQC Assistant as soon as possible, but at least 48 hours in advance of the meeting.

Public Forum: The Commission will provide time in the meeting during the afternoon of Thursday, April 24, for members of the public to speak to the Commission. Individuals wishing to speak to the Commission must sign a request form at the meeting and limit presentations to five minutes. The Commission may discontinue the public forum after a reasonable time if a large number of speakers wish to appear. In accordance with ORS 183.335(13), no comments may be presented on Rule Adoption items for which public comment periods have closed.

Note: Because of the uncertain length of time needed for each agenda item, the Commission may hear any item at any time during the meeting. If a specific time is indicated for an agenda item, an effort will be made to consider that item as close to that time as possible. However, scheduled times may be modified if participants agree. Those wishing to hear discussion of an item should arrive at the beginning of the meeting to avoid missing the item.

The Environmental Quality Commission is a five-member, all volunteer, citizen panel appointed by the governor for four-year terms to serve as DEQ's policy and rule-making board. Members are eligible for reappointment but may not serve more than two consecutive terms.

Lynn Hampton, Chairwoman
Lynn Hampton recently retired as Tribal Prosecutor for the Confederated Tribes of the Umatilla Indian Reservation and previously was Deputy District Attorney for Umatilla County. She received her B.A. at University of Oregon and her J.D. at University of Oregon School of Law. Commissioner Hampton was appointed to the EQC in July 2003 and lives in Pendleton.

Ken Williamson, Commissioner
Ken Williamson is head of the School of Chemical, Biological and Environmental Engineering at Oregon State University. He received his B.S. and M.S. at Oregon State University and his Ph.D. at Stanford University. Commissioner Williamson was appointed to the EQC in February 2004 and reappointed in May, 2007. He lives in Corvallis. He represents the EQC on the Oregon Watershed Enhancement Board (OWEB).

Judy Uherbelau, Commissioner
Judy Uherbelau is a graduate of Ball State University with a B.S. in Economics/Political Science. She received a J.D. from UCLA School of Law and recently closed her law practice with Thomas C. Howser, PC in Ashland. Judy served in the Peace Corps and the Oregon House of Representatives as well as numerous boards and commissions. Commissioner Uherbelau was appointed to the EQC in February 2005 and lives in Ashland.

Donalda Dodson, Commissioner
Donalda Dodson is currently Interim Executive Director of the Oregon Child Development Coalition. Previously, she served as Administrator of the Department of Human Services Office of Family Health and as Manager of the Maternal/Child Health Program at the Marion County Health Department. Donalda has a Bachelor of Science degree in nursing and a master's degree in public health. She has chaired or served on nearly a dozen public health committees and task forces and expresses a strong interest in bringing environmental issues into the public health arena. Commissioner Dodson was appointed to the EQC in August of 2005 and reappointed in July of 2007. She resides in Salem.

Bill Blosser, Vice Chairman
Bill Blosser is owner of William Blosser Consulting. He is employed by, and has held several positions with CH2M Hill in Portland. Bill served as Director of the Oregon Department of Land Conservation and Development from 2001-2002 and was formerly president of Sokol Blosser Winery in Dundee, Oregon. Bill has served on and chaired numerous commissions and task forces, including terms as chair of the Water Resources Commission, chair of the Land Conservation and Development Commission and chair of the Policy Advisory Committee on Water Quality to the EQC. Bill has a Bachelor of Arts degree in history and humanities from Stanford University and a master's degree in regional planning from the University of North Carolina, Chapel Hill. Commissioner Blosser was appointed to the EQC in January 2006 and lives in Portland.

Dick Pedersen, Acting Director
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Wendy Simons, Assistant to the Commission
Telephone: (503) 229-5301

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EQC Meeting Agenda

Thursday, April 24 and Friday, April 25, 2008
DEQ Headquarters, Room EQC-A
811 SW 6th
Portland, Oregon

Thursday, April 24--*Regular Meeting*

Time	Item	Topic	Presenter/Status	Background
8:30 15 min	A	Preliminary Commission Business: Adoption of minutes of the February 21-22, 2008 regular meeting		Routine
8:45 30 min	B	Informational Item: Update on the status of the Umatilla Chemical Agent Disposal Facility (UMCDF)	Joni Hammond and Rich Duval	Routine
9:15 90 min	C	Informational Item: Human health and ecological risk assessment	Joni Hammond, Rich Duval and Bruce Hope	Preparation for June action item.
10:45 15 min		BREAK		
11:00 60 min	D	Informational item: Director's Dialogue	Dick Pedersen	
12:00 30 min	E	Public Forum		
12:30 45 min		Working Lunch: Executive session		Discuss new director recruitment.
1:15 15 min	F	Action Item: Pollution control tax credits	Maggie Vandehey	
1:30 60 min	G	Informational Item: Presentation on recently published research findings	Andrea Durbin, Oregon Environmental Council	
2:30 15 min		BREAK		
2:45 60 min	H	Public hearing: Greenhouse gas reporting rules	Andy Ginsburg and Marianne Fitzgerald	Brief presentation on work of advisory group, followed by opportunity for public comment on proposed rules.
3:45		End of first day		

Contact: Wendy Simons (503) 229-5301
Revised 4/8/2008 10:50 AM

Thursday evening: 5:00 - 8:00 pm Dinner meeting with Oregon Environmental Council Board of Directors, Eastside Hospitality room at the NW Natural Building, 220 NW Second Avenue, 4th floor, Portland

Friday, April 25--*Regular Meeting*

Time	Item	Topic	Presenter/Status	Background
8:30 60 min		Executive Session		Discuss current and pending litigation with counsel.
9:30 30 min	I	Action item: Recycled water use rules	Neil Mullane and Judy Johndohl	Rule adoption.
10:00 15 min	J	Informational item: Commissioner reports	Commission members	
10:15 15 min		BREAK		
10:30 120 min	K	Informational item: Budget and legislative agenda development	Dick Pedersen and DEQ legislative team	Update for the EQC about development of legislative concepts and policy packages.
12:30 30 min	L	Recognition of Lynn Hampton's service as EQC Chairwoman	Dick Pedersen	
1:00		Adjourn		

Contact: Wendy Simons (503) 229-5301
Revised 4/17/2008

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EQC Meeting Agenda

Thursday, April 24 and Friday, April 25, 2008
DEQ Headquarters, Room EQC-A
811 SW 6th
Portland, Oregon

Thursday, April 24--*Regular Meeting*

Time	Item	Topic	Presenter/Status	Background	
8:30 15 min	A	Preliminary Commission Business: Adoption of minutes of the February 21-22, 2008 regular meeting		Routine	minutes done
8:45 30 min	B	Informational Item: Update on the status of the Umatilla Chemical Agent Disposal Facility (UMCDF)	Joni Hammond and Rich Duval	Routine	* white folder
9:15 90 min	C	Informational Item: Human health and ecological risk assessment	Joni Hammond, Rich Duval and Bruce Hope	Preparation for June action item.	*
10:45 15 min		BREAK			
11:00 60 min	D	Informational item: Director's Dialogue	Dick Pedersen		* white folder
12:00 30 min	E	Public Forum			
12:30 45 min		Working Lunch: Executive session		Discuss new director recruitment.	
1:15 15 min	F	Action Item: Pollution control tax credits	Maggie Vandehey		*
1:30 60 min	G	Informational Item: Presentation on recently published research findings	Andrea Durbin, Oregon Environmental Council		* received in email
2:30 15 min		BREAK			
2:45 60 min	H	Public hearing: Greenhouse gas reporting rules	Andy Ginsburg and Marianne Fitzgerald	Brief presentation on work of advisory group, followed by opportunity for public comment on proposed rules.	* available 4/1 (rulemaking packet)
3:45		End of first day			

Contact: Wendy Simons (503) 229-5301
Revised 3/11/2008

Thursday evening: 5:00 - 8:00 pm Dinner meeting with Oregon Environmental Council Board of Directors, Eastside Hospitality room at the NW Natural Building, 220 NW Second Avenue, 4th floor, Portland

Friday, April 25--*Regular Meeting*

Time	Item	Topic	Presenter/Status	Background
8:30 60 min		Executive Session		Discuss current and pending litigation with counsel.
9:30 30 min	I	Action item: Recycled water re-use rules	Neil Mullane and Judy Johndohl	Rule adoption.
10:00 15 min	J	Informational item: Commissioner reports	Commission members	
10:15 15 min		BREAK		
10:30 120 min	K	Informational item: Budget and legislative agenda development	Dick Pedersen and DEQ legislative team	Update for the EQC about development of legislative concepts and policy packages.
12:30 30 min	L	Recognizing Lynn Hampton's service as EQC Chairwoman	Dick Pedersen	
1:00		Adjourn		

Contact: Wendy Simons (503) 229-5301
Revised 3/11/2008

Please Sign In

Environmental Quality Commission Meeting
Portland, Oregon April 24 & 25, 2008

Name	Organization	Phone
DOUG HAMRICK	WASHINGTON DEMIL CO	541 564 7110
James T. Wenzl	Washington Demil Co	541 5647393
MICHAEL J. STRAUS	UMCDF	(541)564-7058
MARC ADAMS	DAU	503 947 4700
Karyn Jones	CASP, OWF, SLUWG	541-567-6579
GARY NAPP	ENVIRO MGT (for WDC)	610-640-4401
RUSS PROCTOR	USCG COTP PORTLAND	503.240.9314
Mike Slater	Yamhill Grade School	503-662-4307
Mike Slater	USEPA	503 326-5872
Larry Harvey	P/W Comm	503 685-7582
SUE OLIVER	ELEMENTS UNLIMITED	541-379-2767
Kate McCutcheon	BMPC	5036504218
Kathryn VanNatta	NWPPA	503-844-9540
Andrea Durbin	OEC	
Renee Hackenmiller-Paradis	OEC	
Tom O'Connor	OR Municipal Elec. Utilities	503-371-6625
JAY GRIFFITH	EVRAZ OREGON STEEL	503 978 6638
Doug Rumpel	WES	503-794-8050
Ted Ulrich	Dynic USA	703-699-1070
Alicia Little	Dyno Nobel	503-397-7502
Jeff O'Leary	Waste Mgmt	503-857-5870
Margaret Oscilia	PBS Engineering	360-213-0461
MYRON BURR	SILTRONIC	503-219-7832
Harlan Levy	NFIB	503-364-4450
Dave Barrows	Dave Barrows + Associates	503-227-5591

Please Sign In

Environmental Quality Commission Meeting
Portland, Oregon April 24 & 25, 2008

Name	Organization	Phone
Doug Rumpel	WES	503-794-8050
Ken Kauffmann	DHS - Health	971 673 0435
Kristen Mitchell	ORRA	503/509 1837
Liam Davis	OSA	503 641-0990
Mark Yeager	City of ALBANY	541-917-7658

Approved ___
Approved with Corrections ___

Minutes are not final until approved by Commission.

Oregon Environmental Quality Commission
Minutes of the Three Hundred and Forty-second Meeting

February 21-22, 2008

Thursday, February 21 – Regular meeting began at 11:10 a.m.
DEQ Headquarters, 811 SW 6th Avenue, Room EQCA
Portland, Oregon 97204

Regular Meeting

The Environmental Quality Commission (EQC, Commission) held a public meeting beginning at 11:10 a.m. on February 21, 2008, at the Department of Environmental Quality (DEQ, Department) headquarters building, 811 SW 6th, Room EQCA, Portland, Oregon.

The following members of the Environmental Quality Commission were present:

Lynn Hampton, Chairwoman
Bill Blosser, Vice Chairman
Kenneth Williamson, Member
Donalda Dodson, Member
Judy Uherbelau, Member

(Note: Some agenda items were taken out of order due to time considerations and to accommodate out-of-town presenters.)

A. Preliminary Commission Business: Adoption of Minutes of the December 13 – 14, 2007 Regular Meeting and January 8, 2008 Special Meeting
The Commission reviewed and approved draft minutes of the December 13-14, 2007, regular meeting and January 8, 2008, special meeting.

I. Informational Item: Recycled Water Use Proposed Rules
Judy Johndohl from DEQ informed Commissioners about the work of the Water Re-use Task Force which was convened in May 2006 to develop recommendations for rule revisions. Mark Yeager, city of Albany and a member of the task force, presented information on several recycled water projects around the state, while Ken Kauffman of the Department of Human Services answered questions related to

human health considerations. This information item was intended to prepare the Commission to consider adoption of the proposed revisions at its April meeting.

B. Informational Item: Update on the Status of the Umatilla Chemical Agent Disposal Facility (UMCDF)

Joni Hammond, acting deputy director, and Rich Duval, administrator of DEQ's chemical demilitarization program, gave an update on the status of recent activities at the Umatilla Chemical Agent Disposal Facility (UMCDF). VX trial burns have all been completed, the VX rocket campaign was completed January 23, 2008, and the destruction of VX 155 mm projectiles is scheduled to begin in March, 2008. As of February 7, 2008, 45 percent of all Umatilla munitions and bulk containers and 25.4 percent of the original Umatilla stockpile (by agent weight) have been destroyed. Two EQC determinations concerning best available technology (BAT) remain, scheduled for public comment by March 2008 and a hearing before the EQC in June 2008. The extended public comment period on the secondary wastes BAT determination opened January 15 and will close February 29, 2008. EPA Region X conducted an oversight audit of the facility December 17-20, 2007, and identified no compliance issues.

Working Lunch: The Commission held an Executive Session from 12:30 to 1:35 pm to discuss recruitment efforts for a new DEQ director.

C. Action Item: Director's Transactions for Commission Review

Oregon Accounting Policy and DEQ policy require that the Commission review and approve certain financial transactions of the DEQ Director on an annual basis. Laura Arcidiacono of DEQ's accounting department presented information to the EQC on the 2007 transactions of the former director and current acting director. Commissioner Dodson moved that the Commission approve the director's transactions for 2007. Commissioner Williamson seconded the motion, and it was approved unanimously by the Commission.

Presentation of Accounting Gold Star Certificate

For the 16th year, DEQ's accounting section has received the State Controller's Gold Star Certificate. This is awarded to agencies that provide the Department of Administrative Services accurate, complete and timely financial information at year end, enabling the preparation of Oregon's Comprehensive Annual Financial Report.

J. Action Item: Issuance of DEQ Pollution Control Bonds

Jim Roys of DEQ presented background information to the Commission about the history and use of pollution control bonds. The Commission must approve a resolution in order for DEQ to issue bonds. Approval of this bond sale will provide DEQ with $4.5 million for the orphan-site cleanup program in the 2007-2009 biennium and $4.8 million in matching funds for up to $24 million of federal Clean Water State Revolving Fund (CWSRF) grants in the same period. Vice Chairman Blosser moved that the Commission approve the resolution to issue pollution control bonds in the amounts specified. Commissioner Williamson seconded the motion, and the Commission approved it unanimously.

D. Action Item: Align Tank Rules with Federal Regulations, Improve Existing Rules

Mitch Scheel and Wendy Wiles of DEQ presented proposed changes to tank rules that will protect federal grant funding by aligning DEQ underground storage tank (UST) regulations with federal law (Energy Policy Act of 2005), implement changes approved by the 2007 Oregon Legislature in Senate Bill (SB) 104, and ensure operating facilities have pollution liability insurance to clean up leaks. Commissioner Uherbelau moved to adopt the proposed rule revisions. Commissioner Dodson seconded the motion, and the revisions were approved unanimously.

E. Informational Item: Director's Dialogue

Dick Pedersen, acting DEQ director, discussed current events and issues involving DEQ and the state.

G. Public Forum

At every regular public meeting, the EQC provides members of the public an opportunity to speak on environmental issues that are not part of the agenda for the meeting. The following people came forward:

- Brett VandenHeuvel, Columbia Riverkeeper, spoke about the proposed Bradwood LNG facility. He expressed concern that this project would take 58 acres of salmon territory, and that the wake from LNG-carrying ships would strand juvenile salmonids on shore. In his observation, there is wide public opposition to the project due to several reasons: safety fears; wish to move away from fossil fuels; fear that the gas will go to California while Oregon will bear the brunt of the environmental impact; the lifecycle analysis of LNG is unfavorable; and fear of losing land to eminent domain for associated pipelines. He agrees with the governor that a needs assessment must be done in order to make findings under various state laws. Mr. VendenHeuvel presented a handout to the Commission containing photos of the proposed site.

- Regina Chichizola, Klamath Riverkeeper, encouraged the EQC to find a way to tackle agricultural pollution in Klamath river basin. The area has a problem with toxic algae, due to agricultural pollution and point source pollution in the upper basin. She expressed concern about CAFOs in the area, and that major sources are violating water quality permits, permits which are not always kept up-to-date. She fears that if action isn't taken to clean up the Klamath, commercial salmon fishing in Oregon will be shut down. The Keno reservoir in the basin is extremely polluted and salmon won't survive passage through it. Ms. Chichizola would like the Oregon legislature to give DEQ power to regulate non-point sources. She wants DEQ and EQC to take water quality in the Klamath basin seriously, both permitting and enforcement, pointing out that the Klamath and Lost river TMDLs are coming up soon and that water quality issues need to be considered in the restoration agreement currently under negotiation. Ms. Chichizola brought a recent copy of her organization's newsletter to share with the Commission.

- Armand Minthorn of the Umatilla Tribe expressed concern about the issuance of a new Title V permit for the Umatilla Chemical Agent Disposal Facility (UMCDF). Specifically, he is concerned that emission standards will be relaxed once Title V is approved because stricter RCRA standards will no longer apply. Mr. Minthorn also asked the EQC to take the special needs of tribes into account when making BAT determinations in the next few months. The Tribe is concerned about the future closure of the weapons depot, and wants due process for the resources and environment after the depot closes. The site is one of the last remaining places in the northwest having a shrub steppe climate, which is rich in tribal cultural resources. Tribal Elders have identified several plants with food and medicinal value at the depot site. Mr. Minthorn promised to provide written materials to the EQC at a later date.

- David Monk, Eugene resident and board member of Oregon Toxics Alliance and the Land Regional Air Protection Agency, addressed many subjects. He pled with the EQC back in December 2006 to get people to use stage 1 recovery equipment for benzene; many facilities with the equipment still do not use it. He is in favor of the planned research project on alternatives to field burning, but told the EQC that many folks affected by smoke feel like the study is just a delay tactic. They would like to see farmers stockpiling grass straw as a way of demonstrating good faith. Lane County and the Oregon Department of Forestry are trying to determine the feasibility of gathering wood chips and debris from forests for use as hog fuel, which ties into LRAPA's work on discouraging open burning. Mr. Monk encouraged the EQC to look on LRAPA's rulemaking as an example of innovation on some difficult issues.

- Lauren Goldberg, student director of the Northwest Environmental Defense Center, expressed that her organization would like DEQ to take public input earlier in the department's process for developing a regional haze rule and evaluating the best available retrofit technology (BART) for major sources of visibility-impairing pollution. She encouraged the EQC to appoint a strong environmental advocate as the new director of DEQ, someone who will take public input into account. Ms. Goldberg brought written comments for the Commission.

F. Action Item: Division 11 "Disclosure of Relationship between Proposed Rules and Federal Requirements" Rule

Andy Ginsburg and Larry McAllister of DEQ presented information on the proposed rules to the Commission. The revisions to Division 11 will modify disclosure procedures, including updating the form by which DEQ rule writers disclose information to the public on the relationship between proposed rule changes and requirements in federal regulations. The revisions will also allow stakeholders subject to the Title V permit program an additional opportunity for a hearing before the EQC. Vice Chairman Blosser moved that the EQC approve the proposed rule changes. Commissioner Dodson seconded the motion, and the Commission approved it unanimously.

H. Action Item: Clean Water State Revolving Fund Program Rules

Neil Mullane and Larry McAllister presented information on the proposed rules for the Clean Water State Revolving Fund (CWSRF) program. The CWSRF program is a federal Clean Water Act program that has been administered by DEQ since the program's inception in 1987. This loan program provides low-interest loans to public entities to resolve water pollution problems, and then the loan repayments are loaned out again to other communities. The rule amendments will provide DEQ with the authority to implement an updated state environmental review process and remain eligible for the annual federal EPA capitalization grant. Commissioner Williamson moved that the Commission approve the proposed rule revisions. Commissioner Dodson seconded the motion, and the Commission approved it unanimously.

K. Informational Item: EQC's Own Performance Measures

Joanie Stevens-Schwenger of DEQ gave an overview of the EQC's performance measures and its progress thus far toward meeting performance standards for fiscal year 2007. The August EQC meeting will include the first annual self-evaluation by the EQC, results of which will be reported to the Legislature in September, 2008.

Friday, February 22 – Regular meeting began at 9:50 am.

The Commission met in executive session from 8:00 am until 9:45 to consult with counsel concerning legal rights and duties regarding current or potential litigation against the DEQ.

L. Informational Item: Field Burning

Andy Ginsburg of DEQ, Lisa Hanson, deputy director of the Oregon Department of Agriculture (ODA), Larry Brice, Novus Group, Mike McKenzie-Bahr, Lane County Community Economic Development Coordinator presented information on a health study that will be undertaken by DEQ and a feasibility study by Seed Growers Council and ODA. The health study will focus on health effects of exposure to fine particulate generally, including exposure from field burning, to help the EQC make future decisions on setting state particulate standards. The feasibility study will examine alternatives to field burning, focusing on energy generation from grass straw.

M. Action Item: Amend Plant Site Emission Applicability Rule

The Commission adopted a temporary rule to correct a recently-discovered error in the Air Quality permitting program rules. If left uncorrected, the rule would have caused a significant amount of unnecessary staff work and unnecessary cost to regulated facilities without benefiting the environment. Gregg Dahmen of DEQ explained that the department plans to return to the Commission in August with permanent rule changes to remedy the error. Vice Chairman Blosser moved to adopt the temporary rule. Commissioner Williamson seconded the motion, and it passed unanimously.

N. Informational Item: Preliminary 2009 Legislative Agenda

Greg Aldrich of DEQ presented the Commission with DEQ's preliminary list of budget policy packages, focusing on issues which are of special interest to the EQC. The next steps in budget development are refining the packages and setting priorities in preparation for discussing package with stakeholders.

O. Informational Item: Commissioners' Reports

Commissioner Williamson reported that the Oregon Water Enhancement Board (OWEB) is trying to fund some special initiatives, and has just committed to its first one in the Deschutes basin for $22 million

Vice Chairman Blosser reported on the progress of the new director search. The recruitment is still open, and the hiring subcommittee is still receiving applications. The EQC isn't ready to close the recruitment period yet, but will be ready soon. Several people have inquired whether the Commission will allow stakeholders to interview and/or meet candidates; the EQC hasn't had a chance to talk about this possibility yet. Commissioner Dodson has had experience with other public bodies setting up community meetings where the public can ask questions of candidates.

Commissioner Uherbelau expressed her appreciation for the news articles that Commissioner Williamson routinely forwards to the other Commissioners on various environmental issues.

Meeting adjourned at 12:25 pm.

State of Oregon
Department of
Environmental
Quality

Umatilla Chemical Demilitarization Program
Status Update
Environmental Quality Commission
April 24, 2008
(Agenda Item B)

Agent Processing at the Umatilla Chemical Agent Disposal Facility (UMCDF)

Cumulative Operations:

As of April 6, 2008, 79 percent of all Umatilla munitions and bulk containers and 32 percent of the original Umatilla stockpile (by agent weight) have been destroyed.

VX Operations:

The UMCDF completed the changeover from VX rocket to VX projectile (155 mm) processing during this reporting period. The 155 mm VX projectile campaign began March 20, 2008, with the receipt and start of the dismantling/draining operations; the first VX projectile was processed through the metal parts furnace on the following day (March 21, 2008).

The UMCDF is on target to begin the chlorine emissions demonstration test required as a prerequisite to final approval of Class 3 Permit Modification Request UMCDF-07-006-DFS(3), "Minimum Temperature Limit Change on the DFS," on April 21, 2008. This permit modification request proposed lowering the minimum temperature for operation of the Deactivation Furnace System during projectile processing in order to alleviate aluminum build-up. In order to conduct the test, the UMCDF is currently operating under a temporary authorization at the lower temperature setpoints.

VX munitions/bulk items comprise 7.7 percent of the total Umatilla stockpile (by agent weight). As of April 6, 2008, the UMCDF had destroyed 14,519 VX rockets and warheads, one VX ton container, 156 VX spray tanks, and 4,976 155 mm VX projectiles. This represents approximately:

- 100 percent of the VX rockets
- 100 percent of the VX spray tanks
- 100 percent of the VX ton containers
- 15 percent of the VX 155 mm projectiles
- 31 percent of the VX munitions
- 53 percent of the VX agent

Processing of VX-contaminated secondary wastes in the metal parts furnace continues, but is limited to wastes not originally intended for the Dunnage Incinerator. The Army has chosen to send all other VX-contaminated secondary wastes to permitted storage in J-Block pending resolution of the secondary waste best available technology determination.

GB Operations:

GB munitions/bulk items processing has been completed. This represented:

- 70.5 percent of all Umatilla munitions and bulk containers
- 21.4 percent of the original Umatilla stockpile (by agent weight)

The multiagent monitoring changes specific to GB have been completed. This will allow the UMCDF to process GB-contaminated secondary wastes, currently in permitted storage, during the VX campaign.

Other UMCDF Chemical Demilitarization Program News

GASP IV Judgment: To address this judgment, the EQC must make two remaining determinations as to whether the UMCDF utilizes the best available technology (BAT) and has no major adverse impact on public health and the environment.

In June 2008, the EQC will be asked to issue findings on the best available technology for management of wastes originally intended for the Dunnage Incinerator and, based on the human health and ecological risk assessment, that operation of the UMCDF has no major adverse impact on public health and the environment.

In August 2008, the EQC will be asked to issue findings on the best available technology for management of mustard ton containers containing significantly higher mercury levels than identified in the original application and the role of the pollution abatement system carbon filter system (PFS).

UMCDF PMR Activity:

SUBMITTALS		
PMR#	Title	Submitted
*UMCDF-08-007-PFS(1N)	Clean Liquor for Venturi Scrubber Shaft Seals As-Built	2/12/2008
*UMCDF-08-009-MPF(1R)	CCTV Camera for MPF	2/15/2008
*UMCDF-08-004-MISC(1R)	Elimination of Various Permit Requirements	2/26/2008
*UMCDF-08-012-MISC(1N)	Redline Annual Update-Furnances	3/3/2008
*UMCDF-08-011-MON(1R)	Multiagent Monitoring ACAMS Updates	3/4/2008
*UMCDF-08-002-MON(1R)	Agent Changeover Monitoring Clarification	3/4/2008
UMCDF-08-008-WAP(2)	WAP Update for Spent Carbon Sampling and Analysis Requirements	3/11/2008
** Also approved or accepted during this reporting period.*		

APPROVALS/ACCEPTANCES		
PMR#	Title	Approved/ Accepted
UMCDF-08-003-MISC(1N)	Redline Annual Update-General PAS	2/8/2008
UMCDF-08-007-PFS(1N)	Clean Liquor for Venturi Scrubber Shaft Seals As-Built	2/15/2008
UMCDF-08-004-MISC(1R)	Elimination of Various Permit Requirements	2/29/2008
UMCDF-08-012-MISC(1N)	Redline Annual Update-Furnaces	3/12/2008
UMCDF-08-009-MPF(1R)	CCTV Camera for MPF	3/4/2008
UMCDF-08-011-MON(1R)	Multiagent Monitoring ACAMS Updates	3/13/2008
UMCDF-08-002-MON(1R)	Agent Changeover Monitoring Clarification	3/25/2008
UMCDF-07-022-WAP(2TA)	Alternate Decontamination Solution and WAP Update (EA 2192)	04/04/2008

WITHDRAWALS		
PMR#	Title	Withdrawn
UMCDF-07-014-MPF(2)	MPF DAL Low-Temperature Monitoring Changes	2/20/2008

IN PROCESS: The following PMN and PMRs are under Department review (includes PMR 08-008, which was also submitted during this period).

PMR#	Title	Received	Public Comment Period Close	Target Decision Date
UMCDF-05-034-WAST(3)	Deletion of the DUN and Addition of the CMS	10/25/05	12/24/05[1]	TBD
UMCDF-07-005-MISC(2)	Condition II.M-Liability Insurance Requirement Changes	01/30/07	04/02/07	10/01/08
UMCDF-07-006-DFS(3TA)	Minimum Temperature Limit Change on the DFS	01/16/07	04/25/08[2]	05/16/08
UMCDF-08-008-WAP(2)	WAP Update for Spent Carbon Sampling and Analysis Requirements	03/11/08	05/12/08[1]	06/09/08
UMCDF-08-013-MISC(1N)	Annual Procedures Update	04/03/08	N/A	06/02/08

[1] Initial (permittee) public comment period.
[2] Department (draft permit) public comment period.

Significant Events at Other Demilitarization Facilities

Unless otherwise stated, all data is as of April 7, 2008.

Anniston Chemical Agent Disposal Facility (ANCDF), Alabama

The ANCDF continues to process VX 155 mm projectiles. The ANCDF has destroyed nearly 85 percent of its stockpile of VX projectiles and over 44 percent of Anniston's entire stockpile.

Newport Chemical Agent Disposal Facility (NECDF), Indiana

The NECDF has drained 1,467 VX ton containers (87 percent of the stockpile), with 223 VX ton containers remaining. Of the original 1,690 VX ton containers, 1,402 have been decontaminated. The NECDF has shipped 309 intermodal containers offsite for incineration. Of the 1,108,791 gallons shipped, 1,086,794 gallons have been destroyed. The U.S. has received credit for destroying 1,835,400 pounds (destruction of VX equivalent hydrolysate) of the Newport stockpile under the CWC treaty.

Pine Bluff Chemical Agent Disposal Facility (PBCDF), Arkansas
The PBCDF began VX operations in October 2007 with the processing of VX rockets. The PBCDF completed VX rocket processing in February 2008, and is now in changeover to the VX mine campaign. The PBCDF has destroyed 15 percent of its total stockpile (by agent weight).

Tooele Chemical Agent Disposal Facility (TOCDF), Utah
The TOCDF has processed 2,271 ton containers containing HD mustard (blister) agent, which is over 35 percent of the HD ton containers stored at the Deseret Chemical Depot. Processing continues to be limited to only those ton containers that show a concentration of 1 ppm or less of mercury contamination. Work continues on designing a carbon filtration system that will provide sufficient flue gas mercury removal to allow the processing of mustard that has been determined to have mercury concentrations in excess of 1 ppm.

HD ton container sampling also continues. Of the original 6,397 ton containers, 5,462 have been sampled.

On November 1, 2007, the TOCDF began destroying the first of more than 50,000 mustard-filled 155mm projectiles. To date, 32,289 155mm projectiles containing H mustard have been destroyed, which is 59 percent of the original 54,651 H projectiles. Because of agent solidification during storage, the agent is not drained from the projectiles before conveying them to the metal parts furnace. Instead, a new burster-well punch system, which clears a path for furnace heat into the projectile agent cavity, facilitates combustion of liquid and solid agent contents. In addition, some of the explosive components inadvertently bonded to the interior components of the projectiles during storage. To address this, a new remotely-operated burster rotating adapter device has been developed to rotate the "stuck" explosive components (the bursters) to allow removal.

Pueblo Chemical Agent Destruction Pilot Plant (PCAPP), Colorado
Blue Grass Chemical Agent Destruction Pilot Plant (BGCAPP), Kentucky
Neutralization followed by biotreatment will be used to destroy the Pueblo 2,611-ton stockpile, while neutralization followed by supercritical water oxidation will be used to destroy the Blue Grass 523-ton stockpile.

Road and fencing work has been completed at Pueblo, the access control point is shortly to open, and work continues on site grading and the early phases of construction. Site preparation and utility installation also continues at the Blue Grass stockpile site, which will be the last destruction plant built in the United States. Chemical agent operations are slated to begin 2017 and to be completed by 2023.

Chemical Weapons Destruction Program
Glossary of Acronyms and Terms of Art

ABCDF – Aberdeen Chemical Agent Disposal Facility, located at the Aberdeen Proving Grounds in Maryland

ACAMS – Automatic Continuous Air Monitoring System – the chemical agent monitoring instruments used by the Army to provide low-level, near real time analysis of chemical agent levels in the air

ANCDF – Anniston Chemical Agent Disposal Facility, located at Anniston Army Depot in Alabama

ATB – agent trial burn – test burns on incinerators to demonstrate compliance with emission limits and other permit conditions

AWFCO instrument– Automatic Waste Feed Cutoff – an instrument that monitors key operating parameters of a high temperature incinerator and automatically shuts off waste feed to the incinerator if prescribed operating limits are exceeded

BGCA – Blue Grass Chemical Activity, located at the Blue Grass Army Depot in Kentucky

BGCAPP – Blue Grass Chemical Agent Destruction Pilot Plant, new designation for BGCA.

BRA – Brine Reduction Area – the hazardous waste treatment unit that uses steam evaporators and drum dryers to convert the salt solution (brine) generated from pollution abatement systems on the incinerators into a dry salt that is shipped off-site to a hazardous waste landfill for disposal

CAC – Chemical Demilitarization Citizens Advisory Commission – the nine member group appointed by the Governor to receive information and briefings and provide input and express concerns to the U.S. Army regarding the Army's ongoing program for disposal of chemical agents and munitions – each state with a chemical weapons storage facility has its own CAC – in Oregon the DEQ's Chemical Demilitarization Program Administrator and the Oregon CSEPP Manager serve on the CAC as non-voting members

CAMDS – Chemical Agent Munitions Disposal System – the former research and development facility for chemical weapons processing, located at the Deseret Chemical Depot in Utah

CDC – Centers for Disease Control and Prevention – a federal agency that provides oversight and technical assistance to the U.S. Army related to chemical agent monitoring,

laboratory operations, and safety issues at chemical agent disposal facilities (Website: http://www.cdc.gov/nceh/demil/)

CMA – U.S. Army's Chemical Materials Agency, the agency responsible for chemical weapons destruction (website: http://www.cma.army.mil/)

CMP – comprehensive monitoring program – a program designed to conduct sampling of various environmental media (air, water, soil and biota) required by the EQC in 1997 to confirm the projections of the Pre-Trial Burn Health and Ecological Risk Assessment.

CMS – carbon micronization system – a new treatment system that is proposed to be used in conjunction with the deactivation furnace system to process spent carbon generated at UMCDF during facility operations – the CMS would pulverize the spent carbon and then inject the powder into the deactivation furnace system for thermal treatment to destroy residual chemical agent adsorbed onto the carbon

CSEPP – Chemical Stockpile Emergency Preparedness Program – the national program that provides resources for local officials (including emergency first responders) to provide protection to people living and working in proximity to chemical weapons storage facilities and to respond to emergencies in the event of an off-post release of chemical warfare agents (Website: http://csepp.net/)

CWC Treaty – Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction. Ratified by the U.S. Senate on April 24, 1997.

CWWG – Chemical Weapons Working Group, an international organization opposed to incineration as a technology for chemical weapons destruction and a proponent of alternative technologies, such as chemical neutralization (Website: http://www.cwwg.org/)

DAAMS – Depot Area Air Monitoring System – the system that is utilized for perimeter air monitoring at chemical weapons depots and to confirm or refute ACAMS readings at chemical agent disposal facilities – samples are collected in tubes of sorbent materials and taken to a laboratory for analysis by gas chromatography

DAL – discharge airlock – a chamber at the end of MPF used to monitor treated waste residues prior to release.

DCD – Deseret Chemical Depot – the chemical weapons depot located in Utah

DFS – deactivation furnace system – a high temperature incinerator (rotary kiln with afterburner) used to destroy rockets and conventional explosives (e.g., fuses and bursters) from chemical weapons

DPE – demilitarization protective ensemble – the fully-encapsulated personal protective suits with supplied air that are worn by workers in areas with high levels of agent contamination

DUN – dunnage incinerator – high temperature incinerator included in the original UMCDF design and intended to treat secondary process wastes generated from munitions destruction activities – this incinerator was never constructed at UMCDF

ECR – Explosive Containment Room – UMCDF has two ECRs used to process explosively configured munitions. ECRs are designed with reinforced walls, fire suppression systems, pressure sensors, and automatic fire dampers to detect and contain explosions and/or fire that might occur during munitions processing

EONC – Enhanced Onsite Container – Specialized vessel used for the transport of munitions and bulk items from UNCD to UMCDF and for the interim storage of those items in the UMCDF Container Handling Building until they are unpacked for processing

G.A.S.P. – a Hermiston-based anti-incineration environmental group that has filed multiple lawsuits in opposition to the use of incineration technology for the destruction of chemical weapons at the Umatilla Chemical Depot – G.A.S.P. is a member of the Chemical Weapons Working Group

GB – the nerve agent sarin

HD – the blister agent mustard

HVAC – heating, ventilation, and air conditioning

HW – hazardous waste

I-Block – the area of storage igloos where ton containers of mustard agent are stored at UMCD

IOD – integrated operations demonstration – part of the Operational Readiness Review process when UMCDF demonstrates the full functionality of equipment and operators prior to the start of a new agent or munition campaign.

JACADS – Johnston Atoll Chemical Agent Disposal System, the prototype chemical agent disposal facility located on the Johnston Atoll in the Pacific Ocean (now closed and dismantled)

J-Block – the area of storage igloos where secondary wastes generated from chemical weapons destruction are stored at UMCD

K-Block – the area of storage igloos where chemical weapons are stored at UMCD

LIC1 & LIC2 – liquid incinerators #1 & #2 – high temperature incinerators (liquid injection with afterburner) used to destroy liquid chemical agents

MDB – munitions demilitarization building – the building that houses all of the incinerators and chemical agent processing systems. The MDB has a cascaded air filtration system that keeps the building under a constant negative pressure to prevent the escape of agent vapor. All air from inside the MDB travels through a series of carbon filters to ensure it is clean before it is released to the atmosphere.

MPF – metal parts furnace – high temperature incinerator (roller hearth with afterburner) used to destroy secondary wastes and for final decontamination of metal parts and drained munitions bodies

NECDF – Newport Chemical Agent Disposal Facility, located at the Newport Chemical Depot in Indiana

NRC – National Research Council

ORR – operational readiness review – a formal documented review process by internal and external agencies to assess the overall readiness of UMCDF to begin a new agent or munitions processing campaign.

PBCDF – Pine Bluff Chemical Agent Disposal Facility, located at the Pine Bluff Arsenal in Arkansas

PCAPP – Pueblo Chemical Agent Destruction Pilot Plant, new designation for PUCDF.

PFS – the carbon filter system installed on the pollution abatement systems of the incinerators used for chemical agent destruction

PICs – products of incomplete combustion – by-product emissions generated from processing waste materials in an incinerator

PMR – permit modification request

PMN – permit modification notice

PUCDF – Pueblo Chemical Agent Disposal Facility, located at the Pueblo Chemical Depot in Colorado

SAP – sampling and analysis plan

SETH – simulated equipment test hardware – "dummy" munitions used by UMCDF to test processing systems and train operators before the processing of a new munitions type. SETH munitions are often filled with ethylene glycol to simulate the liquid

chemical agent so that all components of the system, including the agent draining process, can be tested.

TAR – Temporary Authorization Request

TOCDF – the Tooele Chemical Agent Disposal Facility, located at the Deseret Chemical Depot in Utah

UMCD – Umatilla Chemical Depot

UMCDF – Umatilla Chemical Agent Disposal Facility

WAP – waste analysis plan –a plan required for every RCRA permit which describes the methodology that will be used to characterize wastes generated and/or managed at the facility.

WDC – Washington Demilitarization Company, LLC – the Systems Contractor for the U.S. Army at UMCDF.

VX – a nerve agent

State of Oregon
Department of Environmental Quality Memorandum

Date: April 7, 2008

To: Environmental Quality Commission

From: Dick Pedersen, Acting Director

Subject: Agenda Item C, Informational Item: Results of the Umatilla Chemical Agent Disposal Facility Post-Trial Burn Risk Assessment
April 24-25, 2008 EQC Meeting

Purpose of Item

The intent of this item is to provide the Environmental Quality Commission (EQC) with background on the recently completed Post-Trial Burn Risk Assessment (PostRA) of the Umatilla Chemical Agent Disposal Facility (UMCDF) and a summary of the PostRA's estimates of risk and hazard posed to human health and the environment by UMCDF operations. The purpose of the PostRA is to inform future hazardous waste permitting decisions.

Considering the extraordinarily precautionary design of the PostRA, the Department of Environmental Quality (DEQ) has concluded that the probability of actual risk and hazard attributable to current operation of the UMCDF is exceptionally low. The probability of major adverse impacts from facility operations is similarly exceptionally low

A list of acronyms used in this document appears in Attachment 1.

Background

Two screening-level risk assessments (with both human health and ecological components) were used by DEQ to evaluate the potential for emissions from the UMCDF to pose a threat to human health and the environment. Screening-level risk assessments typically compensate for limited facility-specific information by applying one or more "precautionary" (also termed "conservative," "biased," "upper bound," or "worst-case") assumptions. The intent is to make assumptions that compensate for uncertainty by significantly increasing the possibility that the assessment's risk or hazard estimates are greater than any actual risk or hazard posed by exposure to facility emissions. Such assessments are thus likely to (intentionally) exaggerate both risk and hazard because of the cascading effect of these precautionary assumptions.

The first screening-level risk assessment at the UMCDF, the Pre-Trial Burn Risk Assessment (PreRA), was formally completed in February 1997. The PreRA identified the potential for adverse effects to human health and the environment only within 100 m (328 ft) of the UMCDF stack. At greater distances, risk and hazard to human health or the environment were not expected. In February 1997, the EQC issued hazardous waste and air permits to

build and operate the UMCDF, based, in part, upon the results of the PreRA.

Because of public comments, design modifications to the UMCDF, and updates to air modeling and risk assessment methodologies, DEQ decided, on its own accord, that a second screening-level risk assessment, the PostRA, would help inform future hazardous waste permitting decisions. Work on the PostRA began in 2003, with DEQ convening a technical work group to assist in preparing a risk assessment work plan. By October 2007, each of the principals involved in carrying out the work plan (DEQ, U.S. Army's Center for Health Promotion and Preventive Medicine (CHPPM), and the Confederated Tribes of the Umatilla Indian Reservation (CTUIR)) were preparing their own PostRA. DEQ's PostRA was completed in January 2008; CHPPM's PostRA in March 2008. Recent detailed results from the CTUIR risk assessment are not available at this time. A detailed chronology of the events leading to completion of these assessments is provided in Attachment 2. Details of the construction of DEQ's PostRA are summarized in Attachment 3.

None of the PostRAs include evaluation of risk or hazard associated with storage of chemicals weapons or from a catastrophic event, such as an explosion. These risks were assessed in a separate U.S. Army study.

Key Issues

The two key issues associated with the PostRA are: (1) its results, for both human and ecological receptors, including its ecological results in relation to those of the findings of the UMCDF Comprehensive Monitoring Program (CMP) and (2) the interpretation of the results in terms of the level of risk or hazard posed by UMCDF operations.

Summary of PostRA Results: The results of DEQ's PostRA are summarized below. Results of CHPPM's risk assessment are summarized in Attachment 4.

- Overall, human health risk was estimated to occur only on-site (at the incinerators), while human health hazard was estimated to occur both on- and off-site (where "off-site" means right at the facility's fenceline). Ecological risk was estimated to occur on-site (at the incinerators) for the shrub-steppe ecosystem and off-site (at a point just NE of the facility along I-82) for the Umatilla River ecosystem.

- *Human Health (Cancer):* Estimates of cancer risk (Attachment 5) were driven primarily by the approach used to account for total organic emissions (TOE). TOEs are a combination of organic chemicals commonly emitted from facilities like the UMCDF incinerators. The cancer and non-cancer risk calculations based upon the TOE geometric mean method suggest that receptors with on-site exposure may experience excess cancer and non-cancer risks. Risks for the off-site and occupational workers are lower and could be influenced by the use of multiple precautionary

assumptions. The inclusion of surrogate TOE chemicals of potential concern (COPC) in the analysis increases cancer risk estimates up to 1,000-fold compared to those made with U.S. EPA's method for hazardous waste incinerators. When TOE is not included, risk under all exposure scenarios is below the target level established in the 2004 RAWP.

- *Human Health (Non-Cancer):* Attachment 6 illustrates that estimates of non-cancer hazard varied little in response to the TOE method used. These estimates were driven primarily by the assumption that chemical agents (primarily VX) were actually present in emissions when, in fact, they have never been detected in facility emissions. Because these agents are considered much more toxic than any other COPC, assuming they are present allows them to drive the non-cancer assessment.

- *Human Health (Non-Cancer, Acute/Upset Condition):* An upset condition is one where the emission rate from one or more of the incinerators increases unexpectedly. This condition was modeled by estimating maximal emissions for each furnace, then presuming that emissions from a particular furnace were 10-fold higher than normal maximal emissions and the other furnaces were at normal maximal emissions. This was repeated for all 8 furnaces. Attachment 7 summarizes estimates of the acute inhalation hazards associated with upset conditions at each furnace. Again, these estimates were driven by the assumption that chemical agents are actually present in facility emissions, when they have, in fact, never been detected.

- *Ecological Hazard:* Attachment 8 illustrates that, as was the case with human health, the method used to evaluate TOE significantly affects estimated ecological hazards. When TOE is evaluated using the TOE geometric mean, TOE nonvolatile organics were estimated to be the primary threat in both the freshwater and shrub-steppe ecosystems and most receptors are predicted to be impacted; TOE nonvolatile organics account for more than 99 percent of the estimated threat for all receptors with the exception of the deer mouse, for which VX was estimated to be the primary threat. When TOE is evaluated using the U.S. EPA method, VX was still estimated to be one of the primary threats. Here again, these estimates were driven by the assumption that chemical agents were present, when, in fact, they've never been detected. In addition, confidence in the estimate of the threat posed by VX is considered low because the VX mammalian toxicity reference value is based on a subcutaneous, not dietary, exposure study.

- *Evidence of Ecological Impacts:* A comprehensive monitoring plan (CMP) was implemented to provide information on changes to the environment during the period of construction, operation, and closure of the UMCDF.

Monitoring of the environment is conducted through sampling of soil, water, and air as well as biological samples collected from the surrounding community. Sampling is conducted four times per year and encompasses periods prior to facility operations, during munitions processing, and will continue for a year after completion of operations. The CMP has its strengths and weaknesses, but it does provide facility-specific "real world" information on pre-operational and current conditions. It is relatively rare to have a long-term monitoring program available to serve as a "reality check" on the results of a modeled assessment of ecological hazard. At present, CMP results show no clear positive or negative trends (relative to baseline, quarter-to-quarter, or annually) in ecological conditions at the UMCDF or in the assessment area. No unequivocally negative trends in the monitoring data are evident that would support the estimates made with the precautionary ecological risk model.

Interpretation of PostRA Results: Taking into consideration the extraordinarily precautionary design of the PostRA, DEQ has concluded, as did the Pre-Trial Burn Risk Assessment, that the probability of actual risk and hazard attributable to current operation of the UMCDF is exceptionally low. The probability of major adverse impacts from facility operations is similarly exceptionally low. The PostRA does not address the acceptability of any such risks or hazards, however low, as that is a risk management, and not a risk assessment, concern.

Discussion of This Interpretation: Risk assessment is a process for organizing available scientific and technical information to support decision making. The results of a risk assessment are but one factor among many competing factors (social, political, legal, cultural, etc.) that decision makers consider when deciding a course of action.

When reaching conclusions about risk or hazard, particularly in a management or decision making context, not only the risk or hazard estimated for an exposure scenario, but the probability of that scenario actually occurring, should also be given consideration. The probability of an exposure scenario being realized is not the same as its plausibility, in that it is possible to pose a plausible scenario (e.g., winning the lottery) that has a very low probability of being realized versus another (e.g., watching the sun rise) that is also plausible but has a remarkably high probability of occurring. Scenarios that indicate a high risk or hazard, but are also highly unlikely, may need to be managed differently from those with the same or lower risk but which are more likely to occur.

The PostRA was, by design, an assessment that used a series of precautionary assumptions to ensure exposure scenarios wherein it would be very unlikely to under-estimate risk or hazard to human or ecological receptors from exposure

to UMCDF emissions. As a consequence of this design, it is more likely to have exaggerated risk and hazard relative to what might actually be happening (if anything) or could happen at or near the UMCDF. However, it is not possible to know if it did so, and if so by how much, because, as a screening-level assessment, it was not designed to characterize a range of plausible estimates, but provide only one, the high-end, estimate. The evolving practice of risk assessment recognizes that when there is uncertainty in estimates of risk or hazard, presenting the range of plausible estimates, along with a central (i.e., median) estimate, conveys a more objective characterization of the magnitude of risk or hazard. Risk assessments of complex situations should thus provide central estimates, as well high-end and low-end estimates, of risk and hazard, rather than just highlighting one end or the other.

What is clear with the PostRA is that its estimates of risk and hazard decline rapidly if only a few of its precautionary assumptions are relaxed. For example, using the U.S. EPA method for TOE places all off-site risks below target levels (Attachment 6), and many of the on-site ones as well. If you then consider that the probability of all receptors being exposed to the maximum air concentration or deposition rate at all times is very low, say < 1 percent, all on-site risk could drop below target levels as well. Similarly, not counting non-detects as detects (particularly with respect to chemicals agents), would further lower risk and hazard estimates.

Next Steps

DEQ plans a public information session and public hearing on the results and interpretation of the PostRA in May 2008. DEQ will use responses from both the public and the EQC to prepare a formal action item requesting the EQC's concurrence with DEQ's conclusion regarding the UMCDF's current use of the best available technology (BAT). DEQ anticipates presenting this action item to the EQC in June 2008.

EQC Involvement

DEQ welcomes comments and suggestions from the EQC with respect to the results, interpretation, and use of the PostRA.

Attachments

1. Acronym List & Glossary
2. Detailed Chronology of Events Leading to the PostRA.
3. Summary of How the PostRA Was Constructed.
4. Executive Summary, Final Health Risk Assessment for the UMCDF, Center for Health Promotion and Preventive Medicine, U.S. Army.
5. Summary of total excess lifetime cancer risks (ELCR) for each human receptor by TOE assumption.
6. Summary of hazard indices for non-cancer hazards for each human receptor by TOE assumption.
7. Acute inhalation hazard indices for upset conditions by furnace.
8. Summary of ecological hazard (sum of ecological screening quotients) by receptor.

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Available Upon Request

- E&E UMCDF Pre-Trial Burn Risk Assessment Report (1997)
- U.S. EPA Screen-Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities (1999)
- UMCDF Risk Assessment Work Plan (2004)
- Tetra Tech Project Plan for RAWP Implementation (2005)
- Tetra Tech Technical Memoranda for RAWP Implementation (2005)
- U.S. EPA Human Health Risk Assessment Protocol for Hazardous Waste Combustion Facilities (2005)
- E&E UMCDF Post-Trial Burn Risk Assessment Report (2008)
- CHPPM Final Health Risk Assessment for the UMCDF (2008)
- UMCDF Comprehensive Monitoring Program - Baseline Report (2003)
- UMCDF Comprehensive Monitoring Program – Annual Reports (2003-2007)
- UMCDF Comprehensive Monitoring Program – Quarterly Reports (2002-2007)

Approved:

Section: Jan Hamel for Rich Duval

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ATTACHMENT 1
Acronym List / Glossary

CHPPM	Center for Health Promotion and Preventive Medicine (U.S. Army)
CMP	Comprehensive Monitoring Program (for the UMCDF)
COPC	Chemicals of Potential Concern
CTUIR	Confederated Tribes of the Umatilla Indian Reservation
DEQ	Oregon Department of Environmental Quality
E&E	Ecology & Environment, Inc. (DEQ's support contractor)
ELCR	Excess Lifetime Cancer Risk The risk of cancer in excess of the background cancer rate.
EQC	Oregon Environmental Quality Commission
ESQ	Ecological Screening Quotient A HQ (see below) calculated for ecological receptors rather than humans.
Geometric Mean	A type of average, which indicates the typical value of a set of numbers. It is similar to the arithmetic mean except that instead of adding the set of numbers and then dividing the sum by the count of numbers, *n*, the numbers are multiplied and then the *n*th root of the product is taken.
HI	Hazard Index Sum of the hazard quotients (HQ) for all of the chemicals included in the assessment. A simplified approach to considering the impact of exposure to multiple chemical simultaneously.
HQ	Hazard Quotient The ratio of the level of exposure (e.g., concentration of a chemical in air) to a level at or below which no adverse non-cancer effects are expected. Not used to determine the risk of cancer.
PostRA	Post-Trial Burn Risk Assessment (2008)
RAWP	Risk Assessment Work Plan (for the PostRA)
Shrub-Steppe Ecosystem	An ecosystem that lies between grasslands and desert. It consists of one or more layers of perennial grasses above which rises a conspicuous but discontinuous layer of shrubs, including but not limited to: big sagebrush, greasewood, and bitterbrush.
TOE	Total Organic Emissions These are that portion of the emissions profile which cannot be identified and quantified using standard stack gas sampling and analysis methods.
UMCDF	Umatilla Chemical Agent Disposal Facility
VX	One of the chemical weapons (nerve agent) being disposed of by the UMCDF.

ATTACHMENT 2
Detailed Chronology of Events Leading to the PostRA

The Umatilla Chemical Depot is located in north central Oregon, near the city of Hermiston. The UMCDF, which is within the boundaries of the Umatilla Chemical Depot, is being used by the U.S. Army to destroy stockpiles of chemical warfare agents stored on the Umatilla Chemical Depot since the 1960s. Resource Conservation and Recovery Act Hazardous Waste Storage and Treatment and Air Contaminant Discharge permits, both issued by the State of Oregon, were required for the Department of the Army (U.S. Army) to build and operate the UMCDF. Screening-level risk assessments (with both human health and ecological components) were used to evaluate the potential for emissions from the UMCDF to pose a threat to human health and the environment. The results of these evaluations were one factor in determining whether the terms and conditions of these permits were sufficient to protect human health and the environment. Note that the scope of these risk assessments did not include evaluation of risk or hazard associated with storage of chemicals weapons or from a catastrophic event, such as an explosion. These were assessed in a separate U.S. Army study.

The first risk assessment at the UMCDF, the Pre-Trial Burn Risk Assessment, was formally completed in February 1997. Because the UMCDF itself was not yet in operation, site-specific emissions data were not available, and this PreRA used emissions data from similar chemical agent disposal facilities. Using precautionary methodologies and assumptions consistent with a screening-level approach, the Pre-Trial Burn Risk Assessment identified the potential for adverse effects to human health and the environment only within 100 m (328 ft) of the UMCDF stack. At greater distances, risk and hazard to human health or the environment were not expected. In February 1997, the EQC issued hazardous waste and air permits to build and operate the UMCDF.

In 1997, it was anticipated that a subsequent risk assessment, the post-trial burn risk assessment (PostRA), would be prepared. This assessment was initially intended to be a series of addenda to the Pre-Trial Burn Risk Assessment. After 1997, however, the UMCDF underwent numerous design modifications, and there were significant updates and improvements in various air modeling and risk assessment methodologies and guidance documents. DEQ also received numerous comments on the Pre-Trial Burn Risk Assessment from the public and other stakeholders during a public comment process. DEQ became convinced that a PostRA which was simply the Pre-Trial Burn Risk Assessment with addenda could not adequately reflect the nature and extent of these changes. DEQ therefore decided to conduct a PostRA in accordance with a Risk Assessment Work Plan (RAWP) to inform future hazardous waste permitting decisions.

Because of the complexity of the risk assessment process, the need for expertise in a wide variety of regulatory and scientific disciplines (toxicology, risk assessment, public health, environment, permitting, air modeling, agriculture) and the high level of interest from various federal, state, and local government agencies and the public, DEQ formed a technical work group to develop the draft RAWP. Members of the RAWP technical work group included various stakeholders,

such as the United States Department of Army, Science Applications International Corporation, the United States Environmental Protection Agency, DEQ, Ecology & Environment, Inc. (E&E), the Oregon Department of Human Services (Public Health), the Washington Department of Agriculture, the Washington State Department of Health, the Confederated Tribes of the Umatilla Indian Reservation (CTUIR), the United States Fish and Wildlife Service, and the U.S. Army's Center for Health Promotion and Preventive Medicine (CHPPM). The draft RAWP was released in October 2003. After receipt, review, and incorporation of a variety of public comments, the final RAWP was released in August 2004.

In early 2005 DEQ contracted to have the PostRA implemented, per the RAWP, on commercially available risk assessment software using UMCDF-specific data files. Between June and December 2005, a contractor (Tetra Tech) prepared a detailed implementation plan and nine technical memoranda to either clarify specific issues in the RAWP or to address technical issues not considered by the RAWP. The RAWP also presented additional unanticipated issues, each of which took time to resolve and required extensive documentation.

In October 2006, CHPPM proposed its approach to completing the PostRA in general accordance with the RAWP, but with specific deviations and using their proprietary risk assessment software (RiskIt). DEQ agreed to allow CHPPM to undertake the PostRA, provided there was on-going discussion, review, and approval of any deviations from the RAWP. Between October 2006 and July 2007, CHPPM periodically submitted its proposed protocols and deviations from the RAWP, all of which were critically reviewed by DEQ and CTUIR. In July 2007, CHPPM informed DEQ that they would not be able to complete the PostRA. DEQ immediately directed its technical contractor (E&E) to prepare the PostRA, using commercially available risk assessment software and all heretofore agreed upon deviations from the RAWP. During this time, CTUIR was also preparing their own PostRA, in coordination with CHPPM and DEQ, using the same commercially available software as was being used by DEQ's contractor (E&E). Thus, from July 2007 onward, DEQ/E&E and CTUIR were working collaboratively to independently calculate human health and ecological risks, using the same or similar input data sets as those used by CHPPM. In late September 2007, CHPPM informed DEQ that they were again actively working on the PostRA and, in October 2007, they presented their initial PostRA results.

Thus by October 2007, each of the principals (CHPPM, DEQ, and CTUIR) had prepared or were preparing their own PostRA. Each adhered to the RAWP (or agreed upon deviations), but each varied slightly due to reasonable differences of opinion about specific ecological parameters. The decision was made to complete separate CHPPM and DEQ PostRAs by the end of January 2008 and use their results for cross-validation (i.e., auditing) of both approaches and software, so that a screening-level PostRA for the UMCDF could be completed by March 2008.

ATTACHMENT 3
Summary of How the PostRA Was Constructed

An assessment of risk (of cancer) or hazard (of non-cancer effects) posed by a hazardous chemical typically has five basic elements (Attachment 3, Figure 1): (1) one or more chemicals of potential concern (COPC), (2) a source for these COPC (i.e., the UMCDF), (3) a receptor susceptible to these COPC, (4) one or more pathways (along which these COPC can move) connecting the source to the receptor, and (5) a point (i.e., the exposure point) where receptor and the COPC finally meet - its location, and the assumed or measured COPC concentration at it (i.e., the exposure point concentration), are key elements of the assessment. Receptors and pathways are typically grouped, based on a number of informed assumptions and judgments, into one or more "exposure scenarios", each of which describes who is exposed (i.e., the receptor - human child or adult, wildlife, fish, etc.), the pathway or pathways by which they might be exposed (e.g., inhaling outdoor air, eating fish, eating homegrown produce, etc.), where they might be exposed (i.e., within the assessment area - on the facility, next to the facility, at some distance from the facility, etc.), and for how long they are assumed to be exposed (i.e., the exposure duration) though a specific exposure pathway. Cancer risk and non-cancer hazard posed by each COPC are then estimated within the context of each exposure scenario.

- *Chemicals of Potential Concern:* The 101 agreed upon COPCs for the UMCDF were: (i) 94 chemicals that were detected at least once during a chemical agent disposal facility trial burn or run; (ii) 3 surrogates representing volatile, semi-volatile, and non-volatile fractions of the total organic emissions (TOE); (iii) the 3 chemical agents being disposed of at UMCDF (GB, VX, and HD (mustard)), although none have ever been reported at concentrations above their detection limits; and (iv) EA 2192, a breakdown product of VX, also never reported above its detection limit. It should be noted that, while chemical agent detection limits have been lowered by approximately two orders of magnitude in recent years, these agents have yet to be detected in facility emissions.

- *Receptors & Pathways:* The human health risk assessment involved 8 receptor groupings and 10 exposure pathway groupings (Attachment 3, Table 1). The ecological risk assessment considered two different ecosystems, the shrub-steppe and freshwater, each with 10 different species in representative food webs. The various ecological receptors were assumed to be exposed to water, soil, or sediment, as well as to consume one another (Attachment 3, Table 2).

- *Assessment Area:* The human health assessment assumed that exposure occurs in two principal assessment areas: on-site (i.e., within the UMCDF property boundary) and off-site (i.e., outside the boundary but within 50 km (31 mi) of the UMCDF). The on-site area encompassed an administration area and a plant area. However, not all human receptors were assumed to be in all assessment areas (Attachment 3, Table 3). The ecological assessment prepared by DEQ/E&E assumed that exposures occurred at two assessment areas: within a 3-km radius of the UMCDF incinerators and in the Umatilla River Corridor. The CHPPM ecological assessment included the Columbia River, but not the Umatilla River

Corridor.

- *Exposure Duration:* Different exposure durations were assumed for different human receptors in different locations (Attachment 3, Table 4). The direct exposure duration reflects the time period during which people may inhale UMCDF emissions and is equal to the operational duration life of the facility (10 years). The indirect exposure duration reflects the remainder of time a person remains within the assessment area. No human receptor was ever placed outside of the 50-km assessment area. The ecological receptors were also assumed to remain in the assessment area at all times.

- *Exposure Point Concentration:* Both assessments, human or ecological, assumed that a receptor was co-located with the highest (maximum) estimated air concentration or deposition rate for each COPC in each assessment area. For the human health assessment, these maximum exposure points proved to be either on-site or, if off-site, right at the facility boundary. For the ecological assessment, the maximum occurred either in the center of the 3-km radius (near the incinerators) or at the edge of the river corridor immediately northeast of the facility.

- *Acceptability of Results:* The acceptability of a risk or hazard estimate is typically a policy choice, and not that of the risk assessment or the risk assessor. However, the 2004 RAWP established acceptable target levels for human receptors as follows: (a) A total excess lifetime cancer risk (ELCR) $\leq 1 \times 10^{-5}$ (i.e., a 1 in 100,000 chance or less of cancer over and above the background rate); (b) An individual COPC risk $\leq 1 \times 10^{-6}$ (i.e., a 1 in 1,000,000 chance or less of cancer over and above the background rate); (c) An individual COPC hazard quotient (HQ) of ≤ 0.25 for non-cancer outcomes; (d) A total COPC hazard index (HI, sum of the individual HQs) ≤ 0.25 for non-cancer outcomes (the RAWP directed calculation of a target-organ specific hazard index, but this was apparently not done due to the toxicological complexity of this approach). The RAWP established a total ecological screening quotient (essentially an HI) of ≤ 0.25 for non-cancer outcomes in ecological receptors (cancer risk is not assessed for ecological receptors). The acceptable risk targets are consistent with those in other DEQ programs (i.e., Cleanup Program, Air Toxics Program). However, each of the acceptable hazard targets (HQ & HI) are four times less than those (i.e., 1) typically used by other U.S. EPA or DEQ programs. Lowering both in this manner is a very precautionary approach. Note that hazard quotients and indices do not equate directly to a level of hazard (i.e., a HQ of 10 is does not necessarily mean that the hazard is 10 times greater than if the HQ were 1).

The overall processes and results of a risk assessment are profoundly influenced by uncertainty. There are various types of risk assessments, distinguished primarily by the extent to which facility-specific information is available to reduce inherent uncertainties and how an assessment handles these uncertainties - from simply compensating for them to trying to reveal their full range. Screening-level assessments typically compensate for limited facility-specific information by applying one or more "precautionary" (also termed "conservative", "biased", "upper bound", or "worst-case") assumptions. By doing so, such an assessment is likely to

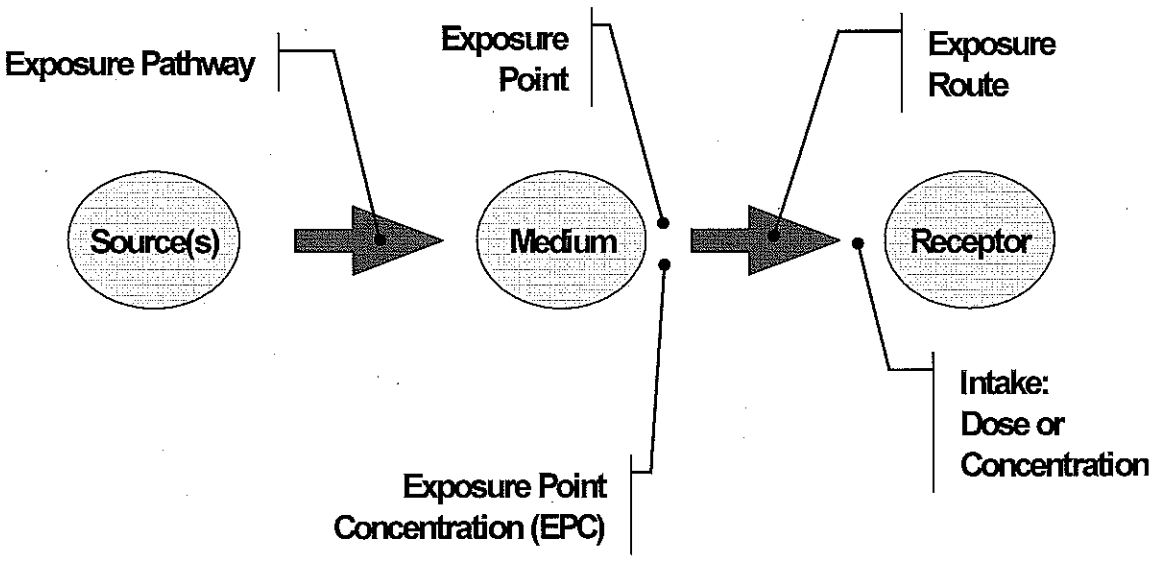
(intentionally) exaggerate both risk and hazard because of the multiplicative nature of upper bound assumptions. The intent is to compensate for uncertainty by significantly increasing the possibility that the assessment's risk or hazard estimates are greater than any actual risk or hazard posed by exposure to facility emissions. Thus, while uncertainty allows for a range of outcomes, a screening level assessment typically presents only one - the upper bound outcome. Improving the information used often shrinks the range of uncertainty and can lead to a lowering of the upper bound outcome.

Although the PostRA incorporated site-specific information, both its human health and ecological components are fundamentally screening-level assessments, which responded to uncertainty by applying a number of precautionary assumptions and by assessing risk and hazard with respect to plausible but low probability exposure scenarios. The precautionary assumptions utilized by the PostRA that likely ensured an upper bound outcome were: (1) Co-locating all receptors for their entire duration of exposure with the site having the maximum air concentration or air deposition rate, (2) the manner of including total organic emissions (TOE) as a COPC in the assessment, (3) obtaining all subsistence food items and fish from within the assessment area; and (4) treating non-detected chemical agent COPC (particularly VX) as though they were detected.

Of these, the approach to TOE and the chemical agents had the single greatest impact on risk and hazard estimates. Dealing with them proved challenging and ultimately four different methods were used. The first represented TOE as the geometric mean of the 3 surrogate values for hypothetical volatile, semi-volatile, and nonvolatile emissions. The second represented TOE as the median of these values. The third, developed by U.S. EPA, partitioned (or scaled) unaccounted-for organic emissions amongst chemicals which had been detected. The fourth eliminated TOE altogether, so that it was not accounted for in the risk or hazard calculations. Of these methods, the TOE geometric mean produced the highest risk and hazard estimates, followed by the TOE median, and then the U.S. EPA method for hazardous waste incinerators; excluding the TOE fraction produced the lowest risk and hazard estimates for all receptors. How TOE was considered is the subject of considerable discussion. Basing TOE estimates on levels of detection, rather than on actual amounts of material that went into or were emitted from UMCDF, is likely to have lead to over-estimates of concentrations (particularly for the non-volatile fraction) and hence of risk and hazard.

ATTACHMENT 3

Figure 1. Terms Describing the Principal Parts of a Risk Assessment



ATTACHMENT 3
Table 1. Receptors and Exposure Pathways in the Human Heath Risk Assessment

Exposure Pathway	Subsistence Farmer Adult/Child	Resident Adult/Child	Subsistence Fisher Adult/Child	Native American Adult	Native American Child	On-Site Worker / Area Resident	Military Resident	Breast-Feeding Infant	Acute Exposure [c]
Inhalation of vapors and particulate matter [a]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Incidental ingestion and inhalation of soil and dust	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Dermal contact with soil	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Ingestion of drinking water from surface water	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Dermal contact with surface water	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Ingestion of homegrown produce and/or native vegetation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Ingestion of home-raised animal products and/or wild game and fowl	Yes	No	No	Yes	Yes	No	No	No	No
Ingestion of locally caught fish	No	No	Yes	Yes	Yes	No	No	No	No
Inhalation and dermal absorption in sweat lodge	No	No	No	Yes	No	No	No	No	No
Ingestion of breast milk [b]	No	No	No	No	No	No	No	Yes	No

NOTES

(a) Direct inhalation of vapors and particulate matter from the UMCDF were assessed for the operational period only.

(b) Exposure as an infant to mother's milk containing dibenzo-p-dioxins / polychlorinated dibenzofurans (PCDD/PCDFs) and co-planar, dioxin-like polychlorinated biphenyls (PCBs) is included in the appropriate adult scenarios shown above. The pathway is quantitatively evaluated separately in these scenarios.

(c) Acute (high concentration, short-term) exposure to emissions from the facility during an upset condition.

ATTACHMENT 3
Table 2. Ecological Receptors in the Ecological Risk Assessment (DEQ/E&E)

Food Web	Endpoint Species	Guild	Consumes			
			Food	Water	Soil	Sediment
Shrub-Steppe	Peregrine falcon	Bird Carnivore	Mammal Omnivore, Mammal Herbivore, Bird Omnivore, Bird Herbivore	Y	Y	
	Burrowing owl	Bird Carnivore	Mammal Omnivore, Mammal Herbivore, Bird Omnivore, Bird Herbivore	Y	Y	
	Burrowing owl [(a)]	Bird Omnivore	Invert Terrestrial	Y	Y	
	Western Meadowlark	Bird Omnivore	Invert Terrestrial, Plant Terrestrial	Y	Y	
	Mourning dove	Bird Herbivore	Plant Terrestrial	Y	Y	
	Coyote	Mammal Carnivore	Mammal Omnivore, Mammal Herbivore, Bird Herbivore, Bird Omnivore	Y	Y	
	Deer mouse	Mammal Omnivore	Invert Terrestrial, Plant Terrestrial	Y	Y	
	Pronghorn	Mammal Herbivore	Plant Terrestrial	Y	Y	
	Wash. ground squirrel	Mammal Herbivore	Plant Terrestrial	Y	Y	
Freshwater	Bald eagle	Bird Carnivore	Fish Carnivore, Mammal Herbivore, Bird Herbivore, Fish Omnivore	Y		Y
	Blue heron	Shorebird Carnivore	Fish Carnivore, Invert Benthic, Fish Herbivore, Fish Omnivore	Y		Y
	Sandpiper	Shorebird Carnivore	Invert Benthic	Y		Y
	Mallard	Bird Omnivore	Invert Benthic, Aquatic Vegetation	Y		Y
	Canada goose	Bird Herbivore	Plant Aquatic	Y		Y
	River otter	Mammal Carnivore	Fish Carnivore, Fish Omnivore	Y		Y
	Raccoon	Mammal Omnivore	Mammal Herbivore, Bird Herbivore, Invert Benthic	Y		Y
	Long-tailed vole	Mammal Herbivore	Plant Aquatic	Y		Y

NOTES

(a) It was necessary to run EcoRisk View twice for the burrowing owl, once as a carnivore and once as an omnivore, to estimate its exposure from all likely foods.

ATTACHMENT 3
Table 3. Placement of Human Receptors by Assessment Area

RECEPTOR	OFF-SITE (within 31 miles)	ON-SITE		
		Administration Area	Plant Area	Elsewhere within the Facility Boundary
Subsistence Farmer (Adult and Child)	Yes	No	No	Yes
Subsistence Fisher (Adult and Child)	Yes	No	No	Yes
Native American (Adult and Child)	Yes	No	No	Yes
Resident (Adult and Child)	Yes	No	No	Yes
Plant Worker (Adult)	Yes	No	Yes	No
Military Resident (Adult)	Yes	Yes	No	No

ATTACHMENT 3

Table 4. Exposure Locations and Durations for Human Receptors by Assessment Area

RECEPTOR	OFF-SITE (within 31 miles)	ON-SITE		
		Administration Area	Plant Area	Elsewhere within the Facility Boundary
Subsistence Farmer, Adult	10 [a] 40 [b]	---	---	10 40
Subsistence Farmer, Child	6 6	---	---	6 6
Subsistence Fisher, Adult	10 30	---	---	10 30
Subsistence Fisher, Child	6 6	---	---	6 6
Native American, Adult	10 70	---	---	10 70
Native American, Child	6 6	---	---	6 6
Resident, Adult [c]	10 30	---	---	10 30
Resident, Child	6 6	---	---	6 6
Plant Worker, Adult [d]	10 25	---	10 25	---
Military Resident [e]	---	2 2	---	---

NOTES

(a) Direct exposure via inhalation of vapors and particulates emitted from the facility is assumed to be possible only during the 10-year operational life of the facility.

(b) Indirect exposure to particulates emitted from the facility that end-up in soil, water, and food items is assumed to be possible for 30 to 70 years.

(c) Residents are assumed to live off-site (e.g., in a near-by town) for 6 years as a child and 30 years as an adult.

(d) Plant Workers are assumed to work on-site for 25 years while living off-site within the assessment area for those 25 years.

(e) Military Residents are assumed to live and work in the administrative area during a 2-year tour of duty. Direct contact is assumed possible for a maximum of 2 years during the operational period and indirect contact for a maximum of 2 years during the post-operational period.

ATTACHMENT 4

DEPARTMENT OF THE ARMY
US ARMY CENTER FOR HEALTH PROMOTION AND PREVENTIVE MEDICINE
5158 BLACKHAWK ROAD
ABERDEEN PROVING GROUND MD 21010-5403

EXECUTIVE SUMMARY
FINAL HEALTH RISK ASSESSMENT FOR THE
UMATILLA CHEMICAL AGENT DISPOSAL FACILITY
UMATILLA CHEMICAL DEPOT, HERMISTON, OREGON
REPORT NO. 39-DA-08CF-07
FEBRUARY 2008

The purpose of this Health Risk Assessment (HRA) is to evaluate the potential human and environmental health impacts due to cumulative emissions from Umatilla Chemical Agent Disposal Facility (UMCDF) sources – the Common Stack, which includes two Liquid Incinerators (LICs) (LIC1 and LIC2), the Metal Parts Furnace (MPF), and the Deactivation Furnace System (DFS); the Brine Reduction Area (BRA) Pollution Abatement System (PAS) stack; the Munitions Demilitarization Building (MDB) heating, ventilating, and cooling system (HVC) stack, and the Laboratory HVC stack. The HRA report is a compliance requirement for issuance of the UMCDF Resource Conservation and Recovery Act (RCRA) Part B permit issued by the Oregon Department of Environmental Quality.

This HRA presents the methodology for a multi-pathway human health risk assessment (HHRA) and ecological risk assessment (ERA) for stack emissions from the Common Stack, BRA, MDB HVC, and the Laboratory HVC. In general, direct and indirect health risks and hazards were estimated using an iterative (sequential) approach based on U.S. Environmental Protection Agency (EPA) guidance and recommendations.

The excess lifetime cancer risks for this HHRA were calculated by estimating the total risk associated with exposure to all of the compounds of potential concern (COPCs) through each exposure pathway for each receptor population (exposure scenario). Then, for each receptor population, the risks from all applicable exposure pathways were summed. All total lifetime cancer risks for receptor populations were below the regulatory criterion of 1×10^{-5} (also expressed as 1E-05).

The estimation of non-cancer hazards presumes that no adverse effect will likely occur from substance intakes below a threshold, but above a threshold, an effect is possible. Non-cancer hazard estimates were calculated by generating COPC-specific hazard quotients (HQ) for each pathway. Then, for each population, the resulting HQs were summed for each pathway, then across pathways culminating in the total hazard index (HI). The Native American Adult, Native American Child, and Native American Mother populations had HIs that were higher than the regulatory criterion of 0.25. The highest estimated HI was 0.34.

Acute human health hazards were evaluated by comparing each COPC estimated 1-hour maximum concentration to its COPC-specific acute reference concentration. Then, the resulting acute hazard quotients (AHQs) were summed for all the COPCs to obtain an acute hazard index (AHI) for each exposure location. Estimated AHIs for all emission sources were lower than the regulatory criterion of 1 (or unity) for the off-site and on-site co-location populations.

In order to assess the potential for adverse effects to ecological receptors, the HQ method was utilized. For the terrestrial sites, the off-site co-located location HQ was lower than the screening target level of 0.25 for all receptors. For the aquatic site, Umatilla River and Columbia River, the HQ was lower than the screening target level of 0.25 for all receptors.

ATTACHMENT 5
Summary of Total Excess Lifetime Cancer Risks (ELCR) for Each Human Receptor by Total Organic Emissions (TOE) Assumption

Area / Receptor	DEQ/E&E TOE Geomean	DEQ/E&E TOE Median	DEQ/E&E EPA Method	DEQ/E&E No TOE
ON-SITE				
Military worker, adult	3E-09 [a]	7E-10	1E-11	7E-12
Subsistence farmer, adult	**1E-02**	**3E-03**	**1E-04**	6E-06
Subsistence farmer, child	**3E-03**	**6E-04**	**2E-05**	1E-06
Subsistence fisher, adult	**1E-04**	**2E-05**	2E-07	4E-08
Subsistence fisher, child	**8E-05**	**2E-05**	1E-07	2E-08
Native American, adult	**2E-02**	**4E-03**	**7E-05**	4E-06
Native American, child	**1E-03**	**3E-04**	9E-06	5E-07
Plant worker, adult	5E-06	1E-06	8E-09	2E-09
OFF-SITE				
Subsistence farmer, adult	**3E-04**	**6E-05**	1E-06	6E-08
Subsistence farmer, child	**5E-05**	1E-05	3E-07	2E-08
Subsistence fisher, adult	2E-06	5E-07	4E-09	9E-10
Subsistence fisher, child	1E-06	3E-07	2E-09	6E-10
Native American, adult	**3E-04**	**7E-05**	9E-07	5E-08
Native American, child	**2E-05**	5E-06	1E-07	6E-09
Resident, adult	2E-06	5E-07	3E-09	8E-10
Resident, child	1E-06	3E-07	2E-09	6E-10
Military worker, adult	2E-06	5E-07	3E-09	8E-10
Resident, adult	2E-06	5E-07	3E-09	8E-10
Plant worker, adult	7E-06	2E-06	1E-08	3E-09

Risk estimates in **BOLD** are above the acceptable ELCR target level of 1E-05 established in the 2004 RAWP.

NOTES

(a) 3E-09 is an abbreviation for 3×10^{-9} or 0.000000003. This same concept applies to all of the other numbers in this table.

ATTACHMENT 6
Summary of Hazard Indices for Non-Cancer Hazards for Each Human Receptor by Total Organic Emissions (TOE) Assumption

Area / Receptor	DEQ/E&E TOE Geomean	DEQ/E&E TOE Median	DEQ/E&E EPA Method	DEQ/E&E No TOE
ON-SITE				
Military worker, adult	< 0.25	< 0.25	< 0.25	< 0.25
Subsistence farmer, adult	**4**	**4**	**6**	**4**
Subsistence farmer, child	**9**	**9**	**13**	**9**
Subsistence fisher, adult	**3**	**3**	**4**	**3**
Subsistence fisher, child	**7**	**7**	**9**	**7**
Native American, adult	**10**	**10**	**14**	**10**
Native American, child	**10**	**10**	**14**	**10**
Plant worker, adult	< 0.25	< 0.25	< 0.25	< 0.25
OFF-SITE				
Subsistence farmer, adult	< 0.25	< 0.25	< 0.25	< 0.25
Subsistence farmer, child	**0.4**	**0.3**	**0.4**	**0.4**
Subsistence fisher, adult	< 0.25	< 0.25	< 0.25	< 0.25
Subsistence fisher, child	**0.3**	**0.3**	**0.3**	**0.3**
Native American, adult	**0.4**	**0.4**	**0.5**	**0.4**
Native American, child	**0.4**	**0.4**	**0.5**	**0.4**
Resident, adult	< 0.25	< 0.25	< 0.25	< 0.25
Resident, child	**0.2**	**0.3**	**0.3**	**0.3**
Military worker, adult	< 0.25	< 0.25	< 0.25	< 0.25
Resident, adult	< 0.25	< 0.25	< 0.25	< 0.25
Plant worker, adult	**0.3**	**0.3**	**0.3**	**0.3**

Hazard estimates in **BOLD** are above the acceptable hazard index (HI) 0.25 established in the 2004 RAWP.

ATTACHMENT 7
Acute Inhalation Hazard Indices for Upset Conditions by Furnace

Area / Receptor	Base for Upset	BRA Upset	LAB Upset	LIC1 Upset	LIC2 Upset	MDB Upset	MFP Upset	MFPnc Upset	DFS Upset
ON-SITE									
Military worker, adult	0.3	0.3	0.3	0.3	0.3	0.3	0.5	0.5	0.3
Subsistence farmer, adult	50	50	50	64	64	50	94	94	64
Subsistence farmer, child	50	50	50	64	64	50	94	94	64
Subsistence fisher, adult	50	50	50	64	64	50	94	94	64
Subsistence fisher, child	50	50	50	64	64	50	94	94	64
Native American, adult	50	50	50	64	64	50	94	94	64
Native American, child	50	50	50	64	64	50	94	94	64
Plant worker, adult	4	4	4	5	5	4	7	7	5
OFF-SITE									
Resident, child	12	12	12	16	16	12	23	23	16
Resident, adult	11	11	11	15	15	11	22	22	15
Subsistence farmer, child	12	12	12	16	16	12	23	23	16
Subsistence farmer, adult	12	12	12	16	16	12	23	23	16
Subsistence fisher, child	12	12	12	16	16	12	23	23	16
Subsistence fisher, adult	12	12	12	16	16	12	23	23	16
Native American, child	12	12	12	16	16	12	23	23	16
Native American, adult	12	12	12	16	16	12	23	23	16
Resident, adult	11	11	11	14	14	11	21	21	14
Military worker, adult	12	12	12	15	15	12	22	22	15
Plant worker, adult	15	15	15	19	19	15	29	29	19

ATTACHMENT 8
Summary of Ecological Hazard (Sum of Ecological Screening Quotients) by Receptor

Ecosystem	Receptor	DEQ/E&E EPA Method	DEQ/E&E TOE Geomean
Freshwater (Umatilla River)	Aquatic Biota (Pelagic)	< 1	< 1
	Benthic Invertebrates	< 1	< 1
	Bald Eagle	< 1	**6**
	Canada Goose	< 1	< 1
	Great Blue Heron	< 1	**>1000**
	Long-tailed Vole	< 1	< 1
	Mallard	**1**	**>1000**
	Raccoon	< 1	**>1000**
	River Otter	< 1	< 1
	Spotted Sandpiper	**8**	**>1000**
Shrub-Steppe	Soil Invertebrates	< 1	**5**
	Terrestrial Vegetation	< 1	**9**
	Burrowing Owl	**11**	**56**
	Coyote	< 1	< 1
	Deer Mouse	**33**	**23**
	Mourning Dove	< 1	**65**
	Peregrine Falcon	**9**	**7**
	Pronghorn	< 1	**2**
	WA Ground Squirrel	< 1	< 1
	Western Meadowlark	**14**	**130**

Hazard estimates in **BOLD** are above the acceptable ecological screening quotient (ESQ) of 1, which is considered more toxicologically relevant than the 0.25 target level established in the 2004 RAWP.

Item C Handout
Bruce Hope
presentation

Umatilla Chemical Agent Disposal Facility

Post-Trail Burn Risk Assessment

Environmental Quality Commission
Agenda Item C, Informational Item
April 24, 2008 ~ Portland, Oregon

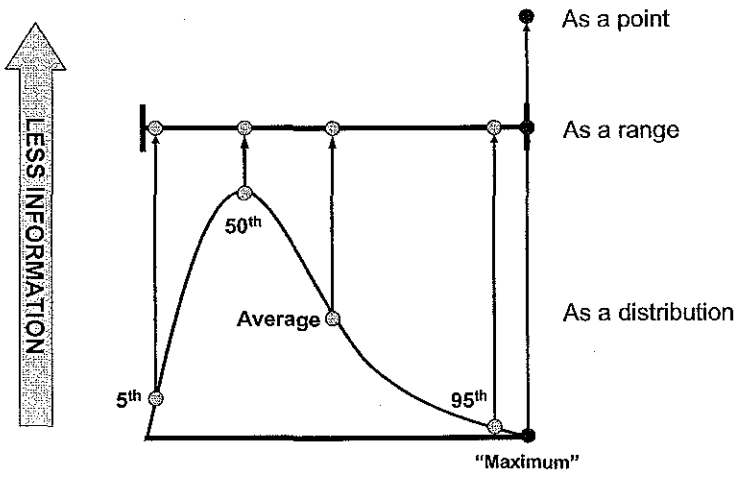
History

- 1997: Screening level assessments
  - Pre-Trial Burn Risk Assessment (OK >400' from stack)
  - Decision to do a Post-Trail Burn Risk Assessment
- 2004: Risk Assessment Work Plan (RAWP)
- 2005: RAWP implementation efforts
- 2006: U.S. Army CHPPM starts risk assessment
  - CTUIR risk assessment in progress
- 2007: DEQ starts assessment to audit CHPPM
- 2008: CHPPM & DEQ assessments complete
  - CTUIR risk assessment complete?

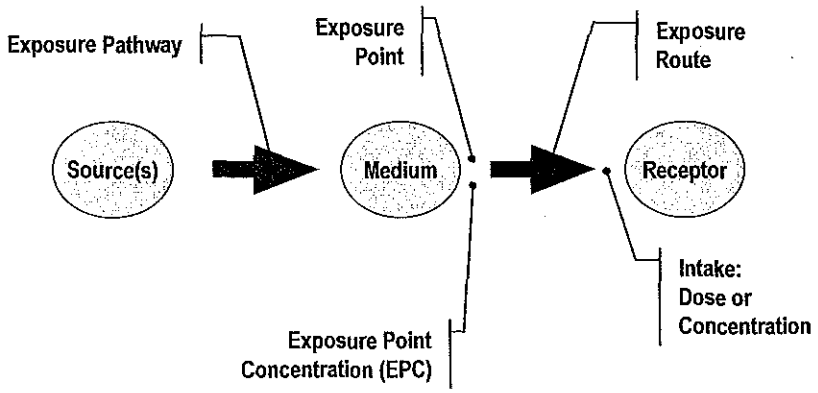
Key Points

- A risk assessment only informs a decision
  - It cannot make the decision
  - Nor was it intended as the only basis for a decision
- Screening-level assessments
  - Are designed to over-estimate risk or hazard
  - Counter uncertainty (lack of information) with layers of precautionary assumptions
    - Plausible but highly improbable scenarios
  - Give only one answer (basically the "worst-case")
- A definitive assessment whould present the range of probable answers, not just one

Always More Than One Estimate



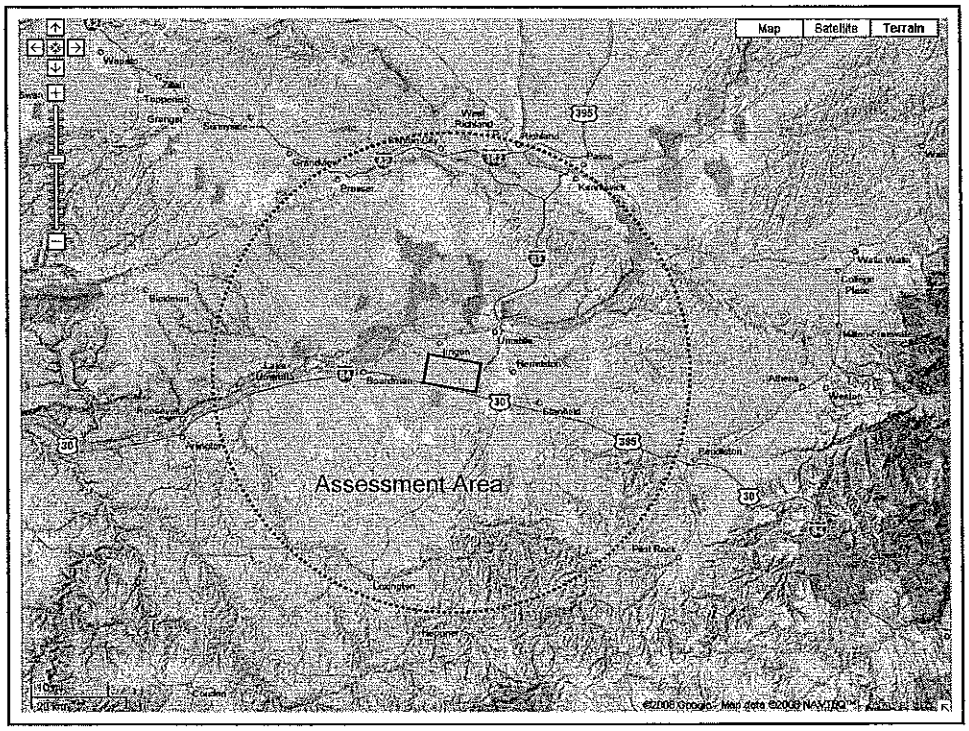
Principal Parts of a Risk Assessment



Assessment Design (1)

- Chemicals of Potential Concern (COPC)
  - 94 named, 3 TOE surrogates*, 3 chemical agents (GB, VX, HD)**, EA 2191 (VX breakdown product)**
- Receptors & Exposure Pathways
  - Human - 8 receptors & 10 pathways
  - Ecological - 2 ecosystems, 10 species each
- Exposure Duration
  - 2 - 70 years
- Assessment Area
  - On-site: Within the UMCDF property boundary
  - Off-site: Within 31-mile radius of UMCDF

* Toxicity estimated
** Assumed present



Assessment Design (2)

- Acceptability of Results
  - Human Health
    - Total Cancer Risk: ≤ 1 in 100,000 excess chance
    - Individual Cancer Risk: ≤ 1 in 1,000,000 excess chance
    - Non-Cancer Hazard: HQ ≤ 0.25 and HI (ΣHQ) ≤ 0.25
  - Ecological
    - Ecological Screening Quotient ≤ 0.25 (essentially an HI)
  - All hazard targets inconsistent with DEQ / U.S. EPA
- Exposure Point Concentration
  - Maximum estimated air concentration or deposition
    - On-site maximum is near stack
    - Off-site maximum is at the UMCDF fence line

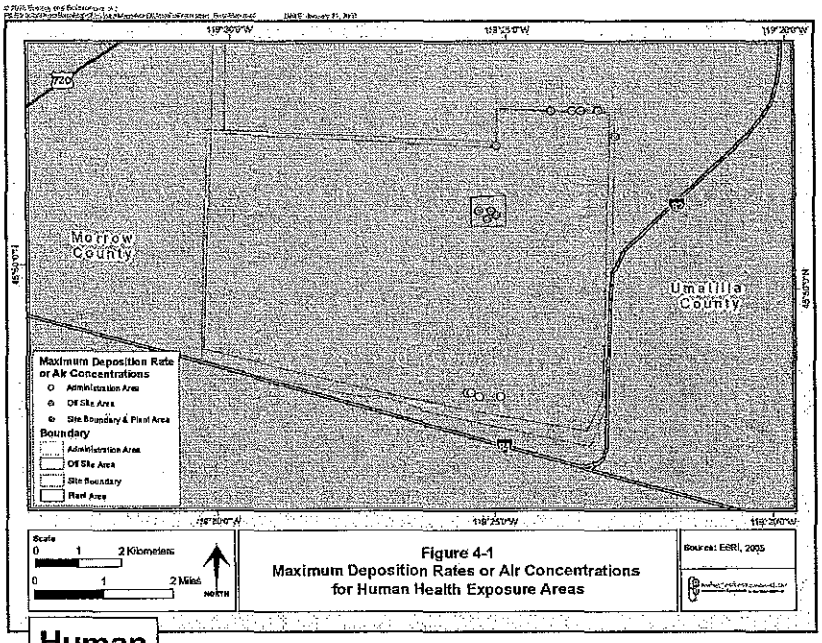


Figure 4-1
Maximum Deposition Rates or Air Concentrations
for Human Health Exposure Areas

Human

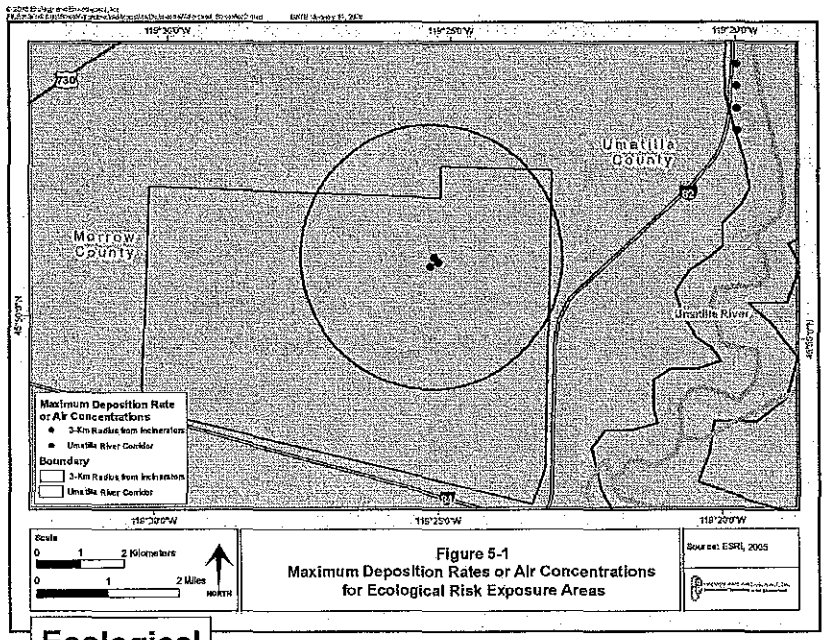


Figure 5-1
Maximum Deposition Rates or Air Concentrations
for Ecological Risk Exposure Areas

Ecological

Results

- CHPPM (Attachment 4)
  - Cancer Risk
    - All < 1 in 100,000
  - Non-Cancer Hazard
    - All HI < 0.25
      - Except Native American ≤ 0.34
  - Acute Non-Cancer Hazard
    - All acute HI < 1
  - Ecological Hazard
    - All HQ < 0.25
    - 10-year comprehensive monitoring program (CMP shows no evident trends (+ or -)
- DEQ (Attachments 5-8)
  - Cancer Risk
    - 3 on-site* receptors > 1 in 100,000
  - Non-Cancer Hazard
    - 6 on-site* & off-site receptors HI > 0.25
      - Resident, Subsistence, Native American
      - No HI > 1.0
  - Acute Non-Cancer Hazard
    - All acute HI > 1 **
  - Ecological Hazard
    - 4 species on-site ESQ > 1
    - 2 species off-site ESQ > 1

* Hypothetical situation
** Error in Attachment 7

Interpretation

- Relaxing only a few assumptions could bring estimates below targets
- Probability of actual risk or hazard (or major adverse impacts) is exceptionally low
  - As currently estimated, risk and hazard do not exist throughout the entire assessment area
- This Post-Trial assessment is sufficient to determine that any further refinement would not be productive
- Suggest strengthening the CMP to inform future resource management decisions

State of Oregon
Department of Environmental Quality Memorandum

Date: April 22, 2008

To: Environmental Quality Commission

From: Dick Pedersen, Acting Director

Subject: Agenda Item D, Informational Item: Director's Dialogue
April 24-25, 2008 EQC meeting

Columbia Gorge Air Quality Project Update
On March 5, 2008, the Department of Environmental Quality (DEQ) and the Southwest Clean Air Agency (SWCAA) met in Hood River with concerned citizens and a variety of groups and tribes to discuss the draft Columbia Gorge air quality strategy report. The day and evening meetings were well attended. Staff presented results of the multi-year Gorge visibility study and discussed several important issues concerning the public and tribes in the Gorge. Not surprisingly, there were many questions about the significance of PGE Boardman power plant's contribution to impaired visibility in the Gorge. Staff discussed the upcoming regional haze plan and BART rule that will require PGE to install emission controls. One of the most significant outcomes was an invitation from the Yakama Nation to meet with DEQ and discuss Gorge issues. Over the next few months, staff will consider comments received at the public meeting before proceeding to the Columbia Gorge Commission with a recommended strategy report. While the timeline originally called for presenting the strategy to the Gorge Commission in April, DEQ and the Gorge Commission Director decided that extra time is needed to fully consider public comment and meet with the Yakama Nation.

Columbia River Total Dissolved Gas Waiver Adaptive Management Update
As directed by the Environmental Quality Commission at the June 2007 EQC meeting, DEQ in coordination with Oregon Department of Fish and Wildlife and Washington Department of Ecology, is working with the Adaptive Management Team (AMT) to address the implementation of the Columbia River total dissolved gas (TDG) total maximum daily load. The AMT is currently reviewing the need for a 115 percent forebay TDG limit for fish passage spill. Currently through state water quality waivers, fish passage spill is limited to 115 percent forebay and 120 percent tailrace TDG limits. Fish passage spill season begins April 1 and ends August 31.

Since the last time we reported to you on TDG in December 2007, the AMT has met three times. At the February and March meetings, tribal members and fish managers presented the impacts to aquatic species passage and survival if the 115 percent TDG forebay limit was removed. At the April meeting, the Army Corps of Engineers

presented information on dam specific fish passage and survival if the 115 percent TDG forebay limit was removed and spill volumes were increased.

It is likely that forebay monitoring will continue at least through the 2008 spill season and spill will be limited to the 115 percent forebay and 120 percent tailrace TDG limits. A decision on whether to remove the 115 percent TDG forebay limit from the state waiver and manage spill to the 120 percent tailrace limit is likely due in January 2009, in time to be implemented during the 2009 fish passage spill season.

The AMT meets on the second Tuesday of each month in Portland. The next meeting is scheduled for Tuesday May 13 from 9 am until noon at National Marine Fisheries Service, 10th floor conference room, in Portland. A call-in number is also available: (503) 326-7672.

Detailed information on the AMT process, including the notes from the AMT meetings, can be found at the Washington Department of Ecology's website: http://www.ecy.wa.gov/programs/wq/tmdl/columbia_rvr/columbia_tdg.html

Fish Consumption Rate Project

A fourth public workshop to discuss the findings of the Human Health Focus Group (HHFG) was held in Pendleton on April 2, 2008. The group presented their findings on the relevant fish consumption surveys for Oregon. Consistent with the group's initial charge, members did not recommend a specific fish consumption rate value. Dr Bruce Hope, toxicologist at DEQ, presented various fish consumption rate options derived from the consumption surveys reviewed by the HHFG. The afternoon session consisted of small group discussions. The workshop was well-attended by members from tribes throughout Oregon. Presentations from the workshop are available on DEQ's website at: http://www.deq.state.or.us/wq/standards/fish.htm.

The Fiscal Impacts and Implementation Advisory Group (FIIAC) held its second meeting on April 8. The group discussed fiscal impacts and established a framework for developing and discussing potential implementation approaches for revised criteria based on a new fish consumption rate. The next meeting of the FIIAC will be May 6.

Remaining activities related to the project include a public workshop currently scheduled for June 4-5 in Portland to discuss toxic reduction efforts and the findings of the FIIAC (the date may change; please confirm on website). DEQ plans to bring an informational item to the August 2008 EQC meeting in preparation for a decision by the EQC in October.

Lakeside Landfill

1. Solid Waste Landfill Permit

DEQ issued a closure permit to Lakeside Reclamation Landfill on March 27, 2008, that allows acceptance of construction and demolition waste only. Compared to the previous

operating permit, the new closure permit contains many substantive changes designed to reduce the potential for future environmental impacts, including the following new requirements and conditions:

- Cessation of waste acceptance at Lakeside Reclamation Landfill by July 1, 2009;
- Increased restriction on the types of waste that Lakeside can accept;
- Detailed waste screening and acceptance procedures;
- Improved management of on-site material stockpiles;
- Improved health and safety procedures; and
- Expanded groundwater and landfill gas monitoring program.

DEQ provided opportunity for public comment from November 29, 2007 through January 15, 2008, with a public hearing on January 8, 2008. Twenty-nine people provided oral comments and numerous people submitted written comments on the draft permit and remedial investigation. DEQ has prepared a hearings officer report and response to the comments, which is posted on DEQ's website, along with other information about Lakeside: www.deq.state.or.us/nwr/LakesideReclamation.htm

2. Clean Up Activities

Landfill leachate has affected groundwater quality, although observed contaminants and general water quality impacts are predominantly non-hazardous in nature with respect to human health. The most notable impacts are elevated levels of total dissolved solids, chloride, iron, manganese, and zinc and the depletion of oxygen. Lakeside is completing a remedial investigation to evaluate the nature and extent of human health and environmental impacts. This investigation includes: 1) locating and evaluating the vulnerability of domestic and irrigation wells in the area; 2) determining the concentration and rate of contaminant migration into the Tualatin River; 3) evaluating impacts to aquatic biota in Tualatin River (benthic survey); and 4) determining the effectiveness of the landfill cover. DEQ has determined that the remedial investigation benthic survey portion is inconclusive and that contaminant levels in compliance wells near the Tualatin River exceed a number of ecological screening values and ambient water quality criteria established for protection of aquatic organisms. In addition, DEQ has identified data gaps in the remedial investigation related to: 1) contaminant loading to the Tualatin River; 2) compliance with the River's established TMDLs; and 3) landfill releases that may impact Lakeside's irrigation ponds and the adjacent, unnamed creek. Because of these environmental concerns, DEQ is requiring Lakeside to conduct a feasibility study to evaluate options for controlling or treating groundwater contamination.

3. Water Quality Concerns

DEQ has issued a pre-enforcement notice (PEN) to Lakeside Landfill, identifying water quality violations that require correction. The main violations cited are uncontrolled stormwater discharges and discharging stormwater to state waters without a permit. DEQ is requiring Lakeside Landfill to apply for and obtain a stormwater discharge permit. A permit will require the stormwater to meet water quality standards to protect the Tualatin River and groundwater. DEQ's Northwest Region is referring this case to DEQ's Office

of Compliance and Enforcement (OCE), recommending that a civil penalty be considered.

Stormwater discharges have been documented from the facility to the ponds at the site since January 2008. The ponds are connected to site groundwater and to the Tualatin River, which are considered state waters. The Tualatin River is not meeting water quality standards now and DEQ is targeting it for water quality improvements.

Bradwood Landing LNG Proposal

The 401 water quality certification program has been compiling the water quality issues concerning the Bradwood proposal raised in public comments and by attendees of the public meeting held in Astoria in March 2008, and has recently presented a partial information request to Northern Star, the applicants for the Bradwood Landing LNG proposal. The information request centers around the effects of hydraulic alteration of the area proposed for dredging. This highly dynamic area of the estuary is in a critical position immediately upstream of an extensive island chain containing several designated wildlife refuges. DEQ coordinated with National Marine Fisheries and U.S. Fish and Wildlife services in preparing this information request, and has met with the applicant's consultants to discuss it. DEQ will continue to compile the voluminous public input on this proposal and will submit an additional request for further information on other aspects of the proposal in the next few weeks. Northern Star has not yet submitted an application to DEQ for air or water quality permits.

Union Pacific Railroad Eugene Cleanup

Vapor barriers and ventilation systems have been installed in seven potentially-affected Trainsong neighborhood homes. DEQ staff are evaluating their effectiveness through sampling to be completed next fall. Recent samplings show concentrations below DEQ and Department of Human Services levels of concern. DEQ plans to complete the remedial investigation by the end of this year, and to begin the feasibility study of final cleanup options by early next year.

The City of Eugene's citizens advisory group met for the first time in March, and has begun fact-finding about issues in neighborhoods adjacent to the railyard. The facilitator is working hard to narrow and clarify the advisory group's focus. So far, members have technical questions regarding the investigation and cleanup as well as continuing concerns about DEQ's technical independence from the railroad. DEQ, DHS, and the Lane Regional Air Protection Agency will be invited to future citizen advisory group meetings to provide information and address concerns.

In May DHS will release a cancer study of the area. The study was initiated due to concerns with air discharges at the JH Baxter wood treating site, but has since been expanded to a general area assessment. DEQ will work closely with DHS to provide accurate information to the public and media once the study's conclusions are released.

City of Portland Supplemental Environmental Projects
DEQ assessed the City of Portland a $449,800 civil penalty in November 2005 for 67 discharges of raw sewage from its separated sewer system dating back to 2001. At the time it was issued, that civil penalty was one of the five largest penalties DEQ had ever assessed. As DEQ and the city were negotiating a settlement, additional sewage discharges occurred. DEQ and Portland have agreed to additional penalties for these violations bringing the total penalty to $586,600. The settlement, which became final on April 8, requires the city to pay a penalty of $117,320 and spend $471,000 on Supplemental Environmental Projects (SEPs) which is the largest amount in the history of the SEP program.

The four SEPs the City of Portland will pay for are:

- Restoration of the Errol Creek basin in southeast Portland's Johnson Creek watershed. Errol Creek is considered a high priority for restoration because of its abundant cool water springs. Its location as a tributary near spawning habitat in Johnson Creek makes it ideal fish refuge and rearing habitat. In-stream construction work is scheduled to begin in summer 2009, with project completion in 2010. The city is contributing $300,000 to the project, which will leverage an additional $177,000 in grants and in-kind donations for a project cost of $477,000.
- Retrofitting the Cathedral Park boat ramp parking lot in north Portland for improved stormwater management. Currently, stormwater runoff from the heavily used parking lot flows down the ramp directly into the Willamette River without any treatment. Installation of stormwater planter facilities at the site will create a treatment system to capture runoff and filter pollutants at an estimated cost of $86,000.
- Construction of a water quality swale along the north side of the Beaverton-Hillsdale Highway, at SW 35th Avenue in the Fanno Creek Watershed. The swale will help treat runoff from a nearby storm system outfall pipe at an estimated cost of $45,000.
- Construction of two water quality swales to collect and filter water from the roadway along SW Capitol Highway, near Portland Community College's main campus in the Ball Creek subwatershed of Fanno Creek Basin. The estimated cost for this project is $40,000.

Nehalem River basin Cleanup Efforts
In December of 2007, two powerful storms hit the northwest corner of the state. Among the most severely impacted areas, as you may recall, were the communities of Vernonia and Mist in the Upper Nehalem River. DEQ assisted communities by sponsoring a household hazardous waste collection event to manage flood-damaged hazardous waste. We also assisted communities in Columbia, Clatsop and Tillamook County with technical assistance and emergency permits for management of solid waste debris.

About a month ago, DEQ began to receive reports from volunteers involved in removal of flood debris that they were encountering many barrels and containers possibly containing hazardous waste. DEQ, with assistance from EPA and many local community groups, initiated a 10-day recovery operation early in April to remove potentially hazardous containers from the river and floodplain areas. Over 2700 containers of various sizes were collected from the Nehalem River floodplain, collection events, and at ad hoc household hazardous waste collection points. The majority of these containers were empty, but significant amounts of waste oil, paints, and household chemicals as well as several propane cylinders were removed, protecting the watershed and local citizens.

Office of Compliance & Enforcement Process Improvement Event
The Office of Compliance and Enforcement is undertaking DEQ's first-ever Kaizen process improvement event during the week of May12th. An increasing number of state agencies, as well as the EPA, are successfully increasing their level of efficiency and public service using the Kaizen methodology.

During the Kaizen event, a professional facilitator will lead a team of DEQ staff representing all the programs in mapping out the current process DEQ follows from the time a violation is documented, to the time a civil penalty assessment is issued. The group will determine which steps in the current process cause unnecessary delay and will design a more efficient process that will shorten the time it takes to issue civil penalty assessments and orders. The acting director and Executive Management Team fully support this effort and will ensure that the new process adopted by the Kaizen team is implemented.

Potential China/Oregon Environmental Exchange Opportunity
Oregon has a sister state relationship with the Fujian Province of China under the sponsorship of the Oregon Legislature's Joint Committee on Oregon Fujian Relations. DEQ and the Portland Bureau of Environmental Services (BES) are considering a joint environmental exchange between Oregon and Fujian Province and the cities of Portland and Xiamen, possibly as soon as spring or summer of 2008. Fujian Province and Xiamen are located on the central China coast directly across from Taiwan.

The environmental exchange would likely focus on air quality issues, specifically vehicle emissions testing, for DEQ and wastewater issues for Portland. The city of Xiamen is interested in improving its wastewater program to enhance the health of its estuary; water re-use is one area of particular interest for the city. Both the air and water issues align closely with DEQ efforts. Current thinking is that a delegation of 3-4 Chinese representatives would come to Portland, and in turn, a similarly sized delegation from Oregon would travel to Fujian.

CTUIR Comments on January 2008 UMCDF Risk Assessment

Presented to:
Oregon
Environmental Quality Commission

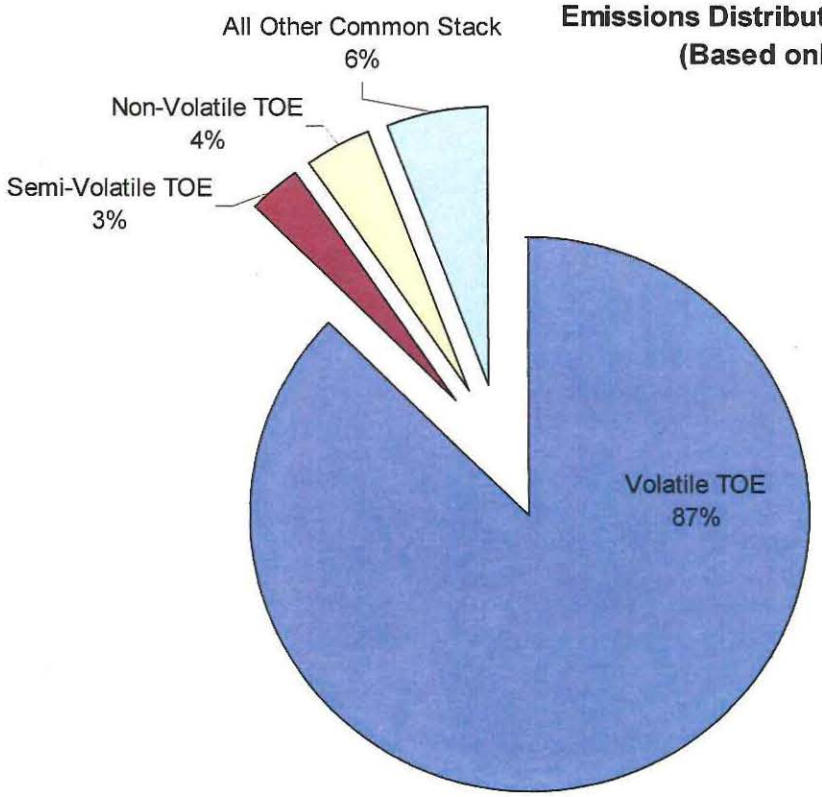
24 April 2008

Sue Oliver for Rod Skeen Handout 4/24/08 Item C Public Forum

CTUIR Opinion on the UMCDF Risk Assessment

- The April 7, 2008 DEQ staff report to the EQC is not protective of human health and the environment
  - Not consistent with the DEQ RAWP
  - Ignores the potential impacts of measured emissions (TOE fractions)
  - Ignores the unscrutinized nature of the January 31, 2008 results
  - Ignores the exceedance of DEQ established action levels
  - Overstates the conservative nature of the risk assessment
- The DEQ's failure to complete a human health and ecological risk assessment prior to January 31, 2008 may have resulted in subjecting the Hermiston area to unacceptable levels of risk
- DEQ must act immediately to:
  - Work with the CTUIR to resolve unanswered questions that result from application of the 2004 RAWP
  - Identify and implement process modifications to the UMCDF that reduce risk to acceptable levels
  - Determine mitigation options for past risk the Tribe has been subjected to

Common Stack Emission Distribution



Emissions Distribution for Common Stack (Based onHHRA Values)

94% of Emissions are unidentified organics (TOE).

Importance of Post-Trial Burn Risk Assessment

- Risk assessment is used to verify protective emission limits
  - Current emissions standards were set by the 1996 pre-trial burn risk assessment
  - Pre-trial burn risk assessment did not account for:
    - Local conditions
    - Tribal population
    - Site-specific emissions
  - Post-trial burn risk assessment accounts for local factors
- Risk assessment provides the only estimate of potential health impacts to the surrounding population
  - Most emissions are <u>not monitored</u>
  - Comprehensive monitoring program was not designed to detect concentrations that can cause health risks

Time Line

- **1996-1997** - Pre-Trial Burn Risk Assessment completed and used to confirm RCRA permit emission
- **1997** - RCRA permit contained provision in Section II.N for the Permittee to complete a post Trial Burn Risk Assessment Work Plan and Protocol
- **1998** - RCRA Permit was modified [UMCDF-98-002-MISC(1R)] to move responsibility of the RA protocol from the Permitee to the DEQ
- **2002-2003** - Multi-agency Technical Work Group met to develop a Risk Assessment Work Plan (RAWP)
  - DEQ, USFWS, Oregon Dep't. of Ag., CTUIR, CHPPM, ODH, ODFW, ATSDR, WDOH, EPA, US EPA Tribal Coord., Washington Dept. of Ag.

Time Line (continued)

- **2002** - Surrogate trial burns begin
- **October – December 2003** – Public review and comment on the draft Risk Assessment Work Plan (RAWP)
- **August 2004** – DEQ finalized RAWP and responded to public comments
- **August 2004** – EQC makes decision to allow agent processing
- **September 2004** – GB agent processing commences
- **2004-2005** – CTUIR works with Lakes Environmental to develop Umatilla specific IRAP-H™ tool. Activities coordinated with DEQ
- **April-December, 2005** – DEQ contracts with Tetra Tech to prepare data input files for using IRAP-H™ and EcoRisk™ software to conduct risk assessments as prescribed by the RAWP
- **October 2006** – CTUIR presents risk assessment results to DEQ and Army indicating significant potential for risks above RAWP threshold

Time Line (continued)

- **2006-2007** – CHPPM begins work on conducting risk assessment using Army's risk assessment software and RAWP methodology
- **2006-2007** – DEQ initially contracts with E&E to review CHPPM documents, but then contracts E&E to conduct its own risk assessment
- **July 2007** – GB Agent Campaign Completed
- **August 2007** – CTUIR submits letter to Oregon Governor requesting the risk assessment be completed before VX operations commence
- **October 1, 2007** – USACHPPM presents preliminary risk results to DEQ and CTUIR that confirm exceedance with 2004 RAWP
  - Also present alternative approach that shows no risk exceedance
  - Second approach forms basis of CHPPM March 2008 report
- **October 29, 2007** – First VX Rocket destroyed
- **January 24, 2008** – CTUIR, USACHPPM, DEQ meet in Hermiston to present risk assessment results
  - ALL RAWP based analysis show risk levels above RAWP thresholds

Time Line (continued)

- **January 31, 2008** – Ecology and Environment (E&E) submit report to DEQ
- **January 31, 2008** – DEQ's contract with E&E runs out
  - No review, or quality control on report
- **February 2008** – USACHPPM submits their risk report which ignores the presence of measured, but unidentified, TOE
- **April 2008** – DEQ produces staff report for EQC which presents E&E data, and finds "exceptionally low risk"

Failures of the DEQ

- The DEQ allowed the Army to start processing in 2004 without a method to evaluate the risk of the UMCDF.
  - Framework document (Risk Assessment Work Plan, RWAP) in place
  - Had no means to implement the RAWP
  - Letter, but not intent of Permit Conditions II.N.2 and II.N.3 are met
- Between 2004 and January 2008 the DEQ allowed the facility to operate without a site-specific evaluation of the health impacts.
  - CTUIR warned the DEQ in October 2006 that unacceptable risks were probable
  - CTUIR wrote Governor in August 2007 to request VX operations not start until the risk assessment completed
- The DEQ allowed the contract with their risk assessment subcontractor (Ecology and Environment) to expire in January 31, 2008.
  - E&E had only a few days to compile their final report
  - There is an order of magnitude difference between the acute inhalation risk values published by E&E and those estimated by the CTUIR using E&E input data sets
  - Current E&E report has not been adequately reviewed and evaluated by the DEQ

Failures of the DEQ

- The April 7, 2008 staff report on the UMCDF risk assessment is not protective of human health and the environment
- The staff report asserts that UMCDF has "exceptionally low" risk even though:
  - Tribal cancer risks are 30x the DEQ established action level
  - Tribal hazard risks are almost double the DEQ established action level
  - Tribal acute inhalation risk are 100x the established action level
  - Ecological risks are >1000 times the EPA action level and >4000 times the 2004 RAWP action level

Failures of the DEQ (continued)

- The staff report contains exaggerated claims of safety
  - The DEQ claims the UMCDF risk assessment contains:
    - *"...assumptions that compensate for uncertainty by significantly increasing the possibility that the assessment's risk or hazard estimates are greater than any actual risk or hazard posed by exposure to facility emissions."*
  - However, the risk assessment team strove to produce a representative risk assessment, not an absolute upper bound
- Many key processing parameters are not worst case values, but represent average (reasonable) site conditions
  - BRA metals emissions
  - Process upset factors
  - Time and munitions weighting of common stack emission rates
  - Non-detects set at zero and not the EPA recommended level (RDL or SQL)
  - Geometric mean TOE toxicity instead of EPA recommended weighting approach.
- Tribal exposure scenario is central tendency representation of a traditional lifestyle
  - No "worst-case" exposure parameters
- Toxicity factors are from standard sources (IRIS, etc.) and contain conventional uncertainty factors as described in EPA guidance documents

Request of EQC

- Reduce the future risk to Tribal members and the general population by:
  - Not accepting the current staff findings on the UMCDF post-trial burn risk assessment
  - Directing the DEQ to use the 2004 RWAP as the risk analysis standard for the UMCDF
  - Directing the DEQ to work with the CTUIR to resolve unanswered questions that result from application of the 2004 RAWP (i.e. verify the health hazard of the unidentified TOE)
  - Directing the DEQ to identify and implement process modifications that reduce risk to acceptable levels
- Determine mitigation options for past risk the Tribe has been subjected to

CTUIR Comments on March 2008 CHPPM Risk Assessment for UMCDF

Presented to:
Oregon
Environmental Quality Commission

24 April 2008

Sue Oliver for Rod Skeen Handout 4/24/08 Item C Public Forum

CHPPM Claims to Follow EPA 2005 Guidance

- "In general, direct and indirect health risks and hazards were estimated sing an iterative (sequential) approach based on U.S. Environmental Protection Agency (EPA) guidance and recommendations." (Executive Summary, Paragraph 2).

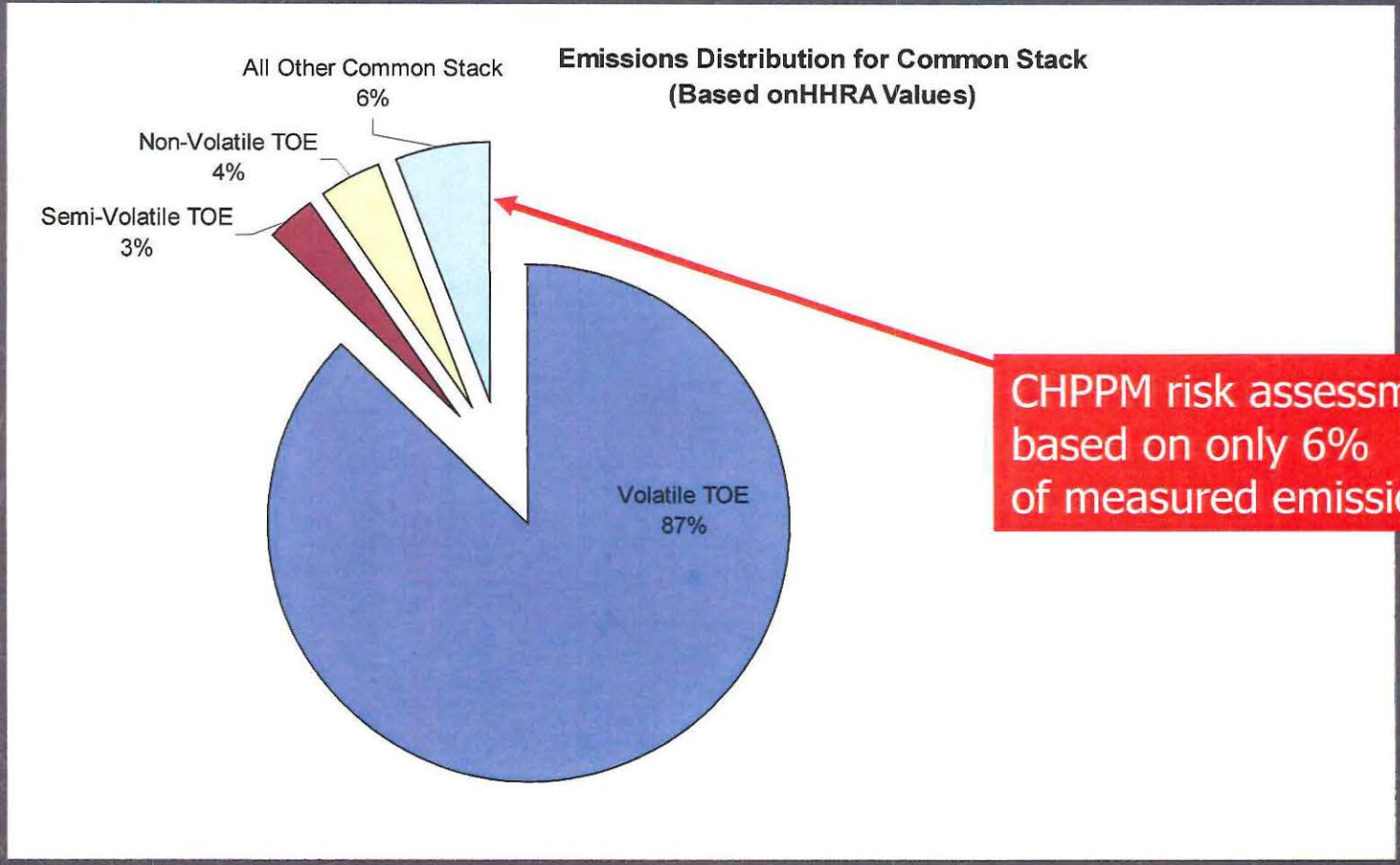
CHPPM Analysis Deviates from EPA Guidance in Key Areas

- EPA guidance requires non-detected (ND) compounds to be evaluated as COPCs at their detection if:
  - Present in waste feed, or
  - Has a high potential to be a product of combustion, or
  - There are site-specific factors that make it a possible emission
- CHPPM only evaluated detected compounds plus agent and EA2192
  - RAWP required inclusion of ND compounds
  - CTUIR, DEQ, CHPPM agreed to remove all ND compounds and lump with TOE values.

Examples of Excluded Feed Compounds

COPCNum	COPCName	CASRN
307	Isopropanol	67-63-0
39	1,1,1-Trichloroethane (TCA or methyl chloroform)	71-55-6
40	1,1,2-Trichloroethane	79-00-5
280	Triacetin (Glycerol triacetate)	102-76-1
23	1,2-Dichloroethane (EDC)	107-06-2
288	Diethyl disulfide	110-81-6
313	Thiodiglycol	111-48-8
275	2-Nitro-diphenylamine	119-75-5
110	Diphenylamine	122-39-4
115	Fluoranthene	206-44-0
279	Tetryl (2,4,6-Trinitrophenyl-methylnitramine)	479-45-8
300	Divinyl sulfide	627-51-0
303	2-Chloroethyl ethyl sulfide	693-07-2
309	Methyl phosphonic acid	993-13-5
299	Diisopropyl methyl phosphonate (DIMP)	1445-75-6
308	Isopropyl methylphosphonic acid	1832-54-8
276	Potassium chlorate	3811-04-9
277	Potassium perchlorate	7778-74-7
282	Bis (2-chloroethoxy)-2(2-chloroethylthio)ethane	999-999-999
283	Bis-2 (bis(2-hydroxy ethyl-sulfonium ethyl) sulfide dichloride	999-999-999
284	Bis (2-Diisopropylaminoethyl) thioether	999-999-999

Common Stack Emission Distribution



CHPPM Analysis Deviates from EPA Guidance in Key Areas

- EPA guidance calls for the numerical evaluation of risk resulting from unidentified organic compounds (TICs, TOE) and discussion of these findings in uncertainty section
- CHPPM report does mention TOE values or TICs and does not discuss their potential contribution to risk.

Conclusion

- CHPPM report drastically under-represents risk by ignoring the presence of measured, but unidentified, organics in UMCDF emissions
- CHPPM report follows neither the EPA 2005 combustion guidance, nor the 2004 RAWP.

CTUIR Risk Analysis of UMCDF Processing Risk

Presented to:
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Environmental Quality Commission

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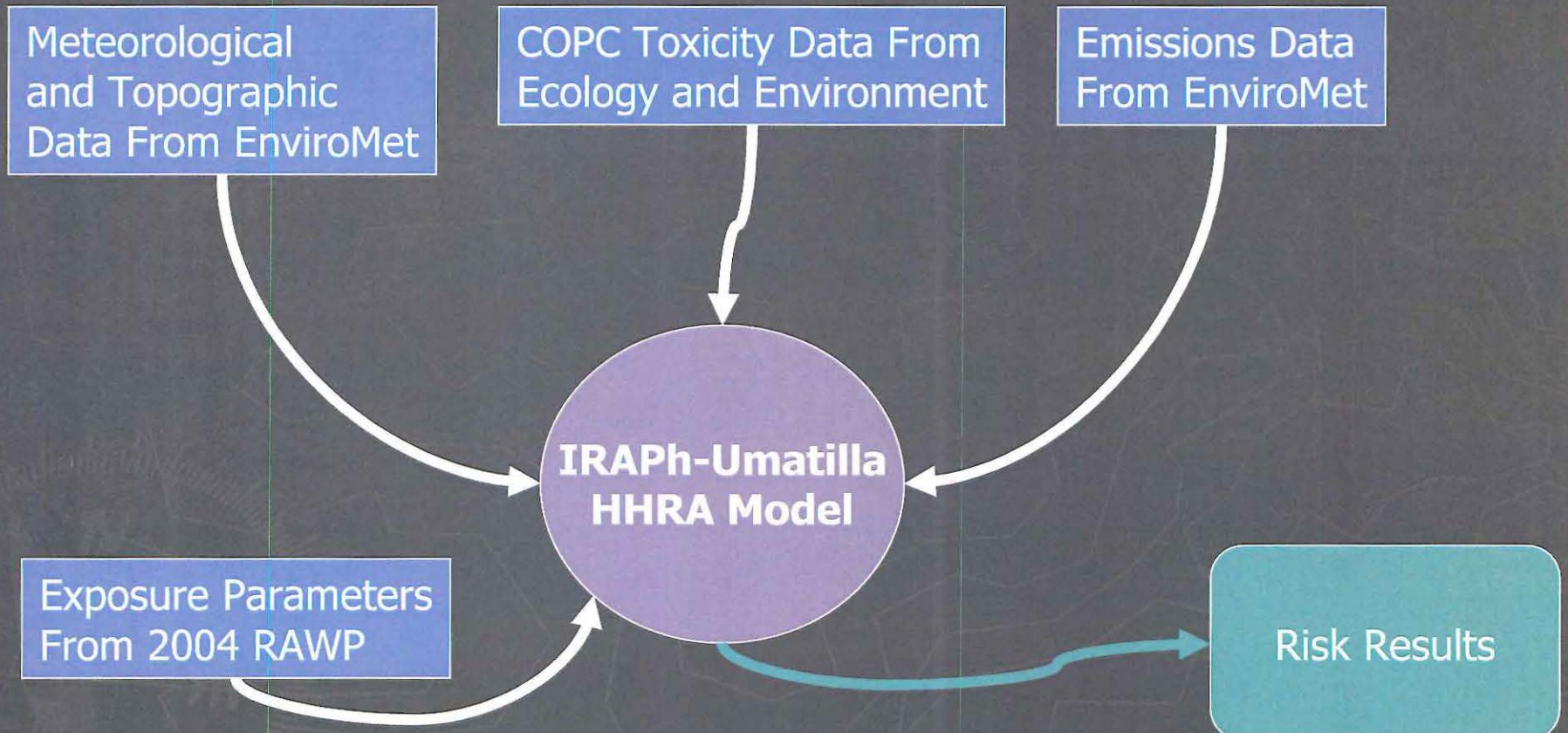
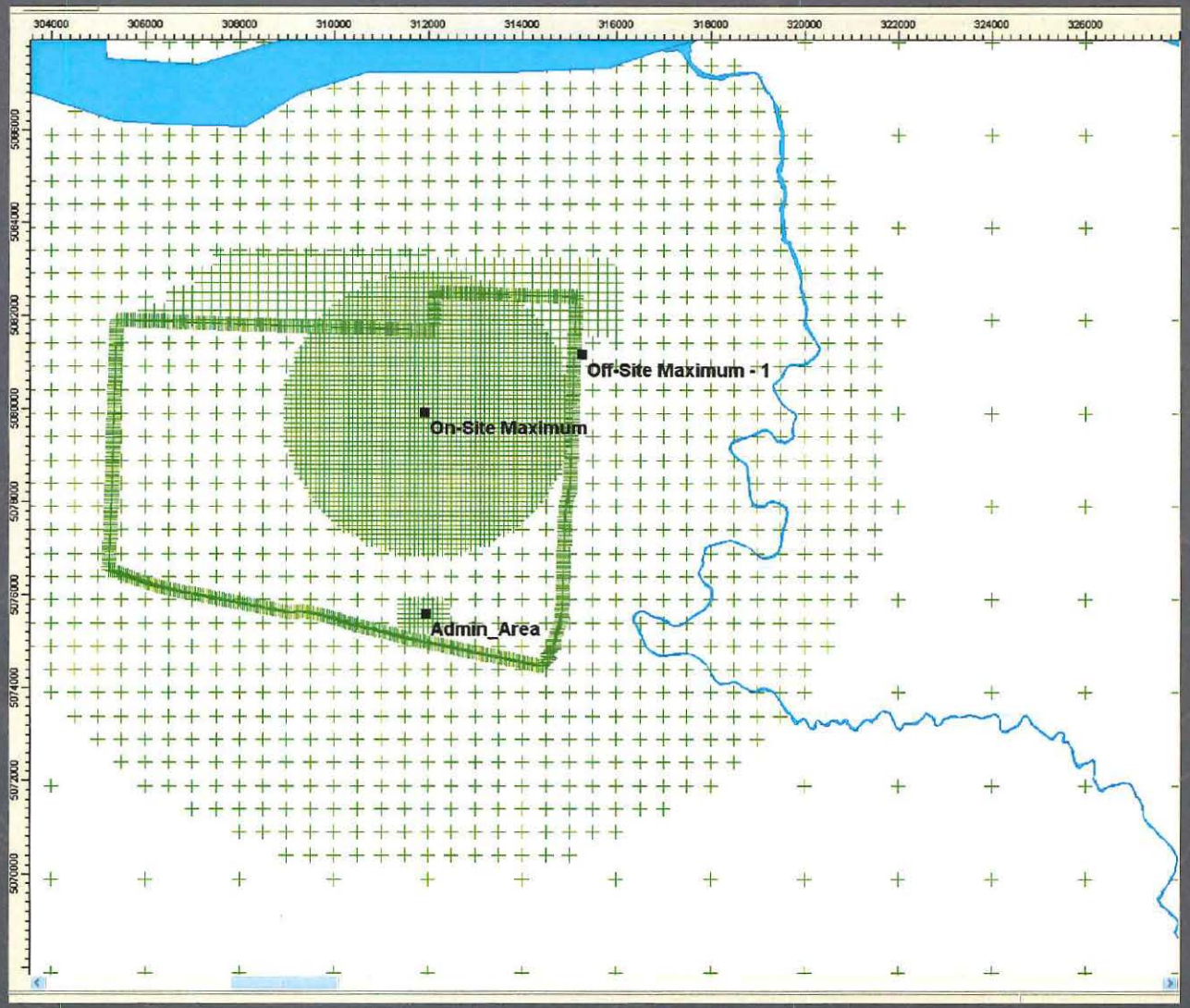
Handout 4/24/08
Item C Public Forum

Data Sources



CTUIR model is identical to model used by E&E for their January 31, 2008 Report

Receptor Locations



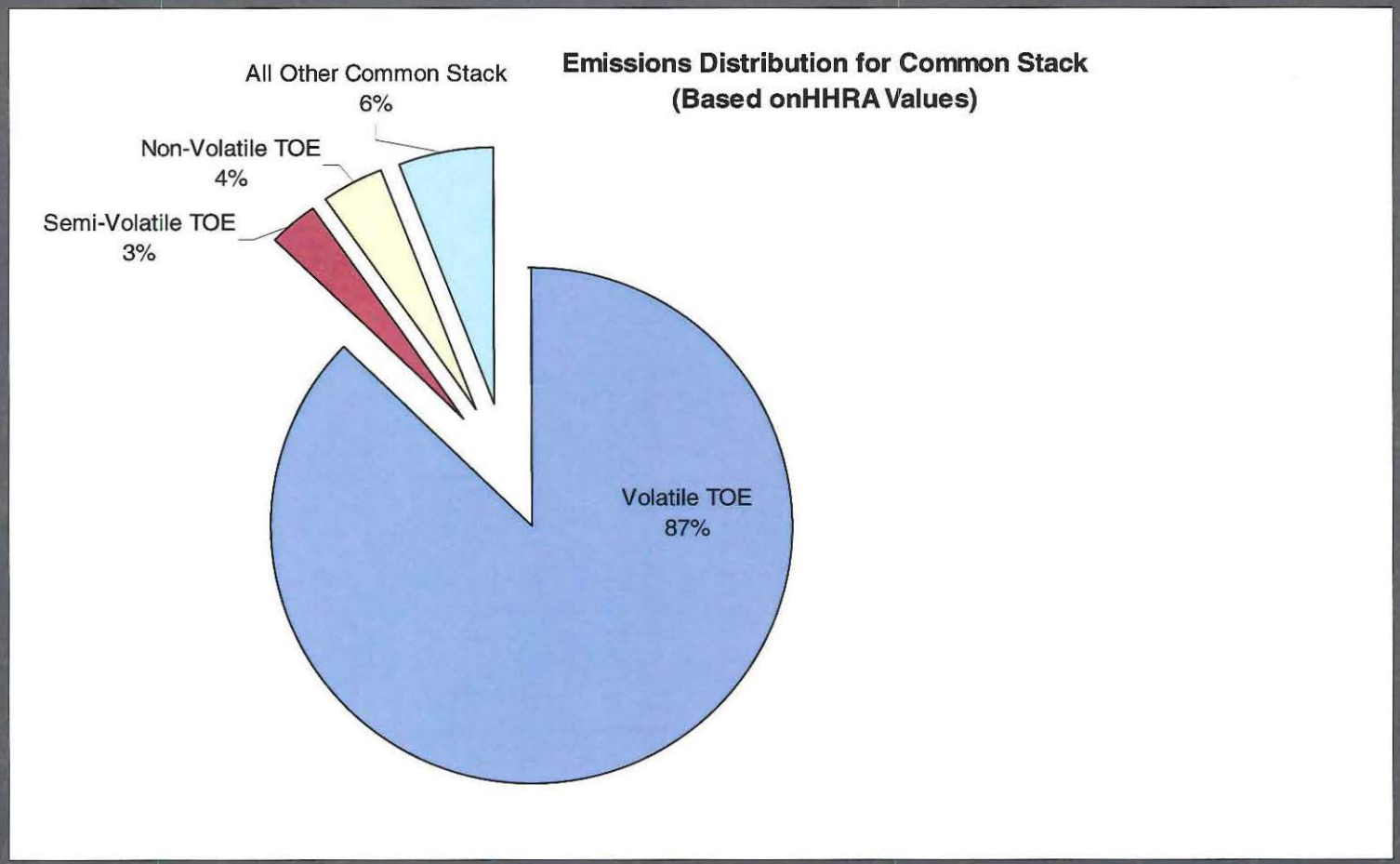
Emission Rates

- Common Stack
  - 94 detected compounds at maximum measured levels
  - 3 agents at detection limits in furnace exhaust
  - 3 composite TOEs at maximum measured levels
  - EA2192
- BRA Stack
  - Organics at measured levels from performance test
  - Metals at measured feed levels less the systems removal efficiency
  - Agent at detection limits

Emission Rates (Continued)

- LAB Stack
  - All agents at detection limits for lifetime of operations
- MDB Stack
  - All agents at detection limits for lifetime of operations

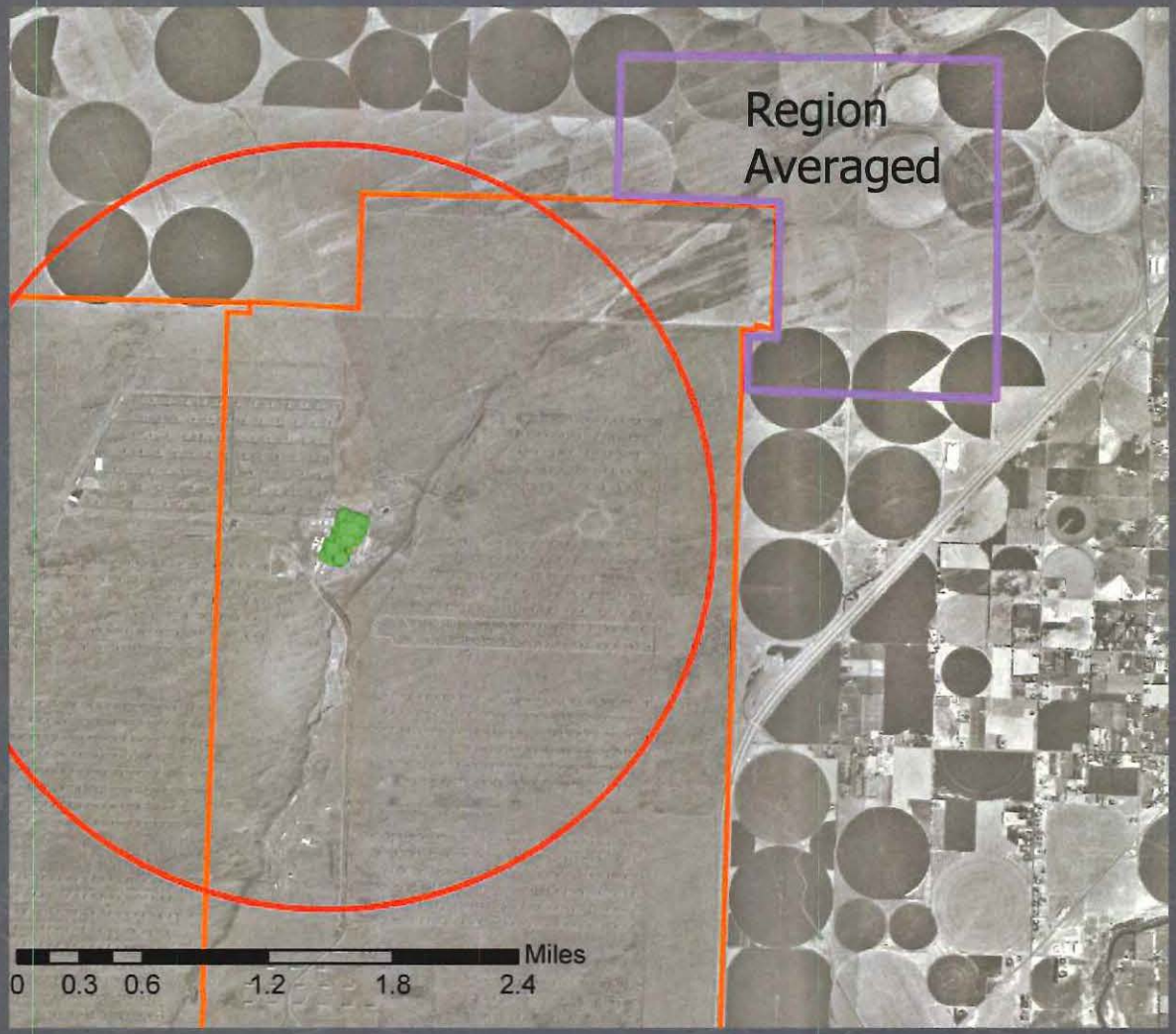
Common Stack Emission Distribution



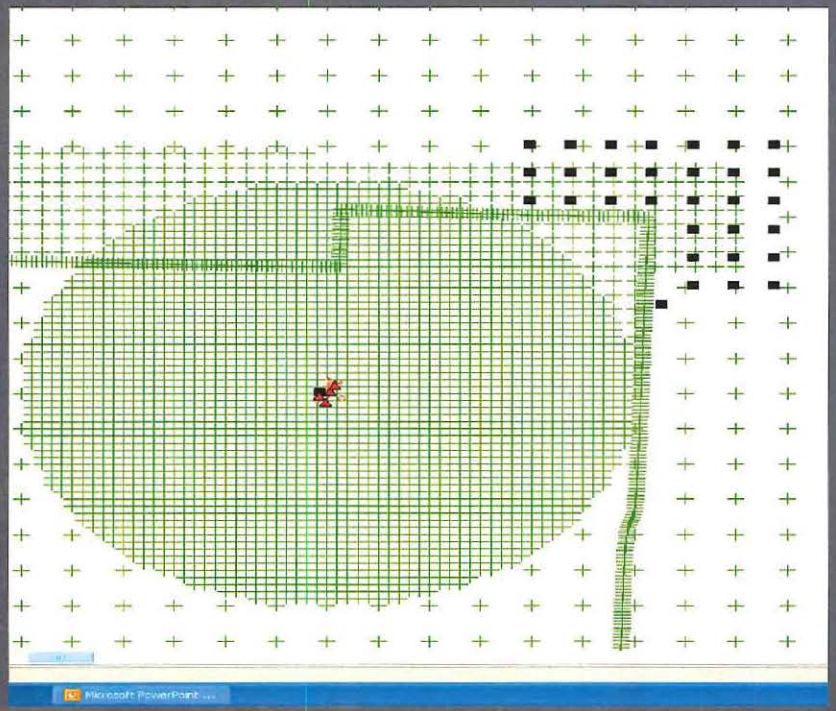
Cases

- Base Model – Closely follows 2004 RAWP
- Base Model – CHPPM toxicity data
- Base Model – No TOE compounds
- Base Model – Area average for off-site

Location of Area Average (4.3 km^2)



Average Area (4.3 km^2)



Parameter	Sum of All Sources	
	Average	Composite
Hourly air conc'n - particle phase	39.96525	161.5606
Hourly air conc'n - particle bound	39.36501	161.5523
Hourly air conc'n - vapor phase	34.88221	147.8673
Hourly air conc'n - vapor phase hg	34.03753	155.807
Air conc'n - particle phase	0.366553	0.62467
Air conc'n - particle bound	0.36933	0.63095
Air conc'n - vapor phase	0.359159	0.61867
Air conc'n - vapor phase hg	0.333685	0.60688
Dry deposition - particle phase	0.07859	0.14863
Dry deposition - particle bound	0.055502	0.10389
Dry deposition - vapor phase	0.067671	0.11199
Wet deposition - particle phase	0.001813	0.0033
Wet deposition - particle bound	0.001301	0.00205
Wet deposition - vapor phase	0.002825	0.00504

Risk Limits

- 2004 HHRA Work Plan established the following limits:
  - No individual Cancer Risks above 1E-6
  - Total Cancer Risk below 1E-5
  - Individual HQ below 0.25
  - Total HI for specific effect and organ below 0.25
  - Acute Inhalation HQ for individual compounds below 1.0
  - Ecological Screening Quotients below 1.0

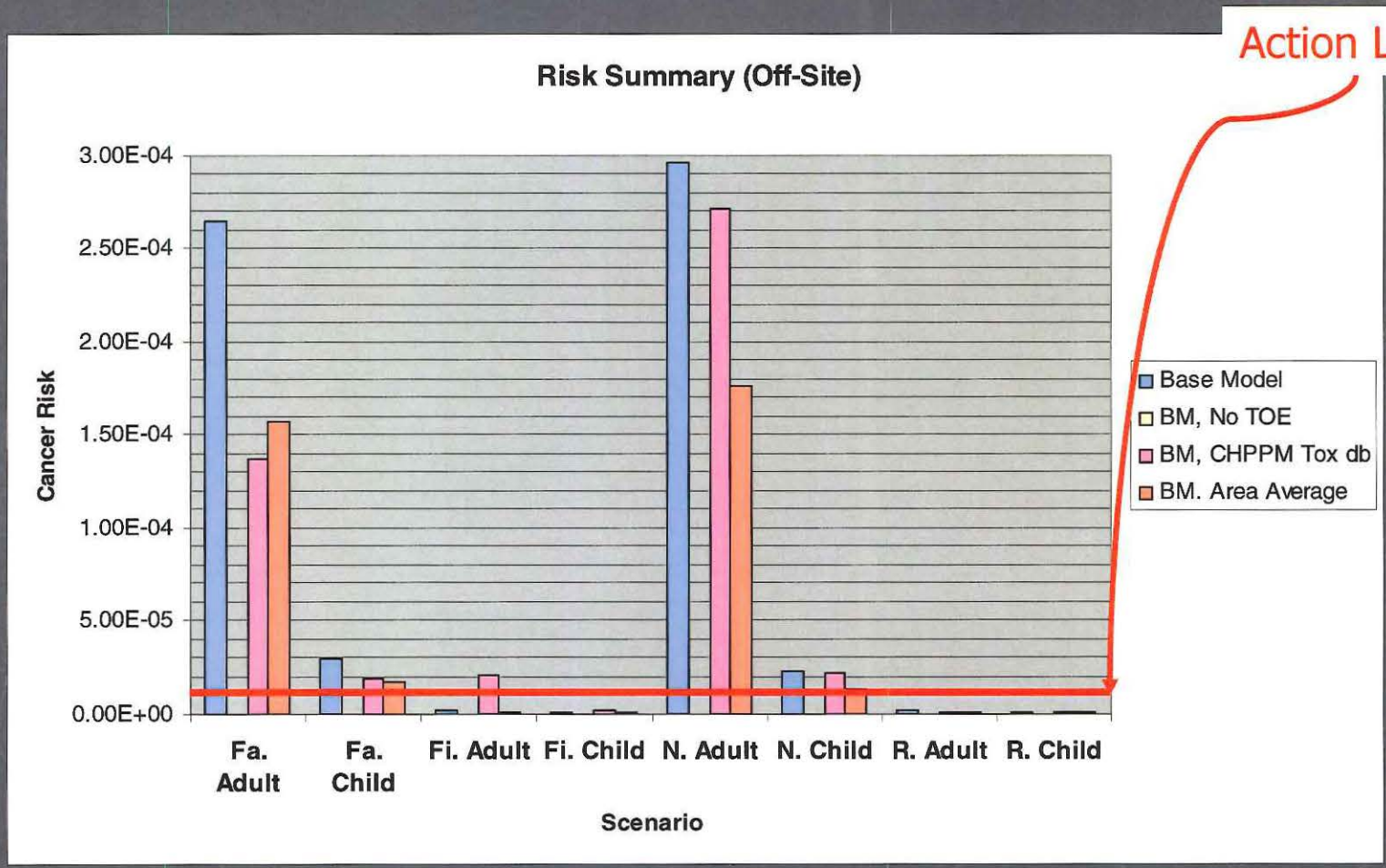
Summary of Results (Off-Site)

OFF-SITE (CR)	Fa. Adult	Fa. Child	Fi. Adult	Fi. Child	N. Adult	N. Child	R. Adult	R. Child
Base Model	2.64E-04	2.98E-05	2.11E-06	1.38E-06	2.96E-04	2.31E-05	1.97E-06	1.38E-06
BM, CHPPM Tox db	1.37E-04	1.87E-05	2.12E-05	1.64E-06	2.72E-04	2.18E-05	5.56E-07	6.07E-07
BM, No TOE	3.72E-08	6.85E-09	1.04E-09	6.01E-10	5.16E-08	6.35E-09	8.01E-10	6.08E-10
BM. Area Average	1.57E-04	1.75E-05	1.37E-06	8.90E-07	1.77E-04	1.36E-05	1.37E-06	8.91E-07

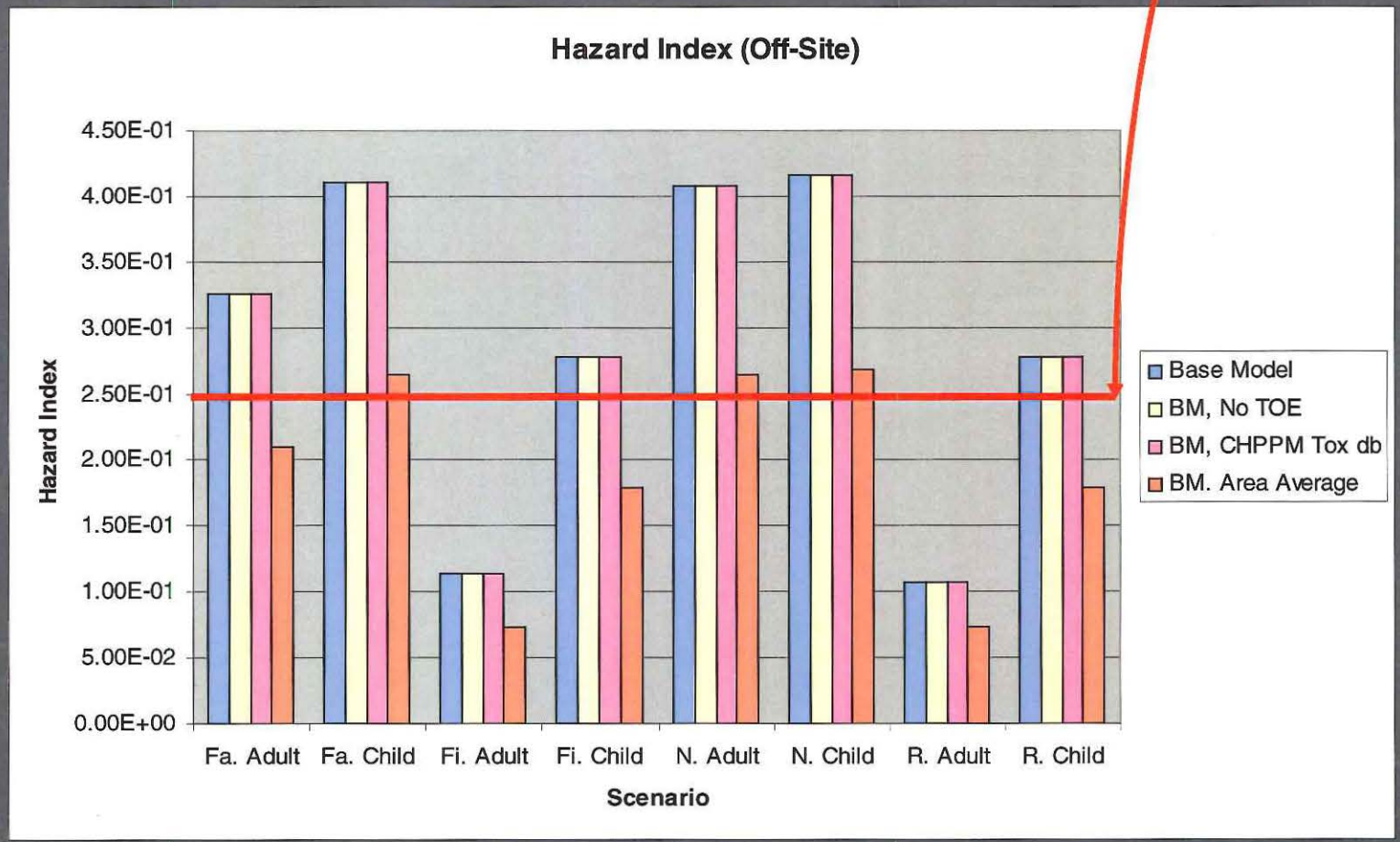
OFF-SITE (HI)	Fa. Adult	Fa. Child	Fi. Adult	Fi. Child	N. Adult	N. Child	R. Adult	R. Child
Base Model	3.25E-01	4.10E-01	1.14E-01	2.78E-01	4.08E-01	4.17E-01	1.07E-01	2.78E-01
BM, CHPPM Tox db	3.25E-01	4.10E-01	1.14E-01	2.78E-01	4.08E-01	4.16E-01	1.07E-01	2.78E-01
BM, No TOE	3.25E-01	4.10E-01	1.14E-01	2.78E-01	4.08E-01	4.16E-01	1.07E-01	2.78E-01
BM. Area Average	2.10E-01	2.65E-01	7.35E-02	1.79E-01	2.64E-01	2.69E-01	7.35E-02	1.79E-01

Red implies Summed HI above 0.25 and CR above 1E-5

Cancer Risk Summary (Off-Site)



Hazard Index Summary (Off-Site)



Top 10 COPCs (Off-Site, CR)

COPC	Fa. Adult	Fa. Child	Fi. Adult	Fi. Child	N. Adult	N. Child	R. Adult	R. Child	M. Adult	Worker
Composite TOE - Nonvolatile	1	1	1	1	1	1	1	1	1	1
3,4,5,3',4'-Pentachlorobiphenyl	2	x			2	x				
2,3,7,8-Tetrachlorodibenzofuran	3	x	x	x	3	x	x	x	x	x
Composite TOE - Volatile	x	2	2	2	x	2	2	2	2	2
Composite TOE - Semivolatile	x	3	3	3	x	3	3	3	3	3
Arsenic compounds	x	x	x	x	x	x	x	x	x	x
Sulfur mustard (or H/HD)	x	x	x	x	x	x	x	x	x	x
Bis(2-ethylhexyl)phthalate	x	x	x	x	x	x	x	x	x	x
PCB Mixture (non-dioxin like, 5+ chlorines)	x	x	x	x	x	x	x	x	x	x
2,3,7,8-Tetrachlorodibenzo-p-dioxin	x				x					
Cadmium compounds		x	x	x		x	x	x	x	x
Nickel compounds			x	x			x	x	x	x

In every case >99% of CR is contained in COPC 1

Top 10 COPCs (Off-Site, HI)

COPC	Fa. Adult	Fa. Child	Fi. Adult	Fi. Child	N. Adult	N. Child	R. Adult	R. Child	M. Adult	Worker
VX	1	1	1	1	1	1	1	1	1	1
GB	2	2	2	2	2	2	2	2	2	2
Sulfur mustard (or H/HD)	3	3	3	3	x	3	3	3	3	3
Composite TOE - Nonvolatile	x	x			x	x	x	x	x	x
Thallium compounds	x	x			x	x				x
Chlorine	x	x	x	x	x	x	x	x	x	x
Mercuric chloride	x	x	x	x	x	x	x	x	x	x
Manganese compounds	x	x	x	x		x	x	x	x	x
PCB Mixture (non-dioxin like, 5+ chlorines)	x		x		x	x				
Silver compounds	x	x			x					
Cadmium compounds		x	x	x			x	x	x	x
Arsenic compounds			x	x			x	x	x	x
Methyl mercury			x	x	3	x				
Nickel compounds				x			x	x	x	

In every case >96% of HQ is contained in VX.
Only VX had individual HQ above 0.25

Cancer Risk by Pathway (Base Model)

Cancer Risk				
Pathway	**Native Adult**	**Native Child**	**Farmer Adult**	**Farmer Child**
air_crisk_inhale	0.0%	0.1%	0.0%	0.1%
intake_crisk_ag	2.4%	1.9%	1.5%	1.7%
intake_crisk_bath	0.1%	0.2%	0.0%	0.1%
intake_crisk_beef	**56.8%**	**34.0%**	**72.2%**	**49.3%**
intake_crisk_chick	0.0%	0.0%	0.1%	0.0%
intake_crisk_dw	0.0%	0.0%	0.0%	0.0%
intake_crisk_eggs	0.0%	0.0%	0.0%	0.0%
intake_crisk_fish	0.0%	0.0%	0.0%	0.0%
intake_crisk_goat	0.0%	0.0%	1.6%	1.4%
intake_crisk_lodge	0.1%	0.0%	0.0%	0.0%
intake_crisk_milk	**39.0%**	**59.0%**	**23.6%**	**43.8%**
intake_crisk_pork	0.0%	0.0%	0.0%	0.0%
intake_crisk_soil	1.7%	4.9%	1.0%	3.5%
intake_crisk_swim	0.0%	0.0%	0.0%	0.0%
Total CR	2.96E-04	2.31E-05	2.64E-04	2.98E-05

Hazard Index by Pathway (Base Model)

Hazard Index				
Pathway	**Native Adult**	**Native Child**	**Farmer Adult**	**Farmer Child**
air_crisk_inhale	0.3%	2.5%	0.5%	1.7%
intake_crisk_ag	**95.1%**	**97.2%**	**90.8%**	**92.0%**
intake_crisk_bath	0.0%	0.0%	0.0%	0.0%
intake_crisk_beef	2.4%	0.0%	6.1%	3.0%
intake_crisk_chick	0.0%	0.0%	0.0%	0.0%
intake_crisk_dw	0.0%	0.0%	0.0%	0.0%
intake_crisk_eggs	0.0%	0.0%	0.0%	0.0%
intake_crisk_fish	0.2%	0.0%	0.0%	0.0%
intake_crisk_goat	0.0%	0.0%	0.1%	0.1%
intake_crisk_lodge	0.0%	0.0%	0.0%	0.0%
intake_crisk_milk	1.9%	0.0%	2.3%	3.0%
intake_crisk_pork	0.0%	0.0%	0.0%	0.0%
intake_crisk_soil	0.1%	0.3%	0.1%	0.2%
intake_crisk_swim	0.0%	0.0%	0.0%	0.0%
Total HI	4.09E-01	2.78E-01	3.25E-01	4.10E-01

Cancer Risk by Source (Base Model)

Cancer Risk				
Stack	**Native Adult (%Total)**	**Native Child (%Total)**	**Farmer Adult (%Total)**	**Farmer Child (%Total)**
BRA	0.0%	0.0%	0.0%	0.0%
Common	100.0%	100.0%	100.0%	100.0%
LAB	0.0%	0.0%	0.0%	0.0%
MDB	0.0%	0.0%	0.0%	0.0%
Total CR	2.96E-04	2.31E-05	2.64E-04	2.98E-05

Hazard Index				
Stack	**Native Adult (%Total)**	**Native Child (%Total)**	**Farmer Adult (%Total)**	**Farmer Child (%Total)**
BRA	59.4%	59.6%	59.4%	59.5%
Common	1.8%	1.8%	1.8%	1.8%
LAB	5.9%	5.9%	5.9%	5.9%
MDB	32.9%	32.7%	32.9%	32.7%
Total HI	4.09E-01	4.17E-01	3.25E-01	4.10E-01

Acute Hazard Index Summary

Location	Scenario	Base	LIC1 Upset	LIC2 Upset	DFS Upset	MPF Upset	MPFnc Upset	BRA Upset	LAB Upset	MDB Upset
Off-Site Maximum	resident_child	1.2E+01	1.6E+01	1.6E+01	**1.1E+02**	2.3E+01	2.3E+01	1.2E+01	1.6E+01	1.6E+01
Off-Site Maximum	resident_adult	1.1E+01	1.5E+01	1.5E+01	**1.1E+02**	2.2E+01	2.2E+01	1.2E+01	1.5E+01	1.5E+01
Off-Site Maximum	farmer_child	1.2E+01	1.6E+01	1.6E+01	**1.1E+02**	2.3E+01	2.3E+01	1.2E+01	1.6E+01	1.6E+01
Off-Site Maximum	farmer_adult	1.2E+01	1.6E+01	1.6E+01	**1.1E+02**	2.3E+01	2.3E+01	1.2E+01	1.6E+01	1.6E+01
Off-Site Maximum	fisher_child	1.2E+01	1.6E+01	1.6E+01	**1.1E+02**	2.3E+01	2.3E+01	1.2E+01	1.6E+01	1.6E+01
Off-Site Maximum	fisher_adult	1.2E+01	1.6E+01	1.6E+01	**1.1E+02**	2.3E+01	2.3E+01	1.2E+01	1.6E+01	1.6E+01
Off-Site Maximum	native_child	1.2E+01	1.6E+01	1.6E+01	**1.1E+02**	2.3E+01	2.3E+01	1.2E+01	1.6E+01	1.6E+01
Off-Site Maximum	native_adult	1.2E+01	1.6E+01	1.6E+01	**1.1E+02**	2.3E+01	2.3E+01	1.2E+01	1.6E+01	1.6E+01

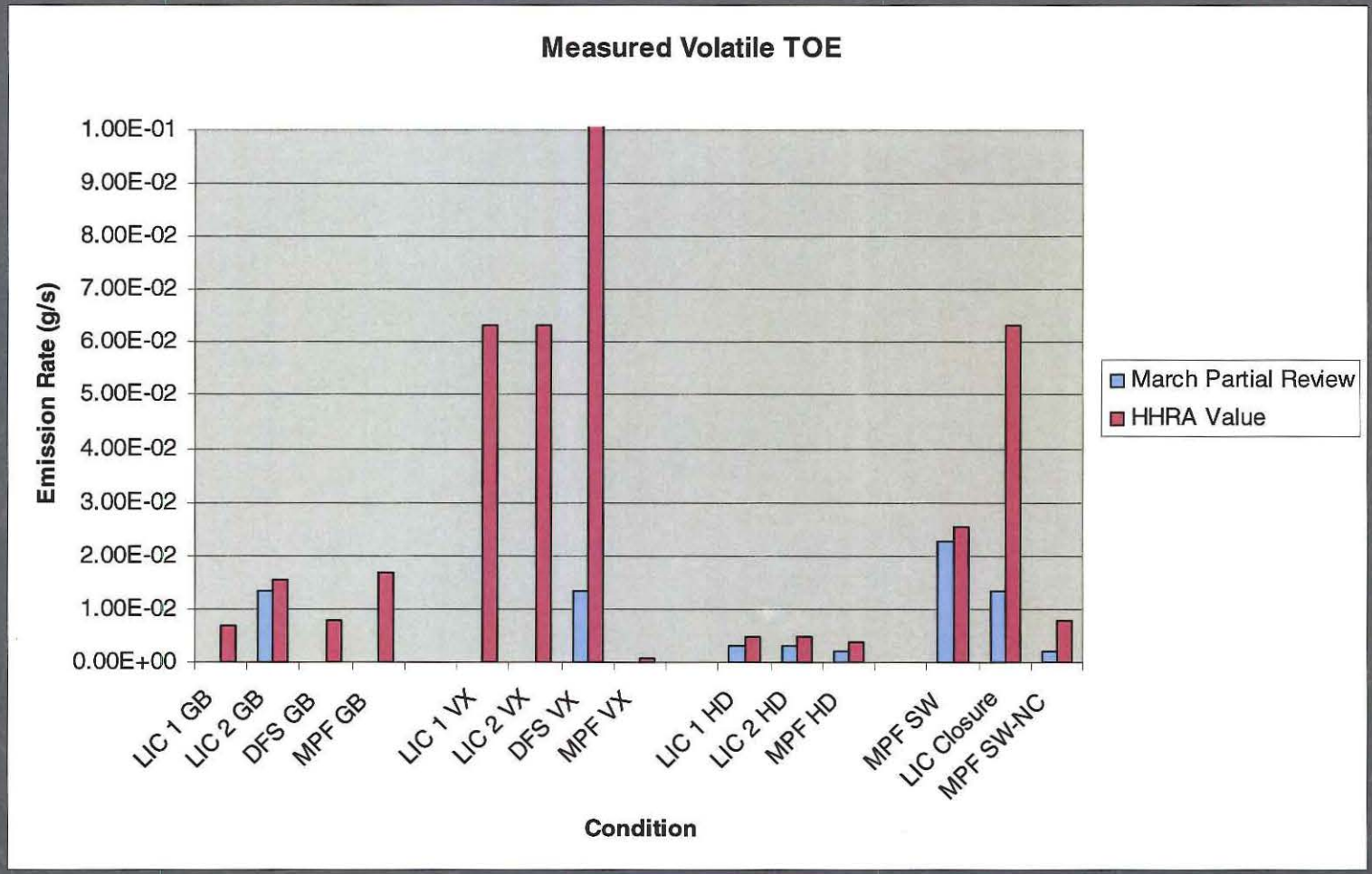
Acute Inhalation Hazard Index Driven by TOE

For DFS Upset:
4.9% Volatile TOE
3.2% Semi-Volatile TOE
91.9% Non-Volatile TOE

TOE Represents Measured Emissions

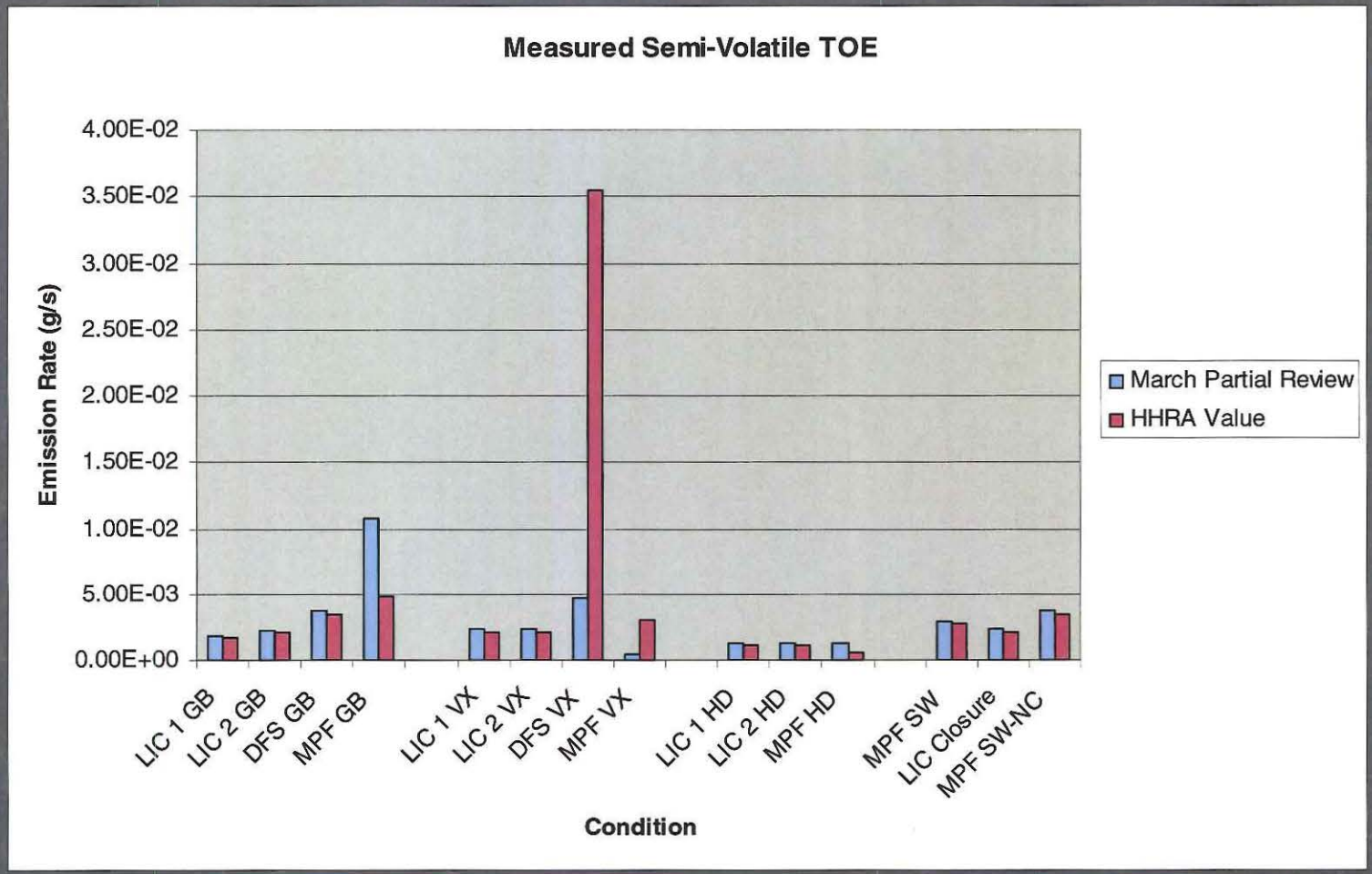
- CTUIR reviewed the following trial burn reports:
  - All UMCDF STB and GB ATB.
  - ANCDF VX ATB, LIC, DFS, MPF
  - TOCDF VX ATB, LIC, DFS
  - TOCDF HD ATB, LIC, MPF
  - NOTE: These reports are only a subset of documents used to develop Umatilla emission estimates.
- Purpose of CTUIR review was to verify TOE values were based on measured values and not detection limits.

Detected Volatile TOE Concentrations



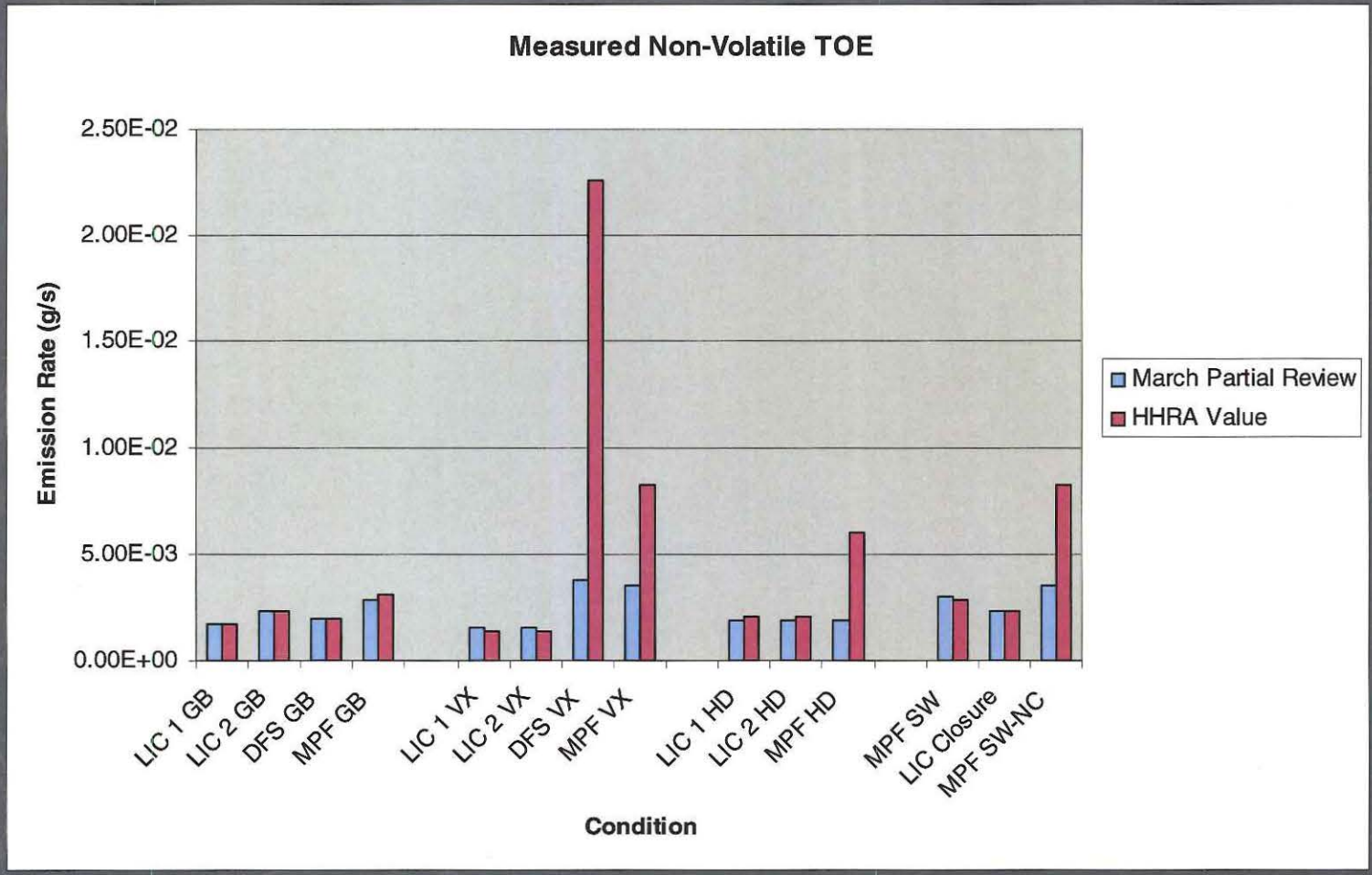
CONCLUSION: Volatile TOE detected in trial burns

Detected Semi-Volatile TOE Concentrations



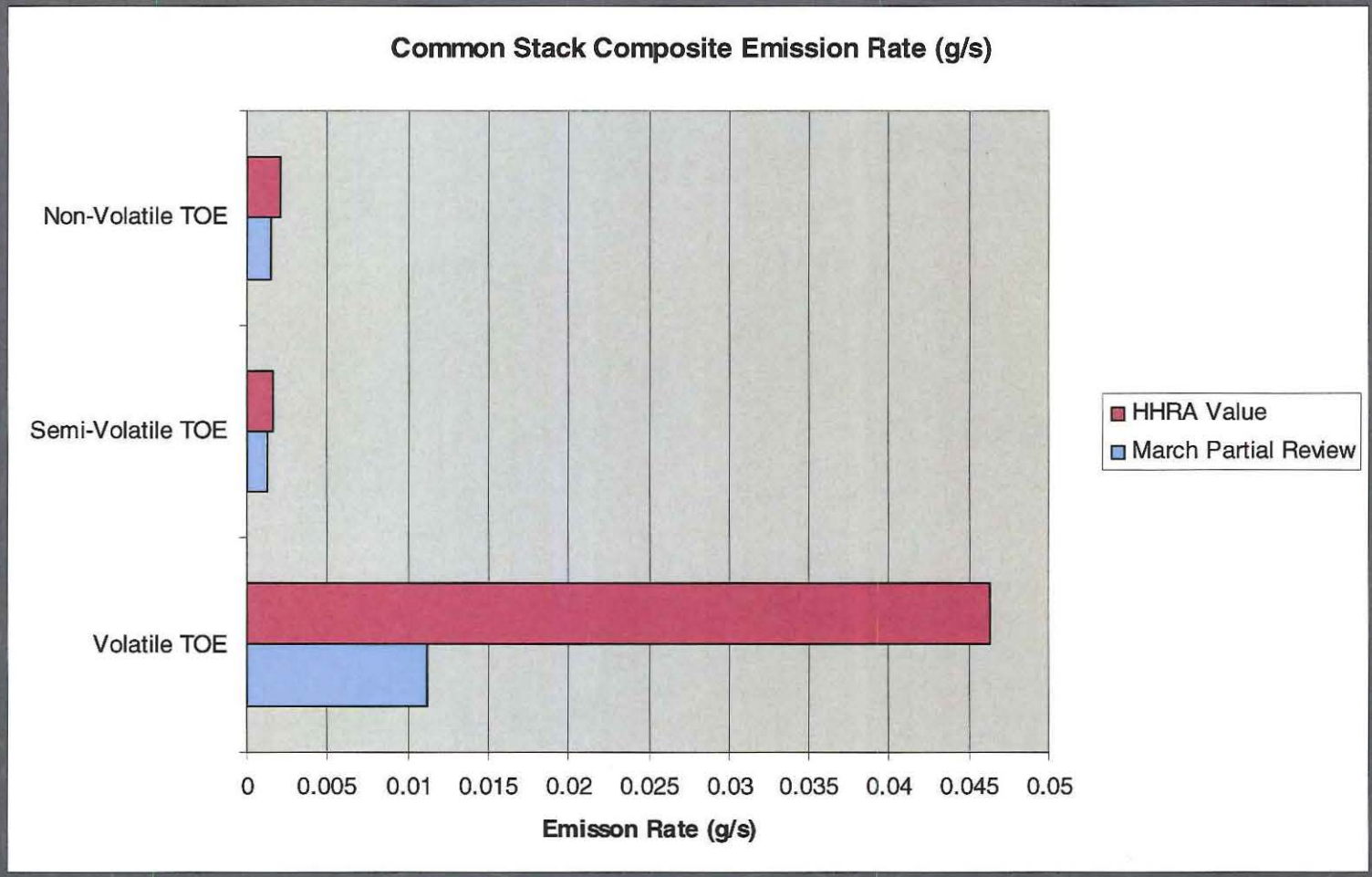
CONCLUSION: Semi-volatile TOE detected in trial burns

Detected Non-Volatile TOE Concentrations



CONCLUSION: Non-Volatile TOE detected in trial burns

CTUIR Values Give Same COM Stack Emission Rates



CTUIR Values Give Similar Risk Estimates

Location	Scenario	Cancer Risks	
		HHRA 2008	March Partial Review
Off-Site Maximum - 1	farmer_adult	1.9E-04	2.6E-04
Off-Site Maximum - 1	farmer_child	2.2E-05	3.0E-05
Off-Site Maximum - 1	fisher_adult	1.5E-06	2.1E-06
Off-Site Maximum - 1	fisher_child	1.0E-06	1.4E-06
Off-Site Maximum - 1	native_adult	2.2E-04	3.0E-04
Off-Site Maximum - 1	native_child	1.7E-05	2.3E-05
Off-Site Maximum - 1	resident_adult	1.4E-06	2.0E-06
Off-Site Maximum - 1	resident_child	1.0E-06	1.4E-06

Red implies Summed CR above 1E-5

Conclusion

- UMCDF Human Health Risk Assessment following the 2004 RAWP indicates:
  - Tribal cancer risks are 30x the DEQ established action level
  - Tribal hazard risks are almost double the DEQ established action level
  - Tribal acute inhalation risk are 100x the established action level
  - Ecological risks are >1000 times the EPA action level and >4000 times the 2004 RAWP action level (E&E Result).
- Cancer risk and acute inhalation risk is driven by measured, but unidentified, organic emissions.
- Chronic non-cancer hazard driven by VX emissions.

State of Oregon
Department of Environmental Quality Memorandum

Date: April 7, 2008

To: Environmental Quality Commission

From: Dick Pedersen, Acting Director

Subject: Agenda Item F, Action Item: Pollution Control Tax Credit Considerations
April 24-25, 2008 EQC Meeting

Why This is Important

The Environmental Quality Commission (EQC) approves or denies the certification of a pollution control facility.

Background

The EQC certification entitles an Oregon taxpayer to subtract up to 35 percent of the facility's cost from its Oregon tax liability. The taxpayer may take the tax credit in equal parts over the remaining useful life of the facility, but for no more than 10 years.

The Pollution Control Facilities Tax Credit regulations direct the EQC to "certify a pollution control, solid waste, hazardous waste or used oil facility or portion thereof, if the Commission finds that the facility qualifies as a pollution control facility." ORS 468.170 (4)(a).

Department Recommendation

The Department of Environmental Quality (DEQ) recommends that the EQC approve the Pollution Control Facilities Tax Credit applications summarized in Attachment A and detailed in Attachment B.

EQC Action Alternatives

The EQC may postpone an application to a future meeting if the EQC:

- Requires additional information from DEQ or the applicant; or
- Makes a determination different from DEQ that may have an adverse effect on the applicant.

Attachments

A. Summary of Recommendations
B. Background and References for Final Certification
C. Tax Expenditure Liability Report
D. Certified Wood Chipper Report

Available Upon Request

ORS 468.150 to 468.190 and OAR 340-016-0005 to 340-016-0080

Approved:

Section: Maggie Vandehey

Division: Gregory K. Aldrich

Report Prepared By: Maggie Vandehey
Phone: (503) 229-6878

Attachment A

Summary of Recommendations

From Attachment B: Recommended for Approval

Tab	App #	Applicant	Claimed	Certified	Difference*	% Allocable	Max Percent	Tax Credit	EQC Action
Water	7704	Mark A. Rogers	1,385	1,385	0	100%	35%	485	
Water	7705	Walter Manning, DMD	1,865	1,865	0	100%	35%	653	
Water	7706	Dr. Jeff Phillips	690	690	0	100%	35%	242	
Alt FB	7708	Scheffel Farms, Inc	156,742	156,742	0	100%	35%	54,860	
Alt FB	7709	5M Farms	59,926	59,926	0	100%	35%	20,974	
Water	7710	Mark Allard Miller	1,576	1,576	0	100%	35%	552	
Water	7711	Anne H Dennehy	915	915	0	100%	35%	320	
HW	7712	Grimm's Fuel Company, Inc	17,171	17,171	0	100%	35%	6,010	
Mat Rec	7713	Deschutes Recycling, LLC	78,100	78,100	0	100%	35%	27,335	
Water	7714	Northwest Paper Box Manufacturers	140,674	140,674	0	100%	35%	49,236	
Alt FB	7715	Spurlin Farms, Inc.	47,960	47,960	0	100%	35%	16,786	
Water	7716	Eric L Burbano	860	860	0	100%	35%	301	
Water	7717	Gregory L Hartman, DMD, PC	715	715	0	100%	35%	250	
Water	7718	Martin Burbano, DMD	860	860	0	100%	35%	301	
Water	7719	Robert A Clark DMD	821	821	0	100%	35%	287	
Alt FB	7720	Spurlin Farms, Inc.	186,950	186,950	0	100%	35%	65,433	
Mat Rec	7721	Wickiup Rose, Inc.	13,000	13,000	0	100%	35%	4,550	
Alt FB	7722	Mary Lou Neher	133,293	133,293	0	100%	35%	46,653	
Water	7723	Robert H Brewer	1,105	1,105	0	100%	35%	387	
Water	7724	Steven M Rogers, DMD	1,712	1,712	0	100%	35%	599	
Water	7725	Randall R Poe, DDS, PC	845	845	0	100%	35%	296	
Water	7726	Albert J Maziarz, DDS	727	727	0	100%	35%	254	
Water	7727	JoEllen Winston, DMD, PC	1,060	890	(170)	100%	35%	312	
Mat Rec	7728	Deschutes Transfer Company, Inc	43,285	43,285	0	100%	35%	15,150	
Mat Rec	7732	Columbia Sportswear USA Corporation	694,034	464,034	(230,000)	100%	35%	162,412	
Water	7733	Gegory E Heckert	1,022	1,022	0	100%	35%	358	
Water	7735	Thomas E Bachhuber, Jr	838	838	0	100%	35%	293	
Water	7741	Ronald JD Trotman, DMD	1,024	1,024	0	100%	35%	358	
Water	7743	Kenneth L Miller	1,427	1,427	0	100%	35%	499	
Water	7747	Sue Walker, DMD	838	838	0	100%	35%	293	
Water	7751	Kelly R Mingus, DMD	910	910	0	100%	35%	319	

Attachment A

Summary of Recommendations

Tab	App #	Applicant	Claimed	Certified	Difference*	% Allocable	Max Percent	Tax Credit	EQC Action
Water	7754	Larry M Ternus DMD	1,000	1,000	0	100%	35%	350	
Water	7756	Davir M Ross	1,709	1,709	0	100%	35%	598	
HW	7758	Kramer's Nursery Inc	1,100	1,100	0	100%	35%	385	
Water	7760	Steve Mock DMD	856	856	0	100%	35%	300	
Water	7761	Timothy BG Welch, MD, DDS	866	866	0	100%	35%	303	
Mat Rec	7762	Global Leasing, Inc	210,030	210,030	0	100%	35%	73,511	
Mat Rec	7763	Global Leasing, Inc	7,137	7,137	0	100%	35%	2,498	
Mat Rec	7764	S & C Properties, LLC	99,434	95,876	(3,558)	100%	35%	33,557	
Water	7766	Roy Alan George	1,688	1,688	0	100%	35%	591	
Water	7768	Benjamin Todd Grieb DMD PC	1,034	1,034	0	100%	35%	362	
Water	7769	Samir Kumar	1,020	1,020	0	100%	35%	357	
Mat Rec	7771	Umpqua Bank Leasing	263,144	263,144	0	100%	35%	92,100	
Water	7772	Dave Bizeau	986	986	0	100%	35%	345	
Water	7773	Gerald E Anderson DMD	947	947	0	100%	35%	331	
Water	7780	David J Spangler DDS PC	1,225	1,225	0	100%	35%	429	
HW	7781	Canby Excavating Inc	1,100	1,100	0	100%	35%	385	
NPS	7782	Jeffrey R Newtson	14,223	14,223	0	100%	35%	4,978	
Water	7783	R Claire Campbell	743	743	0	100%	35%	260	
Mat Rec	7784	Kiser Enterprises, Inc.	81,908	81,908	0	100%	35%	28,668	
Mat Rec	7785	Kiser Enterprises, Inc.	56,726	56,726	0	100%	35%	19,854	
51 Applications		Sum	$ 2,339,206	$ 2,105,478				$ 736,917	
		Average	$ 45,867	$ 41,284				$ 14,449	
		Minimum	$ 690	$ 690				$ 242	
		Maximum	$ 694,034	$ 464,034				$ 162,412	

* The difference is the facility cost on the application minus the facility cost DEQ recommends for certification. DEQ discussed the differences with the applicant and each applicant indicated agreement with the subtractions.

Attachment B
Background and References for Final Certifications

Recommendation

The Department of Environmental Quality (DEQ, Department) recommends the Environmental Quality Commission (EQC, Commission) approve $736,917 in tax credits to 51 pollution control and material recovery facilities summarized in Attachment A and detailed in this attachment.

To make its recommendation, the Department relied on the application records, the Pollution Control Facilities Tax Credit regulations, pertinent legal advice, and previous EQC decisions and directions.

Organization of Application Reviews

The Department organized the application reviews in application ascending order behind the tabs for the following categories. If the Department moves a review out of sequence, the Department indicates the reason and the location on the first page behind the tab.

Tax Credit Type	Tab
1. Alternatives to Open Field Burning	*Alt FB*
2. Hazardous Waste Pollution Controls	*HW*
3. Material Recovery	*Mat Rec*
4. Nonpoint Source Pollution Controls	*NPS*
5. Water Pollution Controls	*Water*

Each tab includes three sections:

1. Recommendation and Eligibility Criteria
2. Reviews
3. References

Each tab includes the eligibility criteria and the decisions required for certifying a pollution control or material recovery facility and for determining the amount of the tax credit. Each tab and the reviews behind the tab provide the Department's analysis regarding the:

- Facility's qualifications for certification as a pollution control facility,
- Eligible facility cost,
- Percentage of the tax credit attributed to pollution control, and
- Maximum allowable tax credit.

The Department will use the information in this attachment to:

- Notify the applicants of the EQC's certification,
- Develop the Pollution Control Facility Tax Credit Certificate,
- Develop the taxpayer's Department of Revenue form for claiming the credit on the Oregon Tax Return, and
- Develop reports for the Commission, agency management, the Department of Revenue, the Governor's Office, Legislators and other interested parties.

Pollution Control Facility Certification Authority

ORS 468.170(4)(a) provides the Commission its authority to certify pollution control facilities.

Regulation	Department Interpretation
468.170[1] (4)(a) The commission shall certify a pollution control, solid waste, hazardous waste or used oil facility or portion thereof, for which an application has been made under ORS 468.165, if the commission finds that the facility:	The applicant filed a valid application.
(A) Was erected, constructed or installed in accordance with the requirements of ORS 468.165 (1);	The applicant constructed the claimed facility after effective date of authorizing legislation.
(B) Is designed for, and is being operated or will operate in accordance with the requirements of ORS 468.155; and	The claimed facility meets the definition of a pollution control facility.
(C) Is necessary to satisfy the intents and purposes 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, 466 and 467 and ORS chapters 468, 468A and 468B and rules thereunder.	The claimed facility is necessary to satisfy DEQ administered regulations.

[1] ORS 468.170 Action on application; rejection; appeal; issuance of certificate; certification.

ORS 468.170(1) provides the Commission its authority to certify the facility cost and the portion of the cost allocable to pollution control. ORS 468.170(10) provides authority to certify the applicable percentage (Maximum Allowable Percentage) of the certified cost of the facility eligible for tax credit.

Regulation	Department Interpretation
468.170 (1) The Environmental Quality Commission shall act on an application for certification before the 120th day after the filing of the application under ORS 468.165. The action of the commission shall include certification of the actual cost of the facility and the 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.	The certified facility cost represents the actual cost. The claimed items control pollution, solid or hazardous waste, or recycle.
The actual cost or portion of the actual cost certified may not exceed the taxpayer's own cash investment in the facility or portion of the facility. Each certificate shall bear a separate serial number for each such facility.	The cost represents the applicant's investment.
468.170 (10) If the construction or installation of a facility is commenced after December 31, 2005, the facility may be certified only if the facility or applicant is described in ORS 468.173 (3). A facility described in ORS 468.173 (2) for which construction or installation is commenced after December 31, 2005, may not be certified under this section.	The applicant, the facility or the location of the facility qualifies for a maximum percentage above zero (0) percent.

Alternatives to Open Field Burning

Recommendations and Eligibility Criteria

DEQ recommends the Commission approve **$204,705** in tax credits to **five** grass-seed growers who invested in equipment and drainage tile (facility) as an alternative to burning as a method to sanitize their grass seed acreage. Each facility is eligible for a tax credit because it meets the criteria in:

☑ ORS 468.155 (1)(a)(A) and OAR 340-016-0060 (2)(a) – The principal purpose of each facility is to reduce the maximum acreage to be open burned in compliance with OAR 340-266-0060 - Acreage Limitations, Allocations.

☑ ORS 468.150 and OAR 340-016-0060 (4)(b) – Each grower invested in an eligible method for reducing the number of grass seed acres requiring open field burning. Three growers purchased equipment and installed drainage tile.

☑ ORS.468.170 (4)(a) – Each facility satisfies the intents and purposes of ORS chapter 468A – Air Pollution.

☑ ORS 468.155(3), ORS 468.170(1) and OAR 340-016-0070 – The facility cost recommended for certification represents the actual pollution control cost of the installation and does not exceed the taxpayer's (applicant) own cash investment in the facility.

☑ ORS 468.190 (3) for facilities that cost less than $50,001, ORS 468.170(1) and ORS 468.190(1) for facilities that cost over $50,000 – Each applicant accurately determined and DEQ verified the percentage of the facility cost allocable to air pollution control.

☑ ORS 468.173(3)(f) – The maximum tax credit is 35 percent because the applicants submitted their applications between January 1, 2002, and December 31, 2008, inclusively, and the certified facility cost does not exceed $200,000 or the facility is located in an economically distressed area.

Reviews

7708
Scheffel Farms, Inc
C Corp 91-1792279

Facility Cost		**$156,742**
Percentage Allocable	X	**100%**
Maximum Percentage	X	**35%**
Tax Credit		$54,860

Description

One – Shulte model 5026 rotary cutter, serial number C50201036702

Drainage tile installation: 155,000' of 4" diameter pipe, 150' of 6" diameter pipe, 590' of 8" diameter pipe, 1,050' of 10" diameter pipe, 1,040' of 12" diameter pipe, two risers/catch basins

Scheffel Farms, Inc is a grass seed grower that owns 785 acres and leases an additional 493 acres. Eight hundred and ten acres are in perennial grass-seed cultivation and 340 acres are in annual grass-seed cultivation. The farm burned an average of 320 acres in the last the three years.

The applicant claims drainage tile installed on 117 farm-owned acres to allow planting an alternative rotational crop. Linn County records identify the acreage as Township 15 S, Range 3 W, Section 6, Tax Lot 100.

The applicant also claims one Schulte 5026 rotary cutter to re-clip the tall fescue fields following harvest, bailing, and flailing to stimulate crown growth. The shorter, stimulated crown growth is more resistant to rust disease previously controlled through burning.

The farm holds four alternatives to field burning certificates including one for tile installed on 325 acres. Ed Scheffel holds one alternative to field burning certificate for a straw storage building. The claimed facility is not a replacement to any of these facilities.

Applicant Address
30060 Nixon Drive
Halsey, OR 97348

Facility Address
Peoria Rd
Halsey, OR 97348

7709
5M Farms
C Corp 93-1209448

Facility Cost		**$59,926**
Percentage Allocable	X	**100%**
Maximum Percentage	X	**35%**
Tax Credit		$20,974

Description

One – Used 1992 John Deere model 8760 tractor, serial number
RW 8760H00237
One – Loftness 15' flail, stock number 804 066
One – Used Wil-Rich model 2900 plow, serial number 3915

5M Farms grows grass seed. The farm owns 120 and leases an additional 538 acres. Two hundred and sixty (260) acres are in perennial grass-seed cultivation and 340 acres are in annual grass-seed cultivation. The farm burned an average of 146 acres in the last the three years.

The farm claims a tractor and equipment used as an alternative to open field burning on acreage identified as Township 145, Range W, Section 23, tax lots 600 and 601.

The applicant accurately calculated the percentage of the cost of the tractors and implements allocable to pollution control. The State of Oregon has not issued a pollution control facilities tax credit certificate to the applicant, to this location, or for the used equipment; therfore, the claimed facility is not a replacement to previously certified equipment.

Applicant Address
25405 Malpass Road
Harrisburg, OR 97446

Facility Address
Same as the applicant's address

7715
Spurlin Farms, Inc.
S Corp 20-5141827

Facility Cost		**$47,960**
Percentage Allocable	X	**100%**
Maximum Percentage	X	**35%**
Tax Credit		$16,786

Description

Drainage tile installation: 51,115' of 4" diameter pipe, 440' of 8" diameter pipe, 140' of 10" diameter pipe, 250' of 12" diameter pipe, a 30" bubbler with a 12" outlet, and 6" vent

Spurlin Farms is a grass seed grower that owns 450 acres and leases an additional 2,115 acres. Nine hundred and sixty seven acres are in perennial grass-seed cultivation and 1,460 acres are in annual grass-seed cultivation. The farm burned an average of 695 acres in the last the three years.

The applicant claims drainage tile installed on a 48-acre field that the farm owns. The installation allows for the planting an alternative rotational crop. County records identify the acreage as Township 13 S, Range 3 W, Section 23, Tax Lot 400.

The EQC has not issued any tax credit certificates to the applicant or to the applicant address. The claimed facility is not a replacement to a previously certified facility.

Applicant Address
28637 Seven Miles Lane
Brownsville, OR 97327

Facility Address
Same as the applicant's address

7720
Spurlin Farms, Inc.
S Corp 20-5141827

Facility Cost		**$186,950**
Percentage Allocable	X	**100%**
Maximum Percentage	X	**35%**
Tax Credit		$65,433

Description

One – Challenger model MT 665 B tractor, serial number PO59071
One – Hurds custom-built 26' x 15" harrow
One – Hurds custom-built 28' roller
One – Rears model Pul-Flail 15' flail

Spurlin Farms is a grass seed grower that owns 450 acres and leases an additional 2,115 acres. Nine hundred and sixty seven acres are in perennial grass-seed cultivation and 1,460 acres are in annual grass-seed cultivation. The farm burned an average of 695 acres in the last the three years.

The applicant claims equipment used to reduce and eliminate open field burning on annual fields provide an alternative to open field burning. The equipment operates on acreage that county records identify as Township 135, Range 3 W and the following sections: Section 13, Account # 287637; Section 23, Account # 0288387; and Section 24, Account # 0288619.

The EQC has not issued any tax credit certificates to the applicant or to the applicant address. The claimed facility is not a replacement to a previously certified facility.

Applicant Address
28637 Seven Miles Lane
Brownsville, OR 97327

Facility Address
Same as the applicant's address

7722	Facility Cost		**$133,293**
Mary Lou Neher	Percentage Allocable	X	**100%**
Individual	Maximum Percentage	X	**35%**
	Tax Credit		$46,653

Description

Drainage tile installation: 137,890' of 4" diameter pipe, 1,060' of 6" diameter pipe, 800' of 8" diameter pipe, 1,000' of 10" diameter pipe, 1,160' of 12" diameter pipe, two 30" bubblers with 12" outlets, one 18" bubbler with a 6" outlet and two vents

Mary Lou Neher is a grass seed grower that owns 1,700 acres. Five hundred and fifteen acres are in perennial grass-seed cultivation and 1,185 acres are in annual grass-seed cultivation. The farm burned an average of 116 acres in the last the three years.

The applicant claims drainage tile installed on a 64-acre field and a 78-acre field that the farm owns. The drainage tile allows the planting of alternative rotational crops. County records identify the acreage as Township 15 S, Range 3 W, Section 14, Tax Lot 0060 and Township 15 S, Range 3 W, Section 23, Tax Lot # 0063.

The EQC has issued five certificates to the same location, two to Larry Neher, Inc. certifying a straw storage building and equipment, three to Larry and Mary Lou Neher certifying a straw storage building and two drainage tile installations. The claimed facility is not a replacement to any of these facilities.

Applicant Address
28485 Brownsville Road
Brownsville, OR 97327

Facility Address
Same as the applicant's address

References

ORS 468.150[2]

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.

OAR 340-016-0060[3]

(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.

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[2] Field sanitation, and straw utilization and disposal methods as "pollution control facilities"

[3] Eligibility

Hazardous Waste Controls

Recommendations and Eligibility Criteria

DEQ recommends the Commission approve a **$6,780** tax credit to **3** applicants claiming parts washers that changed from using solvents to water-based cleaning products. Each facility is eligible for a tax credit because it meets the criteria in:

☑ ORS 468.155 (1)(a)(B) and OAR 340-016-0060 (2)(a) – The sole purpose of changing from a solvent– to water–based parts washer is to reduce a substantial quantity of hazardous waste.

☑ ORS 468.155 (1)(b)(E) – The aqueous parts washer eliminates the use of hazardous waste and its hazardous waste stream. The washers use aqueous surfactant based cleaner rather than solvent based cleaner containing Toluene and Benzene, which are known to cause birth defects, other reproductive harm or cause cancer.

☑ ORS.468.170 (4)(a) – The facility satisfies the intents and purposes of ORS chapter 466 – Hazardous Waste and Hazardous Materials.

☑ ORS 468.155(3), ORS 468.170(1) and OAR 340-016-0070 – The facility cost recommended for certification represents the actual pollution control cost of the installation and does not exceed the taxpayer's (applicant) own cash investment in the facility. The EQC did not certify a parts washer to the applicatns or the used parts washer to a previous owner; therefore, the parts washers are not a replacement facility.

☑ ORS 468.190 (3) for facilities that cost less than $50,001 – The applicant accurately determined and DEQ verified the percentage of the facility cost allocable to hazardous waste pollution control.

☑ ORS 468.173(3)(f) – The maximum tax credit is 35 percent because the applicant submitted the application between January 1, 2002, and December 31, 2008, inclusively, and the certified facility cost does not exceed $200,000.

Reviews

7712
Grimm's Fuel Company, Inc
S Corp 93-0502753

Facility Cost		**$17,171**
Percentage Allocable	X	**100%**
Maximum Percentage	X	**35%**
Tax Credit		$6,010

Description: One – Stainless steel model WA-Jumbo parts washer manufactured by Adventure Manufacturing, Inc., serial number 090207

Applicant Address
18850 SW Cipole Road
Tualatin, OR 97062

Facility Address
Same as the applicant's address

7758
Kramer's Nursery Inc
C Corp 93-0752928

Facility Cost		**$1,100**
Percentage Allocable	X	**100%**
Maximum Percentage	X	**35%**
Tax Credit		$385

Description: One – ChemFree SmartWasher model 928 aqueous parts washer, serial number SW 281-110-2002537

Applicant Address
PO Box 930
Mt. Angel, OR 97362

Facility Address
Same as the applicant's address

7781
Canby Excavating Inc
C Corp 93-1061100

Facility Cost		**$1,100**
Percentage Allocable	X	**100%**
Maximum Percentage	X	**35%**
Tax Credit		$385

Description: One – Used Smart Washer SW-928, serial number SW201-120-2101081

Applicant Address
PO Box 848
Canby, OR 97013

Facility Address
Same as the applicant's address

References

ORS 468.155[4]

(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 … to prevent, control or reduce … hazardous waste …; or

(B) The sole purpose of such use, erection, construction or installation is to prevent, control or reduce a substantial quantity of … hazardous waste….

(b) Such prevention, control or reduction required by this subsection shall be accomplished by:

(E) The treatment, substantial reduction or elimination of or redesign to treat, substantially reduce or eliminate hazardous waste as defined in ORS 466.005.

ORS 466.005 provides or references the following definition.

Hazardous Waste Pollution is the presence of 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 cause or contribute to an increase in mortality or an increase in serious irreversible illness; or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported or disposed of.

[4] Definitions for ORS 468.155 to 468.190 and 468.962

Hazardous waste does not include radioactive material or the radioactively contaminated containers and receptacles used in the transportation, storage, use or application of radioactive waste, unless the material, container or receptacle is classified as hazardous waste under paragraph (a), (b) or (c) of this subsection on some basis other than the radioactivity of the material, container or receptacle. Hazardous waste does include 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.

(c) Discarded, useless or unwanted containers and receptacles used in the transportation, storage, use or application of the substances described in paragraphs (a) and (b) of this subsection.

OAR 340-016-0060 [5]

(4) Eligible Activities. The facility shall prevent, reduce, control, or eliminate: … (c) Hazardous Waste. The facility shall treat, substantially reduce or eliminate hazardous waste as defined in ORS 466.005… .

[5] Eligibility

Material Recovery

Recommendations and Eligibility Criteria

DEQ recommends the Commission approve **$459,634** in tax credits to **10** applicants who invested in recycling containers, trucks and balers (facility) used in a material recovery process. Each facility is eligible for a tax credit because it meets the criteria in:

☑ ORS 468.155 (1)(a) and OAR 340-016-0060 (2)(a) – The sole purpose of the facility is to prevent, control, or reduce a substantial quantity of solid waste.

☑ ORS 468.155 (1)(b)(D), OAR 340-016-0010(7) and OAR 340-016-0060(4)(e) – The facility prevents, controls, or reduces waste material by using a material recovery process. The process obtains useful material from material that would otherwise be solid waste.

☑ ORS.468.170 (4)(a) – Each facility satisfies the intents and purposes of ORS chapter 459A – Refuse and Recycling.

☑ ORS 468.155(3), ORS 468.170(1) and OAR 340-016-0070 – The facility cost recommended for certification represents the actual material recovery cost and does not exceed the taxpayer's (applicant) own cash investment in the facility.

☑ ORS 468.190 (3) for facilities that cost less than $50,001, ORS 468.170(1) and ORS 468.190(1) for facilities that cost over $50,000 – Each applicant accurately determined and DEQ verified the percentage of the facility cost allocable to material recovery.

☑ ORS 468.173(3)(d) – The maximum tax credit is 35 percent because the applicants submitted their applications between January 1, 2002, and December 31, 2008, inclusively, and the applicant uses the certified facility in a material recovery process or for recycling.

Reviews

7713
Deschutes Recycling, LLC
S Corp 93-1307244

Facility Cost		**$78,100**
Percentage Allocable	X	**100%**
Maximum Percentage	X	**35%**
Tax Credit		$27,335

Description

Two – Marathon model RJ275 XHD compactors, serial numbers 2105956 and 2105970
Two – Marathon model RJ40 OC containers, serial numbers 2105964 and 2105970

Deschutes Recycling, LLC is a recycling center operating at the Knott Landfill in Bend, Oregon.

The applicant claims two compactors, one for compressing cardboard and the other for compressing commingled recyclable materials. The applicant also claims containers used with each compactor to collect the material. When the containers are full, the applicant hauls it to Mid Oregon Recycling where the contents are sorted, baled, and shipped to mills for use as feed stock in the manufacture of new products.

The sole purpose of the compactor and containers is to prevent approximately 300 tons of cardboard and 600 tons of commingled materials from landfill disposal each year.

The EQC issued three certificates to the applicant, three certificates to Deschutes Transfer Company, Inc and two certificates to Bend Garbage Company, Inc at the same address. The claimed facility does not replace any previously certified facility. The applicant and Department calculated the percentage of the facility cost allocable to pollution control according to the standard method in OAR 340-016-0075(3).

Applicant Address
PO Box 504
Bend, OR 97709

Facility Address
64050 SE 27th Street
Bend, OR 97703

7721
Wickiup Rose, Inc.

Facility Cost		**$13,000**
Percentage Allocable	X	**100%**
Maximum Percentage	X	**35%**
Tax Credit		$4,550

Description

One – OneStop Junior reverse vending machine, serial number 2172

Wickiup Rose, Inc., is a grocery store and retail gas station that claims a reverse vending machine that sorts and crushes cans and bottles.

Various vendors collect the crushed containers and delivery them to mills that incorporate the material into a new product. The sole purpose of the claimed facility is to remove approximately 1.25 tons of aliminum, glass, and plastic from the solid waste stream each year through a material recovery process.

The EQC has not issued any certificates to the applicant; therfore, the claimed recycling body is not replacement to a previously certified facility.

Applicant Address
17000 Burgess Road
LaPine, OR 97739

Facility Address
Same as the applicant's address

7728	Facility Cost		**$43,285**
Deschutes Transfer Company, Inc	Percentage Allocable	X	**100%**
S Corp 93-1017303	Maximum Percentage	X	**35%**
	Tax Credit		$15,150

Description

Seven – 30-cubic-yard model 2259C drop boxes manufactured by Wastequip-Oregon, serial numbers 15835, 15837, 15838, 15839 , 15840, 15841 and 158369

Deschutes Transfer Company transports garbage and recyclable materials collected at transfer stations and recycling stations within Deschutes County to disposal sites and recycling facilities.

The applicant claims drop boxes used to collect source-separated recyclable materials from the general public at three county-owned transfer stations, Black Butte Ranch Recycling Center and the City of Sisters Recycling Depot. When the containers are full, the applicant hauls scrap metal to Schnitzer Steel Industires, Inc., glass to Central Oregon or Mid Oregon Recycling and the remaining materials to Mid Oregon Recycling. Recoverable material is used as feed stock in the manufacture of new products.

The sole purpose of the seven containers is to remove approximately 350 tons from the disposal system each year gleaning it as recyclable materials.

The EQC has issued five certifictes to the applicant at this address for drop boxes and transfer trailers used for material recovery and recycling. The claimed facility is not a replacement of a previously certified facility.

Applicant Address
PO Box 504
Bend, OR 97709

Facility Address
20835 NE Montana Way
Bend, OR 97703

7732
Columbia Sportswear USA Corporation
C Corp 20-0331257

Facility Cost		**$464,034**
Percentage Allocable	X	**100%**
Maximum Percentage	X	**35%**
Tax Credit		$162,412

Description: One – FKI Logistex conveyor
One – Manual Lift Assist, model LLPW-500-4SFL
One – Nexgen Auto-Tie Baler, model WS-6042-850, serial number 2027591
One – custom built shared conveyor

Columbia Sportswear Company wholesales outdoor clothing and accessories manufactured elsewhere and shipped to the Oregon Rivergate Distribution Center in boxes. The company removes the goods from the boxes prior to filling retail orders.

The applicant claims a material recovery system that collects and bales old corrugated cardboard (OCC). The system consists of:

- One hundred percent of the 550-lineal foot FKI Logistex OCC conveyor that lifts (manual lift assist) approximately 30 boxes per minute 19 vertical feet to the baler (Nexgen Auto-Tie).

- Twelve percent of the 2,550-lineal foot shared conveyor that moves throughout the three-tiered active pick area to the baler system. In the pick area, sorters remove product from boxes, and stage the OCC for the material recovery cycle on the shared conveyor. The shared conveyor operates in three cycles: 1) distribution of totes containing product from the active pick area to the sorter, 2) redistributing emptied reusable totes, and 3) OCC collection from the active pick area to the baler system. In the OCC material recovery cycle, the conveyor lifts the material to the FKI Logistex conveyor for the vertical lift to the baler.

  The applicant amended the application to calculate the percentage of the shared conveyor use dedicated to material recovery by comparing conveyor surface area used in each cycle. The amendment resulted in a $230,000 subtractions from the claimed facility cost.

The sole purpose of the material recovery system is to recover approximately 2,000 tons of OCC annually. The applicant sells the baled cardboard to the forest and paper products industry for use as post consumer fiber in the manufacture of a new, useful end product.

The EQC has issued one certificate to the company at the same location for a Marathon TC-3 compactor. The compactor is still in use at the distribution center; therefore, the new baler system is not a replacement of a previously certified facility.

Applicant Address
14375 NW Science Park Drive
Portland, OR 97229

Facility Address
Same as the applicant's address

7762
Global Leasing, Inc
S Corp 93-1097105610

Facility Cost		**$210,030**
Percentage Allocable	X	**100%**
Maximum Percentage	X	**35%**
Tax Credit		$73,511

Description

3,645 95-gallon recycling carts
324 65-gallon recycling carts
500 14-gallon recycling bins

Global Leasing, Inc (lessor) is an equipment leasing company. The lessor claims carts and bins leased to Garbarino Disposal & Recycling Service, Inc (lessee). The lessee placed the carts and bins with Washington County residential customers to accumulate commingled recyclable materials. The lessee collects and transports the material to a recycling center for additional sorting and sale as feedstock used in the manufacture of new products.

The sole purpose of the claimed facility is to recover approximately 7,121 tons of recyclable materials each year.

The EQC has issued 33 certificates to the lessor and 4 to the lessee. The claimed facility is not a replacement to any previously certified facility.

Applicant Address
PO Box 250
North Plains, OR 97133

Facility Address
30966 NW Hillcrest St
North Plains, OR 97133

7763
Global Leasing, Inc
S Corp 93-1097105610

Facility Cost		**$7,137**
Percentage Allocable	X	**100%**
Maximum Percentage	X	**35%**
Tax Credit		$2,498

Description

10 4-yard model 75 recycling containers, serial numbers 20144-201449

Global Leasing, Inc (lessor) is an equipment leasing company. The lessor claims recycling containers leased to Garbarino Disposal & Recycling Service, Inc (lessee). The lessee placed the containers with Washington County commercial and multi-family customers to accumulate commingled recyclable materials. The lessee collects and transports the material to a recycling center for additional sorting and sale as feedstock used in the manufacture of new products.

The sole purpose of the claimed facility is to recover approximately 260 tons of recyclable materials each year.

The EQC has issued 33 certificates to the lessor and 4 to the lessee. The claimed facility is not a replacement to any previously certified facility.

Applicant Address
PO Box 250
North Plains, OR 97133

Facility Address
30966 NW Hillcrest St
North Plains, OR 97133

7764	Facility Cost		**$95,876**
S & C Properties, LLC	Percentage Allocable	X	**100%**
LLC 936-1138676	Maximum Percentage	X	**35%**
	Tax Credit		$33,557

Description

162	65-gallon Rehrig Pacific Company recycling carts, serial numbers 606011-606100, and 1251-1322
1,809	95-gallon Rehrig Pacific Company recycling carts, serial numbers 3817-4167, and 900001-901458

S & C Properties, LLC (lessor) provides leasing services to Sunset Garbage Collection, Inc (lessee). The lessee provides garbage and recycling services to residential and commercial customers in Clackamas and Multnomah Counties.

The lessee collects garbage, recyclable materials, and yard debris from its 4,408 residential customers and 223 commercial customers. The applicant claims yard debris and commingled recycling carts.

The sole purpose of the yard debris carts (90) is to accumulate approximately 117 tons per year of green waste, which the lesses collects and transports to McFarlane's Bark, Inc. for composting. The sole purpose of the commingled recycling carts (1,881) is to accumulate approximately 1,552 tons of recyclable materials, which the lessee collects and delivers to K B Recycling for additional processing and shipping to regional mills for remanufacture into new products.

The applicant agreed with the subtraction of $3,558 from the claimed facility cost for ineligible replacement lids and carts used to accumulate garbage.

The EQC has issued one Pollution Control Facilities Certificate to the lessor certifying a truck and no certificates to the lessee. The claimed facility is not a replacement of a previously certified facility.

Applicant Address
9035 SE Henderson Street
Portland, OR 97266

Facility Address
Sunset Garbage Collection, Inc.
9035 SE Henderson Street
Portland, OR 97266

7771
Umpqua Bank Leasing
C Corp 93-1261319

Facility Cost		**$263,144**
Percentage Allocable	X	**100%**
Maximum Percentage	X	**35%**
Tax Credit		$92,100

Description

One – 2007 Peterbilt model 320A truck, vehicle identification number 3BPZL00X67F17543 equipped with a Labrie model Expert 2000 Helping Hand, 31 cubic yard body, serial number EX07106RUN

Umpqua Bank Leasing (lessor) is a commercial bank that claims a recycling truck leased to Sunset Garbage Collection, Inc (lessee.) The lessee provides garbage and recycling services to residential and commercial customers in Clackamas and Multnomah Counties.

The lessee collects garbage and recyclable materials from its 4,408 residential and 223 commercial customers. The applicant claims a recycling truck and truck body outfitted with automated recycling-cart and glass collection features.

The sole purpose of the truck is to collect and transport approximately 117 tons of green waste to McFarlane's Bark, Inc. for composting and 1,552 tons of recyclable materials to K B Recycling for additional processing and shipping to regional mills for remanufacture into new products.

The EQC has issued twenty five Pollution Control Facilities Certificates to the lessor but none for facilities leased to the lessee or to this location. The EQC issued one certificte to the lessee certifying two trucks. The two trucks are still in operation; therfore, the claimed facility is not a replacement of a previously certified facility.

Applicant Address
6400 SW Corbett Ave
Portland, OR 97239-3558

Facility Address
Sunset Garbage Collection, Inc.
9035 SE Henderson Street
Portland, OR 97266

7784
Kiser Enterprises, Inc.
S Corp 93-0801438

Facility Cost		**$81,908**
Percentage Allocable	X	**100%**
Maximum Percentage	X	**35%**
Tax Credit		$28,668

Description

1,600 65-gallon Rehrig Pacific Company rollcarts, serial numbers R 000001 – 001600
20 35 gallon Rehrig Pacific Company rollcarts, serial numbers R 001601 – 001620

Kaiser Enterprises, Inc., dba Wichita Sanitary Services, is a refuse and recycling company that serves 1,557 residential and 25 commercial customers in the City of Milwaukie and Clackamas County.

The applicant claims recycling carts to accumulate comingled materials. The company collects and delivers the recycable materials to K B Recycling for additional processing and shipping to regional mills for remanufacture into new products.

The sole purpose of these carts is to remove approximately 417 tons of comingled material from the solid waste stream each year.

The EQC has issued eight certificates to the applicant certifying three trucks, yard debris carts and recycling bins. The previously certified recycling bins are still in use to accumulate glass. The new recycling carts do not replace a previously certified facility.

Applicant Address
PO Box 338
Gladstone, OR 97027

Facility Address
5197 SE King Road
Milwaukie, OR 97222

7785
Kiser Enterprises, Inc.
S Corp 93-0801438

Facility Cost		**$56,726**
Percentage Allocable	X	**100%**
Maximum Percentage	X	**35%**
Tax Credit		$19,854

Description

One – Wayne Tomcat Sideloader Recycling Body, serial number 16960

Kaiser Enterprises, Inc., dba Wichita Sanitary Services, is a refuse and recycling company that serves 1,557 residential and 25 commercial customers in the City of Milwaukie and Clackamas County.

The applicant claims a recycling body mounted on an existing chassis. The sideloader captures recycling carts and tips the commingled materials into the truck body. The company delivers the material to K B Recycling for additional processing and shipping to regional mills for remanufacture into new products.

The sole purpose of the claimed facility is to remove approximately 417 tons of commingled material from the solid waste stream each year.

The EQC has issued eight certificates to the applicant certifying three trucks, yard debris carts and recycling bins. The applicant did not install the claimed facility on a previously certified chassis and the applicant continues to use the previously certified trucks in a material recovery process; therfore, the claimed recycling body is not a replacement to a previously certified facility.

Applicant Address
PO Box 338
Gladstone, OR 97027

Facility Address
5197 SE King Road
Milwaukie, OR 97222

References

ORS 468.155[6]

Such prevention, control or reduction required by this subsection shall be accomplished by the use of a material recovery process which obtains useful material from material that would otherwise be, hazardous waste as defined in ORS 466.005, or used oil as defined in ORS 459A.555. ORS 459.005 provides the following definition of solid waste.

> Solid Waste: 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 in ORS 459.386. ORS 459.005(24).

OAR 340-016-0060[7]

> (4) Eligible Activities. The facility shall prevent, reduce, control, or eliminate hazardous waste, solid waste and used oil. 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.

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[6] Definitions for ORS 468.155 to 468.190 and 468.962
[7] Eligibility

Nonpoint Source Pollution Controls

Recommendations and Eligibility Criteria

DEQ recommends the Commission approve a **$4,978** tax credits to **one** applicant that claims an automatic guidance system installed on a no-till drill for certification as nonpoint source (NPS) pollution control facility. The facility is eligible for a tax credit because it meets the criteria in:

☑ ORS 468.155 (1)(a)(B), OAR 340-016-0060 (2)(a) and OAR 340-041-0006(17) – The sole purpose of the facility is to reduce a substantial quantity of NPS.

☑ ORS 468.155 (2)(b), OAR 340-016-0060 (4)(h)(B)(i) – The applicant invested in a method the EQC determined to reduce significant amounts of nonpoint source pollution supported by United States Department of Agriculture or Oregon State University research.

☑ ORS.468.170 (4)(a) – The facility satisfies the intents and purposes of ORS chapters 468A and 468B – Air and Water Pollution.

☑ ORS 468.155(3), ORS 468.170(1) and OAR 340-016-0070 – The facility cost recommended for certification represents the actual pollution control cost of the installation and does not exceed the taxpayer's (applicant) own cash investment in the facility.

☑ ORS 468.190 (3) for facilities that cost less than $50,001, ORS 468.170(1) and ORS 468.190(1) for facilities that cost over $50,000 – The applicant accurately determined and DEQ verified the percentage of the facility cost allocable to nonpoint source pollution control.

☑ ORS 468.173(3)(c) – The maximum tax credit is 35 percent because the applicant submitted the application between January 1, 2002, and December 31, 2008, inclusively, and the certified facility is a nonpoint source pollution control.

Reviews

7782	Facility Cost		**$14,223**
Jeffrey R Newtson	Percentage Allocable	X	**100%**
Individual	Maximum Percentage	X	**35%**
	Tax Credit		$4,978

Description

One – John Deere Greestar 2 system with global positioning autoguidance system

Jeffrey R Newtson operates a dryland wheat and occasional oilseed-crop farm in Northern Umatilla County.

Oregon State Univeristy, OSU Extension Service, provides that precision planting, drilling, fertilizer placement, and spraying delivered using an auto-guidance system, such as the claimed Green Star auto-steer and rate controller, and Norac auto-boom with shutoff software, are important equipment components in the no-till production system. OSU research has shown the systems reduce nonpoint source pollution. The autoguidance system used on the no-till drill allows farmers the ability to reduce and control movement of water and soil off farmland by keeping high level of crop residue on the soil surface. Reduced tillage used in direct seed prooduction systems also reduces air pollution from blowing dust and diesel fuel.

The EQC issued one certificate to the applicant for a no-till drill. The claimed facility is not a replacement of the previously certified facility.

Applicant Address
82696 Stockman Road
Helix, OR 97835-4021

Facility Address
Same as the applicant's address

References

ORS 468.155[8]

(2)(a) As used in ORS 468.155 to 468.190, "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[9]

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:

(A) Mobile sources that can move on or off roads; or

(B) Area sources.

[8] Definitions for ORS 468.155 to 468.190 and 468.962
[9] Definitions

OAR 340-016-0060[10]

(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:

(i) By one or more partners listed in the Oregon Nonpoint Source Control Program Plan; or

(ii) In a federal Clean Air Act State Implementation Plan for Oregon; or

(B) Any facility effective in reducing nonpoint source pollution as documented in supporting research by:

(i) Oregon State University, Agricultural Experiment Station; or

(ii) The United States Department of Agriculture, Agriculture Research Service; or

(iii) The Oregon Department of Agriculture; or

(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.

[10] Eligibility

Water Pollution Controls

Recommendations and Eligibility Criteria

DEQ recommends the Commission approve **$60,821** in tax credits to **32** applicants that claim systems (facilities) that control water pollution. The first application is for a pretreatment system (out of sequence application number 7714) and the remaining 31 applications are for separators installed in dental offices to prevent mercury from discharge to sanitary sewer systems. Each facility is eligible for a tax credit because it meets the criteria in:

☑ ORS 468.155 (1)(a) and OAR 340-016-0060 (2)(a) – The principal purpose of the facility is to reduce water pollution in response to a DEQ or federal EPA imposed condition or the sole purpose of the facility is to reduce a substantial quantity of water pollution.

☑ ORS 468.155 (1)(b)(B) – The facility accomplishes the prevention, control or reduction by disposal or elimination of industrial wastewater and the use of a treatment works for industrial waste defined in ORS 468B.005.

☑ ORS.468.170 (4)(a) – The facility satisfies the intents and purposes of ORS chapter 468B – Water Pollution.

☑ ORS 468.155(3), ORS 468.170(1) and OAR 340-016-0070 – The facility cost recommended for certification represents the actual pollution control cost of the installation and does not exceed the taxpayer's (applicant) own cash investment in the facility.

☑ ORS 468.190 (3) for facilities that cost less than $50,001, ORS 468.170(1) and ORS 468.190(1) for facilities that cost over $50,000 – The applicant accurately determined and DEQ verified the percentage of the facility cost allocable to water pollution control.

☑ ORS 468.173(3) – The maximum tax credit is 35 percent because the applicant submitted their applications between January 1, 2002, and December 31, 2008, inclusively, and the facility or the applicant met one of the conditions in the law as identified in the review.

Reviews

7714

Northwest Paper Box Manufacturers			
	Facility Cost		**$140,674**
	Percentage Allocable	X	**100%**
	Maximum Percentage	X	**35%**
	Tax Credit		$49,236

Description: One – Beckart Environmental, Inc., 1,500 gallon PLC Automated Filter Press Water Treatment System, serial number 07045

Northwest Paper Box Manufactures produce and distribute boxes and packing supplies. The company creates and prints material on labels or directly on the boxes using soy-based water soluble printing inks that contain some copper/copper phthalocyanine and zinc. The process creates wastewater when rinsing the printing machines between color changes and at the end of a printing cycle.

The applicant claims a system to pretreat approximately 500 gallons of wastewater prior to discharge to the City of Portland sanitary sewer system. The claimed facility consists of a Siemens 3-inch flow meters that regulate flow from several box-inking sump stations to an equalization tank containing an agitator and a skimmer to separate oil from water. The system transfers fixed volumes of wastewater from the equalization tank to the chemical reactor tank for pH adjustment and where coagulants and polymers coalesce select contaminants into a floc. The Hy-Pack® filter press captures the floc forming a filter cake and directs the waste water through filter cloths to the filtrate holding tanks. In the filtrate tank, a centrifugal transfer pumps the contents through a pH sensor for final pH adjustments and discharge to the sanitary sewer system. The company disposed of the non-hazardous filter cake at the landfill.

The purpose of the pretreatment system is to comply with the City of Portland discharge standards and limitations even though regulations do no require the applicant obtain a wastewater discharge permit. The pretreatment system reduced the plant's copper and zinc discharge by approximately 99 percent per year and the discharge consistently meets pH standards.

The EQC has not issued any certificates to the company. The claimed facility is not a replacement to a previously certified facility.

Applicant Address
5617 North Basin Avenue
Portland, OR 97217-3901

Facility Address
Same as the applicant's address

7704

Mark A. Rogers

Facility Cost		**$1,385**
Percentage Allocable	X	**100%**
Maximum Percentage	X	**35%**
Tax Credit		$ 485

Description: One – Model CE18 Amalgam Spearator, Serial number 60314

Applicant Address
1678 Liberty Street SE
Salem, OR 97302

Facility Address
Same as the applicant's address

7705

Walter Manning, DMD
Sole Proprietor 93-0956982

Facility Cost		**$1,865**
Percentage Allocable	X	**100%**
Maximum Percentage	X	**35%**
Tax Credit		$ 653

Description: One – Rebec 1003 Model Catch 1000 amalgam separator, serial number J1003060, J30015794

Applicant Address
903 9th Avenue
Albany, OR 97321

Facility Address
Same as the applicant's address

7706

Dr. Jeff Phillips
LLC 20-5901570

Facility Cost		**$ 690**
Percentage Allocable	X	**100%**
Maximum Percentage	X	**35%**
Tax Credit		$ 242

Description: One – Solmetex, Inc. Hg5 Amalgam Separator, serial number 070924710722

Applicant Address
1109 Libertyh Circle 5
Salem, OR 97306

Facility Address
Same as the applicant's address

7710

Mark Allard Miller
Sole Proprietor 87-0717122

Facility Cost		**$1,576**
Percentage Allocable	X	**100%**
Maximum Percentage	X	**35%**
Tax Credit		$ 552

Description: One – Rebec model Catch 1000 mercury separtion and collection system, serial numbers J1004024 and J30016007-07

Applicant Address
133 East Main Street
Carlton, OR 97111

Facility Address
Same as the applicant's address

7711

Anne H Dennehy
LLC 93-1280621

Facility Cost		**$ 915**
Percentage Allocable	X	**100%**
Maximum Percentage	X	**35%**
Tax Credit		$ 320

Description: One – Solmetex Hg5 mini amalgam separator, serial number Hg5-MN-0899

Applicant Address
801 E Main Street, Suite 101
Medford, OR 97504

Facility Address
Same as the applicant's address

7716

Eric L Burbano
Sole Proprietor 93-6069771

Facility Cost		**$ 860**
Percentage Allocable	X	**100%**
Maximum Percentage	X	**35%**
Tax Credit		$ 301

Description: One – Solmetex Hg5 mini amalgam separator, serial number Hg5-MA-0808

Applicant Address
1818 Pacific Avenue
Forest Grove, OR 97116

Facility Address
Same as the applicant's address

7717

Gregory L Hartman, DMD, PC
S Corp 93-1281266

Facility Cost		**$ 715**
Percentage Allocable	X	**100%**
Maximum Percentage	X	**35%**
Tax Credit		$ 250

Description: One – Solmetex Hg5 amalgam separator, serial number 070924710721

Applicant Address
2471 NW 185th Avenue
Hillsboro, OR 97124

Facility Address
Same as the applicant's address

7718

Martin Burbano, DMD
Sole Proprietor 93-1320891

Facility Cost		**$ 860**
Percentage Allocable	X	**100%**
Maximum Percentage	X	**35%**
Tax Credit		$ 301

Description: One – Solmetex Hg5 mini amalgam separator, serial number Hg5-K-17847

Applicant Address
1818 Pacific Avenue
Forest Grove, OR 97116

Facility Address
Same as the applicant's address

7719

Robert A Clark DMD
Sole Proprietor 93-063348

Facility Cost		**$ 821**
Percentage Allocable	X	**100%**
Maximum Percentage	X	**35%**
Tax Credit		$ 287

Description: One – Solmetex Hg5 mini amalgam separator, serial number Hg5-MN-0864

Applicant Address
12400 SW Allen, Suite A
Beaverton, OR 97005

Facility Address
Same as the applicant's address

7723

Robert H Brewer
Sole Proprietor

Facility Cost		**$1,105**
Percentage Allocable	X	**100%**
Maximum Percentage	X	**35%**
Tax Credit		$ 387

Description: One – Reach in-line amalgam separator, serial number 2820

Applicant Address
818 W 6th Street, Suite 3
The Dalles, OR 97058

Facility Address
Same as the applicant's address

7724

Steven M Rogers, DMD
LLC

Facility Cost		**$1,712**
Percentage Allocable	X	**100%**
Maximum Percentage	X	**35%**
Tax Credit		$ 599

Description: One – Rebec Catch model 400 amalgam separator, serial number J402320

Applicant Address
1475 NE Williamson Blvd.
Bend, OR 97201

Facility Address
Same as the applicant's address

7725

Randall R Poe, DDS, PC
C Corp

Facility Cost		**$ 845**
Percentage Allocable	X	**100%**
Maximum Percentage	X	**35%**
Tax Credit		$ 296

Description: One – The Amalgam Collector model CE18, serial number 70767

Applicant Address
3012 W Harvard Avenue
Roseburg, OR 97470

Facility Address
Same as the applicant's address

7726

Albert J Maziarz, DDS	Facility Cost		**$ 727**
Sole Proprietor 93-0665131	Percentage Allocable	X	**100%**
	Maximum Percentage	X	**35%**
	Tax Credit		$ 254

Description: One – Solmetex, Inc. Hg5 Amalgam Separator, serial number 071030732690

Applicant Address
4520 Liberty Road S
Salem, OR 97306

Facility Address
Same as the applicant's address

7727

JoEllen Winston, DMD, PC	Facility Cost		**$ 890**
S Corp 83-0433299	Percentage Allocable	X	**100%**
	Maximum Percentage	X	**35%**
	Tax Credit		$ 312

Description: One – Solmetex, Inc. Hg5 Amalgam Separator, serial number HG5-I-13881

Though the installer charged $350, the applicant only paid $180. DEQ and the applicant subtracted $170 from the claimed cost.

Applicant Address
3016 SE Courtnoy Road
Milwaukie, OR 97222

Facility Address
Same as the applicant's address

7733

Gegory E Heckert
Sole Proprietor

Facility Cost		**$1,022**
Percentage Allocable	X	**100%**
Maximum Percentage	X	**35%**
Tax Credit		$ 358

Description: One – Solmetex, Inc. Hg5 Amalgam Separator, serial number HG5-K-18500

Applicant Address
680 W Highway 20
Toledo, OR 97391

Facility Address
Same as the applicant's address

7735

Thomas E Bachhuber, Jr
Sole Proprietor 93-0860125

Facility Cost		**$ 838**
Percentage Allocable	X	**100%**
Maximum Percentage	X	**35%**
Tax Credit		$ 293

Description: One – Solmetex Hg5 mini amalgam separator, serial number Hg5-MN-0901

Applicant Address
5702 SW Natchez Street
Tualatin, OR 97062

Facility Address
Milwaukie Family Dental
2236 Washington Street
Milwaukie, OR 97222

7741

Ronald JD Trotman, DMD
LLC 93-0813179

Facility Cost		**$1,024**
Percentage Allocable	X	**100%**
Maximum Percentage	X	**35%**
Tax Credit		$ 358

Description: One – Solmetex Hg5 mini amalgam separator, serial number Hg5-K-17976

Applicant Address
10424 NE Wasco
Portland, OR 97220

Facility Address
Same as the applicant's address

7743

Kenneth L Miller	Facility Cost		**$1,427**
Sole Proprietor 93-0645072	Percentage Allocable	X	**100%**
	Maximum Percentage	X	**35%**
	Tax Credit		$ 499

Description: One – Rebec Model REB401 amalgam separator, serial number J30016170-07

Applicant Address
PO Box 5008
Myrtle Creek, OR 97457

Facility Address
Same as the applicant's address

7747

Sue Walker, DMD	Facility Cost		**$ 838**
Sole Proprietor 93-1208512	Percentage Allocable	X	**100%**
	Maximum Percentage	X	**35%**
	Tax Credit		$ 293

Description: One – Solmetex Hg5 mini amalgam separator, serial number Hg5-MN-0900

Applicant Address
2236 SE Washington Street
Milwaukie, OR 97222

Facility Address
Same as the applicant's address

7751

Kelly R Mingus, DMD	Facility Cost		**$ 910**
C Corp 91-1860067	Percentage Allocable	X	**100%**
	Maximum Percentage	X	**35%**
	Tax Credit		$ 319

Description: One – Rebec Catch 400 model 6670 amalgam separator, serial number 66700375

Applicant Address
1475 SW Chandler Avenue, Suite 201
Bend, OR 97702

Facility Address
Same as the applicant's address

7754

Larry M Ternus DMD
Sole Proprietor 93-0897607

Facility Cost		**$1,000**
Percentage Allocable	X	**100%**
Maximum Percentage	X	**35%**
Tax Credit		$ 350

Description: One – Solmetex Hg5 mini amalgam separator, serial number EC-07511-272

Applicant Address
PO Box 336
278 Rowe Street
Wheeler, OR 97147

Facility Address
Same as the applicant's address

7756

Davir M Ross
Sole Proprietor 93-1124920

Facility Cost		**$1,709**
Percentage Allocable	X	**100%**
Maximum Percentage	X	**35%**
Tax Credit		$ 598

Description: One – Recec model Catch 1000 Plus amalgam separator, serial number 66702641, J1003063

Applicant Address
1925 Commercial Street NE
Salem, OR 97302

Facility Address
Same as the applicant's address

7760

Steve Mock DMD

Facility Cost		**$ 856**
Percentage Allocable	X	**100%**
Maximum Percentage	X	**35%**
Tax Credit		$ 300

Description: One – Solmetex Hg5 mini amalgam separator, serial number Hg5-K-18664

Applicant Address
315 B Caves Highway
Cave Junction, OR 97523

Facility Address
Same as the applicant's address

7761

Timothy BG Welch, MD, DDS

Facility Cost		**$ 866**
Percentage Allocable	X	**100%**
Maximum Percentage	X	**35%**
Tax Credit		$ 303

Description: One – Rebec model Catch 400 amalgam separator, serial number J402331

Applicant Address
911 Country Club Road, Suite 100
Eugene, OR 97401

Facility Address
Same as the applicant's address

7766

Roy Alan George
LLC 93-1107145

Facility Cost		**$1,688**
Percentage Allocable	X	**100%**
Maximum Percentage	X	**35%**
Tax Credit		$ 591

Description: One – Rebec model Catch HG 1000 amalgam separator, serial number J1001222, J30016348

Applicant Address
5830 Shoreview Lane N
Keizer, OR 97303

Facility Address
Same as the applicant's address

7768

Benjamin Todd Grieb DMD PC
S Corp 20-2006830

Facility Cost		**$1,034**
Percentage Allocable	X	**100%**
Maximum Percentage	X	**35%**
Tax Credit		$ 362

Description: One – Solmetex model Hg5 amalgam separator, serial number 18744

Applicant Address
155 Shevlin-Hixon Drive
Bend, OR 97702

Facility Address
Same as the applicant's address

7769

Samir Kumar
S Corp 710902736

Facility Cost		**$1,020**
Percentage Allocable	X	**100%**
Maximum Percentage	X	**35%**
Tax Credit		$ 357

Description: One – Rebec model Catch 400 amalgam separator, serial number J401914, J30016277-01

Applicant Address
12450 SW Pioneer Lane
Beaverton, OR 97008

Facility Address
Same as the applicant's address

7772

Dave Bizeau

Facility Cost		**$ 983**
Percentage Allocable	X	**100%**
Maximum Percentage	X	**35%**
Tax Credit		$ 345

Description: One – Rebec model Catch 400 amalgam separator, serial number J401996, J30016277-08

Applicant Address
2310 10th Street
Tillamook, OR 97141

Facility Address
Same as the applicant's address

7773

Gerald E Anderson DMD
Sole Proprietor 93-0695262

Facility Cost		**$ 947**
Percentage Allocable	X	**100%**
Maximum Percentage	X	**35%**
Tax Credit		$ 331

Description: One – Solmetex model Hg5 amalgam separator, serial number K17984

Applicant Address
3975 River Road N, Suite 5
Keizer, OR 97303-4811

Facility Address
Same as the applicant's address

7780

David J Spangler DDS PC
S Corp 93-0786550

Facility Cost		**$1,225**
Percentage Allocable	X	**100%**
Maximum Percentage	X	**35%**
Tax Credit		$ 429

Description: One – R & D Services, Inc. model CE24 Amalgam Separator, serial number 60361

Applicant Address
17895 NW Evergree Parkway
Beaverton, OR 97006

Facility Address
Same as the applicant's address

7783

R Claire Campbell
Sole Proprietor 93-1211238

Facility Cost		**$ 743**
Percentage Allocable	X	**100%**
Maximum Percentage	X	**35%**
Tax Credit		$ 260

Description: One – RAMVAC model Hg5 Amalgam Separator, serial number HG5RVK-17034

Applicant Address
13110 SE Sunnyside Road
Clackamas, OR 97015

Facility Address
Same as the applicant's address

References

ORS 468.155[11]

(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…water …pollution…; or

(B) The sole purpose of such use, erection, construction or installation is to prevent, control or reduce a substantial quantity of…water…pollution…

(1)(b) Such prevention, control or reduction required by this subsection shall be accomplished by:… (B) 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 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 that 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

[11] Definitions for ORS 468.155 to 468.190 and 468.962

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.

OAR 340-016-0060(4)[12]

Eligible Activities. The facility shall prevent, reduce, control, or eliminate 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.

For underground storage tank systems,

(g) Spills or Unauthorized Releases. The facility shall be used to detect, defer or prevent spills or unauthorized releases. This does not include any facility installed, constructed or used for cleanup after a spill or unauthorized release has occurred …

[12] Eligibility

Attachment C
Tax Expenditure Liability Report

When the Environmental Quality Commission issues a Pollution Control Facilities Tax Credit (PCTC) Certificate, the State of Oregon incurs a tax expenditure liability.

The Tax Expenditure Liability Report shows the maximum potential fiscal impact of the EQC's certification of:

- Facilities presented in this staff report,
- Facilities certified in the 2007-09 biennium and
- Wood chipper certifications sub-delegated to the Department.

The amount listed under each year is the maximum potential credit that taxpayers with certificates may use to reduce their Oregon taxes in any one year. This 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 Commission approved certification.

Attac nent C

Tax Expenditure Liability Report

App #	Tax Credit	Placed in Operation	UL	Remaining UL	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
7704	$485	2007	1	1		485	0	0	0	0	0	0	0	0	0
7705	$653	2007	1	1		653	0	0	0	0	0	0	0	0	0
7706	$241	2007	1	1		241	0	0	0	0	0	0	0	0	0
7708	$54,860	2007	20	10		5,486	5,486	5,486	5,486	5,486	5,486	5,486	5,486	5,486	5,486
7709	$20,974	2007	20	10		2,097	2,097	2,097	2,097	2,097	2,097	2,097	2,097	2,097	2,101
7710	$552	2007	1	1		552	0	0	0	0	0	0	0	0	0
7711	$320	2007	1	1		320	0	0	0	0	0	0	0	0	0
7712	$6,010	2007	1	1		6,010	0	0	0	0	0	0	0	0	0
7713	$27,335	2007	5	4		6,834	6,834	6,834	6,833	0	0	0	0	0	0
7714	$49,236	2007	10	9		5,471	5,471	5,471	5,471	5,471	5,471	5,471	5,471	5,468	0
7715	$16,786	2006	20	10		1,679	1,679	1,679	1,679	1,679	1,679	1,679	1,679	1,679	1,675
7716	$301	2008	1	1		301	0	0	0	0	0	0	0	0	0
7717	$250	2007	1	1		250	0	0	0	0	0	0	0	0	0
7718	$301	2007	1	1		301	0	0	0	0	0	0	0	0	0
7719	$287	2007	1	1		287	0	0	0	0	0	0	0	0	0
7720	$65,432	2007	20	10		6,543	6,543	6,543	6,543	6,543	6,543	6,543	6,543	6,543	6,545
7721	$4,550	2007	10	9		506	506	506	506	506	506	506	506	502	0
7722	$46,653	2006	20	10		4,665	4,665	4,665	4,665	4,665	4,665	4,665	4,665	4,665	4,668
7723	$387	2007	1	1		387	0	0	0	0	0	0	0	0	0
7724	$599	2007	1	1		599	0	0	0	0	0	0	0	0	0
7725	$296	2008	1	1		296	0	0	0	0	0	0	0	0	0
7726	$254	2007	1	1		254	0	0	0	0	0	0	0	0	0
7727	$312	2007	1	1		312	0	0	0	0	0	0	0	0	0
7728	$15,150	2007	5	4		3,788	3,788	3,788	3,786	0	0	0	0	0	0
7732	$162,412	2007	5	4		40,603	40,603	40,603	40,603	0	0	0	0	0	0
7733	$358	2007	1	1		358	0	0	0	0	0	0	0	0	0
7735	$293	2007	1	1		293	0	0	0	0	0	0	0	0	0
7741	$358	2007	1	1		358	0	0	0	0	0	0	0	0	0
7743	$499	2007	1	1		499	0	0	0	0	0	0	0	0	0
7747	$293	2007	1	1		293	0	0	0	0	0	0	0	0	0

Attachment C
Tax Expenditure Liability Report

App #	Tax Credit	Placed in Operation	UL	Remaining UL	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
7751	$318	2007	1	1		318	0	0	0	0	0	0	0	0	0
7754	$350	2007	1	1		350	0	0	0	0	0	0	0	0	0
7756	$598	2007	1	1		598	0	0	0	0	0	0	0	0	0
7758	$385	2007	1	1		385	0	0	0	0	0	0	0	0	0
7760	$300	2007	1	1		300	0	0	0	0	0	0	0	0	0
7761	$303	2007	1	1		303	0	0	0	0	0	0	0	0	0
7762	$73,510	2007	7	6		12,252	12,252	12,252	12,252	12,252	12,250	0	0	0	0
7763	$2,498	2007	7	6		416	416	416	416	416	418	0	0	0	0
7764	$33,557	2007	5	4		8,389	8,389	8,389	8,390	0	0	0	0	0	0
7766	$591	2007	3	2		296	295	0	0	0	0	0	0	0	0
7768	$362	2008	1	1		362	0	0	0	0	0	0	0	0	0
7769	$357	2008	1	1		357	0	0	0	0	0	0	0	0	0
7771	$92,100	2007	5	4		23,025	23,025	23,025	23,025	0	0	0	0	0	0
7772	$345	2007	3	2		172	173	0	0	0	0	0	0	0	0
7773	$331	2007	1	1		331	0	0	0	0	0	0	0	0	0
7780	$429	2007	1	1		429	0	0	0	0	0	0	0	0	0
7781	$385	2008	1	1		385	0	0	0	0	0	0	0	0	0
7782	$4,978	2007	7	6		830	830	830	830	830	828	0	0	0	0
7783	$260	2007	1	1		260	0	0	0	0	0	0	0	0	0
7784	$28,668	2007	5	4		7,167	7,167	7,167	7,167	0	0	0	0	0	0
7785	$19,854	2007	5	4		4,964	4,964	4,964	4,962	0	0	0	0	0	0
April '08	736,916				0	152,610	135,183	134,715	134,711	39,945	39,943	26,447	26,447	26,440	
Dec '07	7,673,039				1,012,126	989,389	988,255	978,143	913,289	707,136	656,986	644,911	640,644	202,507	
June '07	2,065,205				328,872	328,419	298,036	170,478	156,614	131,510	128,840	128,837	63,873	63,873	
WC '07-09	514,564				95,200	182,251	121,115	65,153	27,792	22,312	370	371	0	0	0
Total	**$10,989,724**					**$1,652,669**		**$1,348,489**		**$900,903**		**$800,566**		**$292,820**	
					$1,436,198		**$1,542,589**		**$1,232,406**		**$826,139**		**$730,964**		

Attachment D
Certified Wood Chipper Report
November 27, 2007 – December 31, 2007

On October 4, 2002, the Commission adopted OAR 340-016-0009 to delegate its wood chipper certification authority to the Department. The Commission requested that the Department periodically provide a listing of the wood chipper certifications.

The Department presented the last Certified Wood Chipper Report to the EQC on December 13, 2007. Attachment D presents **83** wood chippers certified on November 27, 2007, and December 31, 2007, for **$292,494** in tax credits.

Reference

OAR 340-016-0009[1]

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.

[1] Certification of wood chippers

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) Notify 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

Attachment D

Certified Wood Chipper Report

November 26, 2007 through December 31, 2007

Action Date	App #	Applicant	Claimed	Certified	Difference	% Allocable	Maximum Percent	Tax Credit
26-Nov-07	7584	Terry Keeler	2,228	2,228	0	100%	35%	780
26-Nov-07	7586	Steven Walter Johnson	8,250	8,250	0	100%	35%	2,888
26-Nov-07	7588	John A. Barnes	1,700	1,700	0	100%	35%	595
26-Nov-07	7590	Nicholas B. Anderson	3,058	3,058	0	100%	35%	1,070
26-Nov-07	7591	Pam Branagan-Bisset	1,428	1,428	0	100%	35%	500
26-Nov-07	7594	Robert Hottenroth	594	594	0	100%	35%	208
26-Nov-07	7595	Jack Hackett, Wanda Hackett	1,899	1,899	0	100%	35%	665
26-Nov-07	7596	Industrial Hydraulic Service	2,368	2,368	0	100%	35%	829
26-Nov-07	7598	Clayton Young	3,200	3,200	0	100%	35%	1,120
26-Nov-07	7599	Jefferey S. Zens	1,399	1,399	0	100%	35%	490
26-Nov-07	7600	John R. Zounes	1,550	1,550	0	100%	35%	543
26-Nov-07	7609	Melvyn N. Haldors	2,750	2,750	0	100%	35%	963
26-Nov-07	7610	Robert D. Fields	1,820	1,820	0	100%	35%	637
26-Nov-07	7611	Lance and Tareena Cochran	1,750	1,750	0	100%	35%	613
26-Nov-07	7612	George Randy Moore, Helen E. Moore	3,750	3,750	0	100%	35%	1,313
26-Nov-07	7613	Mike Jones	21,900	21,900	0	100%	35%	7,665
26-Nov-07	7614	Ronald Russell	4,000	4,000	0	100%	35%	1,400
26-Nov-07	7615	Tom Dew	2,599	2,599	0	100%	35%	910
26-Nov-07	7616	Aron Rothstein	4,189	4,189	0	100%	35%	1,466
26-Nov-07	7617	James D. Scheller	1,400	1,400	0	100%	35%	490
26-Nov-07	7618	L. Ross Babock III	1,799	1,799	0	100%	35%	630
26-Nov-07	7619	Jason Jay Smith	40,000	40,000	0	100%	35%	14,000
26-Nov-07	7620	Nicholas E. Van Dyke	2,389	2,389	0	100%	35%	836
26-Nov-07	7621	Levi Chamberlain	12,500	12,500	0	100%	35%	4,375
26-Nov-07	7622	David Olsen	1,100	1,100	0	100%	35%	385
26-Nov-07	7623	Don Kania	8,649	8,649	0	100%	35%	3,027
26-Nov-07	7624	BBB Contracting Corp.	29,159	29,159	0	100%	35%	10,206
26-Nov-07	7625	Brent H. Rhule	12,500	12,500	0	100%	35%	4,375
26-Nov-07	7626	Tree Care & Landscapes Unlimited, Inc	39,000	39,000	0	100%	35%	13,650

Attachment D

Certified Wood Chipper Report

November 26, 2007 through December 31, 2007

Action Date	App #	Applicant	Claimed	Certified	Difference	% Allocable	Maximum Percent	Tax Credit
26-Nov-07	7627	Victoria J. Rigby	1,750	1,750	0	100%	35%	613
26-Nov-07	7628	James R. Dutson	5,728	5,728	0	100%	35%	2,005
26-Nov-07	7629	Edward W. Styskel	2,158	2,166	8	40%	35%	303
26-Nov-07	7634	Jami Thomas	1,650	1,650	0	100%	35%	578
26-Nov-07	7635	Tom Haley	1,164	1,160	-4	100%	35%	406
26-Nov-07	7636	William Gingg	29,000	29,000	0	100%	35%	10,150
26-Nov-07	7637	Christopher J McMurtry	1,100	1,100	0	100%	35%	385
26-Nov-07	7638	Jamin Giersbach	1,850	1,850	0	100%	35%	648
26-Nov-07	7639	Patrick G. Mercer	7,468	7,468	0	100%	35%	2,614
26-Nov-07	7640	Vernon Imel	29,000	29,000	0	100%	35%	10,150
26-Nov-07	7641	Vertex Relocation, Inc.	31,900	31,900	0	100%	35%	11,165
31-Dec-07	7643	David McKiernan	17,950	17,950	0	100%	35%	6,283
31-Dec-07	7644	Jeff Laughlin	10,000	10,000	0	100%	35%	3,500
31-Dec-07	7650	Whispering Hills Farm	8,084	8,084	0	100%	35%	2,829
31-Dec-07	7651	Harry E Krumlauf	1,799	1,799	0	100%	35%	630
31-Dec-07	7664	Craig S Hoffman, Inc.	6,900	6,900	0	100%	35%	2,415
31-Dec-07	7665	Jeff Clawson	1,730	1,730	0	100%	35%	606
31-Dec-07	7666	Marvin Walter Klopfenstein	4,500	4,500	0	100%	35%	1,575
31-Dec-07	7667	Brooks Brush Clearing, LLC	20,995	20,995	0	100%	35%	7,348
31-Dec-07	7668	William W Lattin	8,459	8,459	0	100%	35%	2,961
31-Dec-07	7669	Allan M. Dowler	1,400	1,400	0	100%	35%	490
31-Dec-07	7670	Terrance J Tosney	4,000	4,000	0	100%	35%	1,400
31-Dec-07	7671	Kevin Frison	21,000	21,000	0	100%	35%	7,350
31-Dec-07	7672	Michael Allan Bartlett	33,000	33,000	0	100%	35%	11,550
31-Dec-07	7673	Medford Oaks RV Resort Inc.	7,404	7,404	0	100%	35%	2,591
31-Dec-07	7674	Dave and Anna Budeau	3,100	3,100	0	100%	35%	1,085
31-Dec-07	7675	Debra S. Oldaker	3,570	3,570	0	100%	35%	1,250
31-Dec-07	7676	Robert J. Anderson	1,800	1,800	0	100%	35%	630
31-Dec-07	7677	Dain Sansome	30,100	30,100	0	100%	35%	10,535

Attachment D

Certified Wood Chipper Report

November 26, 2007 through December 31, 2007

Action Date	App #	Applicant	Claimed	Certified	Difference	% Allocable	Maximum Percent	Tax Credit
31-Dec-07	7678	Arlan E. Askew	875	875	0	100%	35%	306
31-Dec-07	7679	David E. Williams	1,889	1,889	0	100%	35%	661
31-Dec-07	7680	Gregory S. Vollmer	2,500	2,500	0	100%	35%	875
31-Dec-07	7681	Richard Hewitt Holmes	31,450	31,450	0	100%	35%	11,008
31-Dec-07	7682	George B Partridge	2,800	2,800	0	100%	35%	980
31-Dec-07	7683	Tenny L. Feltmeyer	2,309	2,309	0	100%	35%	808
31-Dec-07	7684	Eric Hiaasen	999	999	0	100%	35%	350
31-Dec-07	7685	Harvey D. Hillis	6,498	6,498	0	100%	35%	2,274
31-Dec-07	7686	Treepeople LLC	28,000	28,000	0	100%	35%	9,800
31-Dec-07	7687	Beaver Tree Service, Inc.	39,300	39,300	0	100%	35%	13,755
31-Dec-07	7688	Dale Cordell	20,046	20,046	0	100%	35%	7,016
31-Dec-07	7689	Douglas J. Nelson	1,795	1,795	0	100%	35%	628
31-Dec-07	7691	Raymond E. Dick	4,150	4,150	0	100%	35%	1,453
31-Dec-07	7692	Brian Craig Carr	3,700	3,700	0	100%	35%	1,295
31-Dec-07	7693	Daniel R. Irwin	3,100	3,100	0	100%	35%	1,085
31-Dec-07	7694	Dave Jones, Inc.	1,100	1,100	0	100%	35%	385
31-Dec-07	7695	Mark Appledoorn	4,000	4,000	0	100%	35%	1,400
31-Dec-07	7696	Spring River Tree Service, Inc.	38,518	38,518	0	100%	35%	13,481
31-Dec-07	7697	Wayne M. Perry	11,164	11,164	0	100%	35%	3,907
31-Dec-07	7698	Central Coast Excavating, Inc.	48,832	48,832	0	100%	35%	17,091
31-Dec-07	7699	Dan Crawford	18,000	18,000	0	100%	35%	6,300
31-Dec-07	7700	Richard L. Levine	2,495	2,495	0	100%	35%	873
31-Dec-07	7701	Joe R. Edienschink	1,795	1,795	0	100%	35%	628
31-Dec-07	7702	Kevin R. MacKenzie	27,640	27,640	0	100%	35%	9,674
31-Dec-07	7703	Richard B. Rogers	16,550	16,550	0	100%	35%	5,793
83 Applications		**Sum**	**$836,992**	**$836,996**				**$292,494**

State of Oregon
Department of Environmental Quality Memorandum

Date: April 7, 2008

To: Environmental Quality Commission

From: Dick Pedersen, Acting Director

Subject: Agenda Item G, Informational Item: Oregon Environmental Council presentation
April 24-25, 2008 EQC Meeting

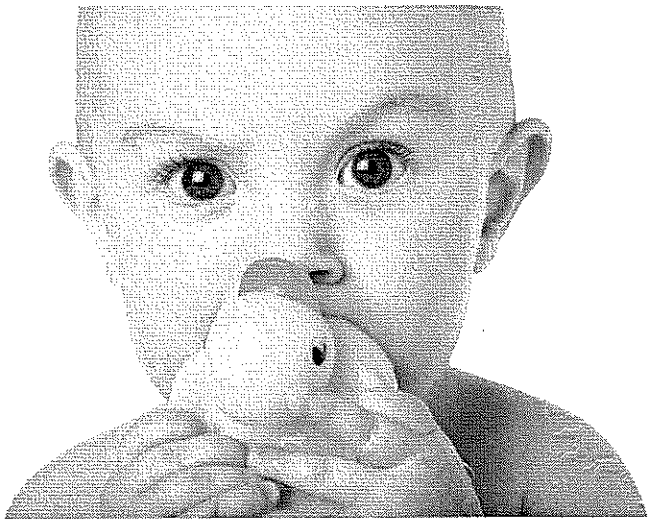
Andrea Durbin, executive director of the Oregon Environmental Council (OEC), will speak to the Environmental Quality Commission (EQC) about the OEC's recently published research and current work on issues related to health and the environment. This presentation coincides with an evening meeting Thursday, April 24, 2008 between the EQC and the OEC's board of directors. The meeting will take place from 5:00 – 8:00 pm in the Eastside Hospitality room on the 4th floor of the NW Natural Building, 220 NW Second Avenue in Portland, and is open to the public.

Attachments

A. Toxic-free Legacy Coalition fact sheet: What's in the Toy Box?
B. Toxic-free Legacy Coalition fact sheet: Washington's Children's Safe Products Act of 2008
C. Pollution in People: Executive summary
D. Price of Pollution fact sheet

What's In The Toy Box?

Toxic Chemicals and Children's Products



This summer, manufacturers recalled millions of toys because of dangerous lead paint, including such beloved favorites as Thomas the Tank Engine, Dora the Explorer, and Elmo. Researchers have also found lead in children's jewelry and vinyl baby bibs and lunch boxes.

It's Not Just About Lead from China

While many of the recalled toys were manufactured in China where materials and labor are cheap and regulations are lax, the problem of toxic toys isn't just about lead from China. Many children's products - toys, baby bottles, car safety seats, baby shampoos, and clothing – contain toxic chemicals linked to a wide array of health effects including reproductive problems, learning disabilities, hormone problems, and cancer. Children are uniquely vulnerable to toxic chemicals, which can disrupt their development and cause lifelong health problems.

No Government Oversight of Toxic Chemicals in Consumer Products

Why is it that in 2007 children's products containing toxic chemicals still make it to store shelves and into our homes? The frightening answer is that there is little federal or state government oversight on toxic chemicals in children's products.

A Sensible Solution To Make Toys and Other Products Safe For Kids

Parents should be able to buy toys and other products without fear of toxic ingredients that might harm their children. Fortunately, there is a sensible solution:

- Only the safest chemicals and materials should be allowed in toys and other children's products.
- Manufacturers of toys and children's products must be required to test and disclose the chemical contents of their products.
- Technical assistance should be available to help businesses make safer products for kids.

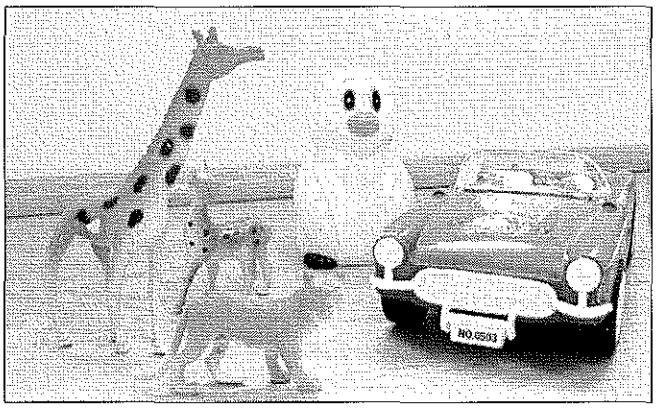
After the passage of landmark legislation to protect our kids from toxic flame retardants, the time is right for Washington State to make toys and all children's products safe for kids!

Nobody Minding the Store

The federal government has been slow to act to protect infants and children from toxic chemicals in toys and other products. For example, the only federal law on lead in toys is thirty years old and only applies to lead in paint. It does not regulate lead in other materials, making lead in vinyl (PVC) products (like baby bibs), plastics, or jewelry perfectly legal.

The federal government rarely regulates commonly used synthetic chemicals in consumer products, even those meant for children, despite current scientific understanding of the hazards of many of these chemicals. For example:

- The federal government doesn't require companies to tell consumers what's in their products, or to label them so consumers can make their own choices.
- Despite all we do know about the dangers of lead and other toxic chemicals, manufacturers are allowed to use them in toys and other children's products even though safer alternatives exist.
- The federal Consumer Product Safety Commission (CPSC) does not have the authority to ensure that toys are safe. The CPSC has no legal authority to test children's products before sale. Recalls are mainly voluntary and rarely happen unless a company alerts the agency of a problem.



While all of these toys contain lead in amounts well above the federal lead paint limit, the vinyl penguin and plastic car are legal because there are no federal limits on lead in vinyl or plastic.

States Are Taking Action Now

Fortunately, states are taking action where the federal government has failed to protect children from harmful chemicals in everyday consumer products. California, New York and Michigan have stepped up to regulate jewelry and other products by limiting lead content. Numerous states are considering laws to regulate chemicals in products, including Massachusetts, California, Connecticut, and Minnesota.

Washington State Should Not Wait To Act

Washington State cannot and should not wait for the federal government to act. While there are thousands of toxic chemicals on the market and many are in products our children sleep on, put in their mouths, play with, and wear every day, there is no system to ensure that these products are safe. The same chemicals in these products end up as a waste problem in landfills and incinerators and a contamination problem in Puget Sound, the Columbia River and other waterbodies. We also know these same chemicals are building up in the food chain and in our bodies.

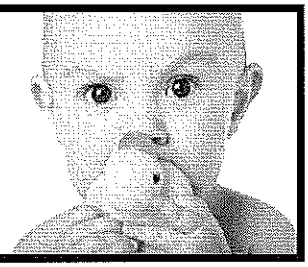
The Washington State Legislature must take action now to protect children from toxic chemicals in toys and other products by passing the Children's Safe Products Act of 2008 (HB 2647 and SB 5630) that will:

- Prohibit the use of dangerous chemicals, such as lead, cadmium, and phthalates, in children's products.
- Provide consumers with useful information to make safer buying choices. Manufacturers of children's products should be required to test and disclose the chemical contents of their products.
- Put Washington on track to addressing the many other hazardous chemicals in children's products.

For More Information Contact:

Laurie Valeriano, Washington Toxics Coalition, 206-632-1545 ext. 114
Ivy Sager-Rosenthal, Washington Toxics Coalition, 206-632-1545 ext. 122

Washington's Children's Safe Products Act of 2008



TOXIC-FREE LEGACY COALITION FEBRUARY, 29 2008

This summer, manufacturers recalled millions of toys because of dangerous lead paint. Unfortunately, lead has turned out to be only the start of parents' worries as closer scrutiny of toys and other children's products has revealed other potentially harmful chemicals that are linked to reproductive problems, learning disabilities, hormone problems, and cancer. The federal government has been slow to act. Washington State must take action now to protect children from toxic chemicals by passing the Children's Safe Products Act of 2008.

Specifically, the Children's Safe Products Act will:

Protect children from lead, cadmium, and phthalates in products they use everyday.

- The bill prohibits the sale of children's products containing lead at more than 90 ppm (parts per million), beginning July 1, 2009, and then at 40 ppm beginning July 1, 2010. The 40 ppm limit for lead is recommended by the American Academy of Pediatrics and is far more protective of children than the current federal standard of 600 ppm lead in paint.
- The bill prohibits the sale of children's products containing cadmium at more than 40 ppm (parts per million), beginning July 1, 2009.
- The bill prohibits the sale of children's products containing any combination of six specific phthalates at more than 100 ppm, beginning July 1, 2009. These six phthalates have been banned in children's products in the European Union since 1999 and were banned in California last year.
- Children's products addressed by the bill include toys, cosmetics and jewelry intended for children under the age of twelve, or any product designed or intended for teething, feeding, or clothing a child. Products such as certain electronic products, batteries, and chemistry sets are not covered.
- Retailers who unknowingly sell restricted products will not be held liable.

Provide consumers with information to make safer product choices for their children.

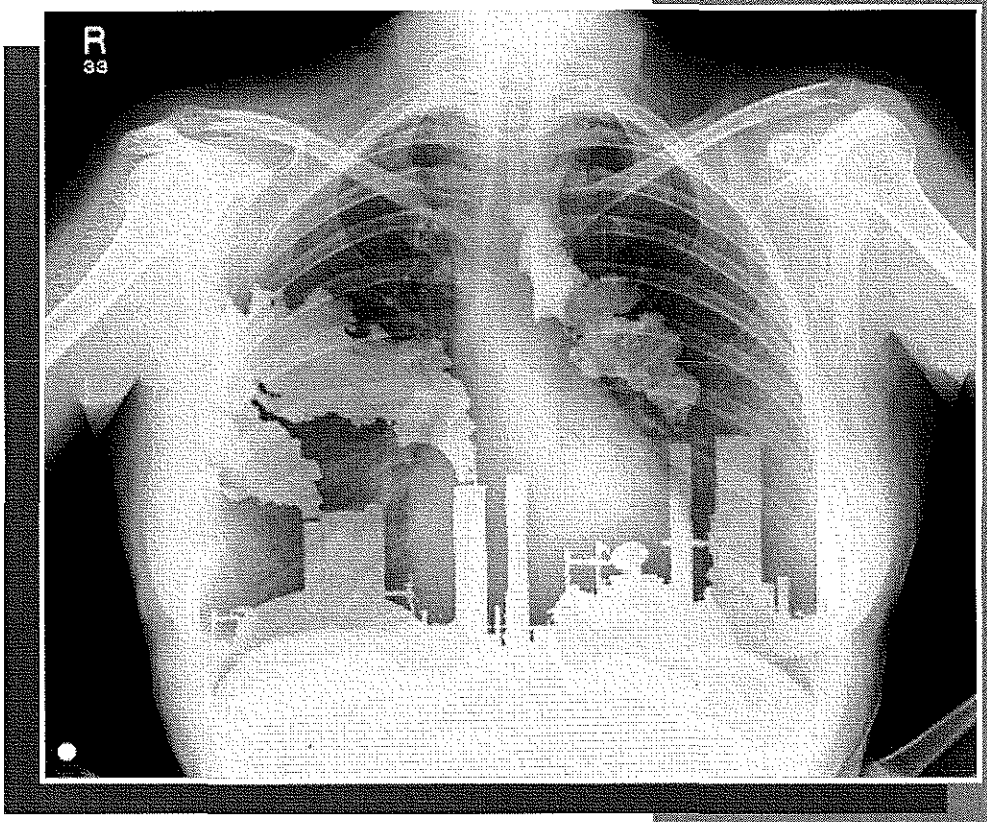
- The bill requires manufacturers of children's products to report whether their product contains a "chemical of high concern to children" to the Department of Ecology. Ecology will develop this list through rulemaking.
- The Department of Ecology is required to publish the manufacturer's information on a website along with information on available safer alternatives to the chemical.
- The Department of Health must educate parents, child care providers, and health professionals about toxic chemicals in infant and children's products.

Put Washington on track to addressing the many other hazardous chemicals in children's products.

- The bill requires Ecology to identify chemicals that are of high concern for children and the children's products or product categories that may contain them. These chemicals are those linked to developmental toxicity, cancer, reproductive harm, or hormone disruption that are present in our bodies, our homes, our drinking water, or our consumer products.
- Ecology must report their findings on the chemicals and products, along with policy recommendations on how to best regulate chemicals in products, to the Legislature by January 1, 2009.

Toxic-Free Legacy Coalition
4649 Sunnyside Avenue N., Suite 540 • Seattle, WA 98103 • 206-632-1545 ext. 123 • FAX 206-632-8661 • www.toxicfreelegacy.org

Oregon Environmental Council



POLLUTION IN PEOPLE

A Study of Toxic Chemicals in Oregonians

NOVEMBER 2007

EXECUTIVE SUMMARY

Oregonians are polluted with many hazardous industrial chemicals according to a new study conducted by the Oregon Environmental Council (OEC) and the Oregon Collaborative for Health and the Environment (CHE-OR). In 2007, ten Oregon women and men volunteered to have their bodies tested in a study of chemical pollution in people. These Oregonians represent a diverse group of people from rural and urban areas throughout the state. Unfortunately, one thing they probably share with all Oregonians is the unwelcome presence of toxic chemicals in their bodies.

KEY FINDINGS:

1. Toxic chemicals from consumer products, food, and industrial pollution contaminate our bodies. Each person tested in this study had at least nine and as many as 16 toxic chemicals in his or her body. Of the 29 chemicals tested, a total of 19 were detected in the ten volunteers, including six perfluorinated chemicals (PFCs) six phthalates, mercury, four organophosphate pesticide metabolites, bisphenol A, and polychlorinated biphenyls (PCBs). While some of these toxic chemicals come from contaminated soil, air, and water, many of the pollutants also come from food, everyday household dust, and from direct contact with such everyday products as personal care items, plastic products, consumer electronics, and stain-resistant furniture.

2. The toxic chemicals in our bodies are cause for concern because they can lead to health problems. The latest scientific research provides increasing evidence that toxic chemicals harm the health of adults, children, and developing fetuses. Children and fetuses are of particular concern because chemical exposures at critical points in child development can cause irreversible, often subtle, damage. Although no children or pregnant women were included in our study, it is reasonable to assume that their bodies are exposed to the same chemicals most of us are exposed to.

- Every participant was contaminated with phthalates, endocrine disrupting chemicals found in a variety of everyday consumer products. Recent scientific studies in humans have linked low-level phthalate exposure to reduced sperm count, feminization of male genitals, and premature delivery. Study participant Jeff VonAllmen, a Portland-area firefighter, had levels of the phthalate DEHP that were more than 16 times the national median.

- Although PCBs were banned in the 1970s, they were detected in the blood of all ten participants, including one born in the early 1980s. PCBs from everyday exposures have been associated with learning deficits.

- Every participant had mercury in his or her blood. While none of the participants had mercury exposures above the Environmental Protection Agency's "safe" level, all but one participant had blood mercury levels higher than the national median. Mercury is a potent neurotoxin that is of particular concern for young children and the developing fetus.

- PFOA, a chemical of the PFC class used in the manufacture of Teflon®, is a likely human carcinogen and was detected in every participant.

- The hormone-disrupting chemical bisphenol A was found in 80% of the participants. Don Sampson and Linda Hornbuckle had bisphenol A levels that were higher than 90% of people that have been tested in national biomonitoring studies. Studies on laboratory animals have shown that at very low doses bisphenol A can lead to a number of adverse health effects including reduced sperm count, impaired immune system functioning, and increases in prostate tumor proliferation.

3. State and federal regulations have failed to prevent the use of harmful chemicals in consumer products and in manufacturing and production processes. Current federal law does not require testing for harmful effects to humans or the environment before chemicals are allowed to be used in products or for manufacturing. Once chemicals are in use it is extremely difficult for the EPA to restrict them, because they must balance costs incurred to manufacturers with the impacts to human health and the environment. At the state level, Oregon lacks the regulatory structure needed to prevent toxic chemicals from polluting our consumer products, household goods, and people.

Recognizing that the safety system for industrial chemicals is broken and that Oregonians accumulate a body burden of toxic chemicals associated with negative health impacts, the Oregon Environmental Council and CHE-OR strongly recommend that our government develop and adopt comprehensive policies to ensure that only the safest chemicals are used in consumer products and in manufacturing and production processes. These policies need to fill the existing safety, data, and information gaps left by inadequate federal chemical laws. Specifically, we call for the following actions to be taken:

- Require that complete information on chemical ingredients and their toxicity be provided for all products
- Categorize chemicals into levels of concern; manage these chemicals based on hazards; and substitute chemicals of highest concern with safer alternatives
- Establish policies, practices, and incentives that move Oregon toward safer alternatives
- Ensure that workers and impacted communities are protected
- Provide adequate funding and enforcement

These policies will not be implemented overnight, but it is critical that we begin reform now. In the short-term, OEC and CHE-OR call on state agencies to utilize safer products for institutional operations (e.g. cleaning products). In the 2009 legislative session, we will call on our leaders to enact policies that require the disclosure of ingredients in consumer products and to establish a framework to remove the most toxic chemicals from these and other products. It is time for Oregon to begin establishing common-sense chemicals policies to ensure a healthy future for all Oregonians.

The Price of POLLUTION

Oregon Environmental Council

Cost Estimates of Environmentally-Related Disease in Oregon

Oregonians spend at least $1.57 billion annually on preventable disease caused by pollution.

Numerous studies have established the links between environmental pollution and disease and disability, such as the connection between air pollution and asthma, the connection between exposure to chemicals like benzene and the development of cancer.[1] The dangerous affect of lead exposure on child brain development, including learning difficulties, lower IQ, and decreased coordination, is well established. Exposures to mercury, air pollution, PCBs, and other pollutants have been linked to a wide range of birth defects, including heart defects, spina bifida, and cleft lip and palate.

Typically, decision makers consider only the upfront costs of implementing environmental health protection measures designed to reduce pollution, ignoring the financial impacts of inaction.

The Oregon Environmental Council[2] evaluated recent data to determine the price of pollution in terms of avoidable health costs for several specific diseases in Oregon that are linked to pollution. Direct costs such as hospitalization and indirect costs such as special needs education were included in our evaluation. Per year cost estimates of specific diseases in Oregon that are attributable to pollution (in proportion to the environmentally triggered incidence of these diseases) include:

- Adult + childhood asthma: $30.0 million
- Childhood asthma: $27.7 million
- Cardiovascular disease: $342.5 million
- Adult + childhood cancer: $131.0 million
- Childhood cancer: $9.2 million
- Lead poisoning: $878.0 million
- Birth defects: $2.8 million
- Neurobehavioral disorders: $187.1 million

If you knew something could be done about this growing problem – if you could do something to save not just money, but also lives – wouldn't you do it? There is a way. Incorporating the health and related costs of environmental contaminants into policy decisions and taking proactive steps to reduce or eliminate exposures to toxic chemicals will create a healthier environment that will lead to healthier Oregonians and ultimately to greatly reduced health care costs for our state.

Annually Oregon spends at least $1.5 billion on preventable diseases caused by pollution.

Protecting environmental public health saves lives and money. Oregon's leaders must develop common sense chemical policies that reduce or eliminate exposures to toxic chemicals and ensure that only the safest chemicals are used in consumer products and in manufacturing processes. Specifically, we urge decision makers, including state legislators and Congress, to:

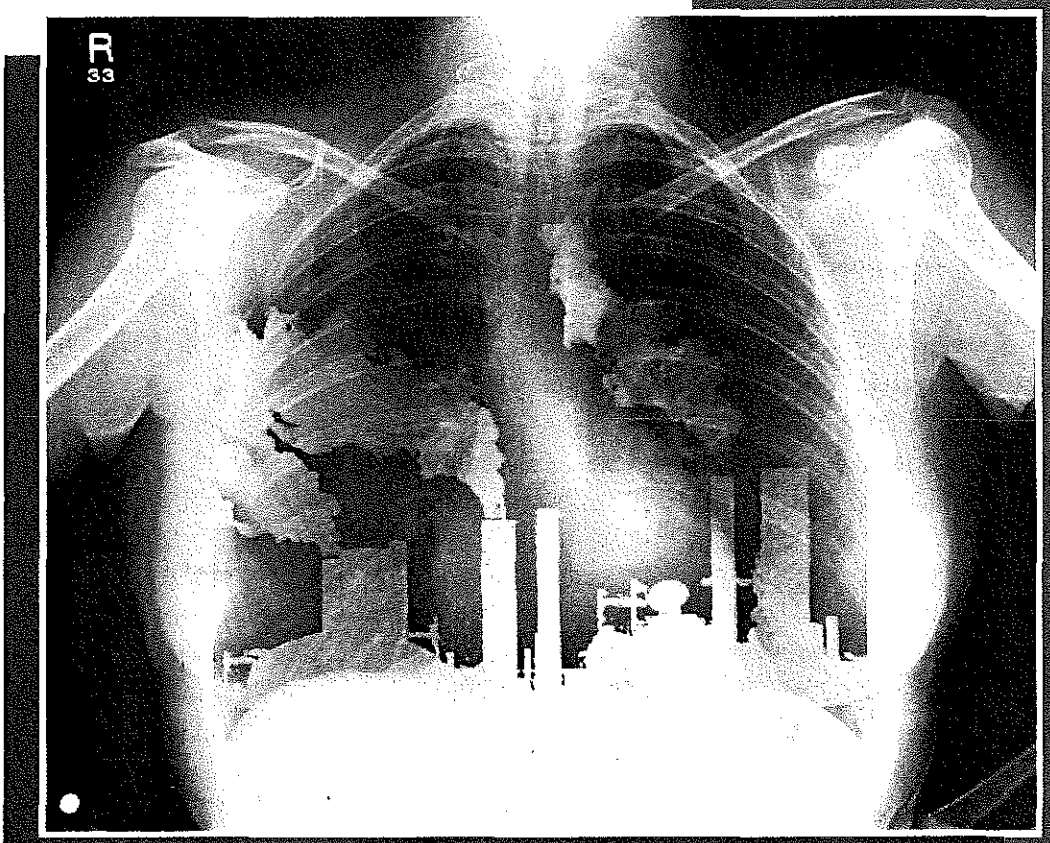
- Require that complete information on chemical ingredients and their toxicity be provided for all products
- Categorize all chemicals into levels of concern, manage these chemicals based on hazards, and substitute chemicals of highest concern with safer alternatives
- Establish policies, practices, and incentives that result in safer alternatives

For more information on this problem and what you can do to help solve it, contact the Oregon Environmental Council at www.oeconline.org

1. U.S. Environmental Protection Agency. (2003, February). *America's Children and the Environment: Measures of Contaminants, Body Burdens, and Illnesses.* Washington, D.C., EPA publication #240-R-03-001.
2. Report methodology was reviewed by Stephanie Bernell, PhD, Associate Professor, College of Health and Human Sciences, Oregon State University.

Item G Handout 4/24/08

Oregon Environmental Council



POLLUTION IN PEOPLE

A Study of Toxic Chemicals in Oregonians

NOVEMBER 2007

Item G Handout
4/24/08

Oregon
ENVIRONMENTAL
COUNCIL

The Price OF POLLUTION

Cost Estimates of Environmentally-Related Disease in Oregon

FEBRUARY 2008

State of Oregon
Department of Environmental Quality Memorandum

Date: April 7, 2008

To: Environmental Quality Commission

From: Dick Pedersen, Interim Director

Subject: Agenda Item H, Informational Item:
Greenhouse Gas Mandatory Reporting Rule Public Hearing
April 24-25, 2008 EQC Meeting

Purpose of Item

Over the past five years, Governor Kulongoski has developed an aggressive agenda to combat global warming, including several initiatives currently underway to reduce greenhouse gas emissions in Oregon. On July 17, 2007 the Governor asked the Environmental Quality Commission (EQC) to consider adopting rules for mandatory greenhouse gas reporting as soon as possible (see Attachment 1). The Department of Environmental Quality (DEQ) issued proposed rules on April 1, 2008, and will accept comments on them through May 16, 2008.

Senate Bill 107 introduced a provision which allows Title V Operating Permit holders to request a hearing before the EQC on any proposed rule that goes beyond federal requirements. In anticipation of receiving such a request and to provide the public with an opportunity to be heard in front of the EQC, DEQ has scheduled a hearing on April 24th at 2:45 pm.

Background

DEQ has proposed greenhouse gas reporting rules to address the most significant emission sources of greenhouse gases in Oregon and to ensure good quality emissions accounting and quantification. The proposed rules are based on recommendations from a DEQ advisory committee (see Attachment 2) and are intended to be consistent with other regional and state emission reporting systems.

The proposed rules require all sources with a Title V Operating Permit and certain sources with an Air Contaminant Discharge Permit register and report greenhouse gas emissions annually (for the previous calendar year) beginning in 2010. The proposed rules also require certain other sources without an Air Quality permit to report their greenhouse gas emissions annually - if they emit 2500 or more metric tons of greenhouse gases per year. This includes some solid waste disposal and wastewater treatment facilities, electric generating units

and electricity and natural gas transmission and distribution systems.

Key Issues

Key issues include:

(a) Are the right sources required to report? The proposed rules are consistent with advisory committee recommendations. The advisory committee discussed whether to include other sources, such as transportation, forestry and agriculture, but did not recommend requiring reporting at this time.

(b) Is the schedule for reporting appropriate? The proposed rules phase in certain sources in the second year, such as landfills and wastewater treatment plants that do not have air quality permits. These sources currently do not have site-specific reporting protocols, but DEQ expects that protocols will be available in the near future. If adequate protocols are not available, DEQ may delay reporting by up to one year.

(c) Are the reporting requirements consistent with other regional and state emission reporting systems? Oregon is a member of the Western Climate Initiative which is developing essential elements of a model reporting rule to ensure the data is collected the same way in all member states. Oregon is also a member of The Climate Registry which will be the repository for the regional greenhouse gas data. DEQ intends to develop reporting guidance and calculation tools to help Oregon emission sources calculate and report greenhouse gas emissions. This guidance will utilize The Climate Registry's General Reporting Protocol, as well as other resources, for emissions quantification, consistent with other regional and state emission reporting systems.

Next Steps

DEQ has scheduled several public hearings throughout the state to accept comments on the proposed rules (see Attachment 4) and statements, as follows:

Pendleton
Thursday, May 1, 6:30 p.m.
Pendleton State Office Building
First floor conference room
700 SE Emigrant Street

Bend
Monday, May 5, 6:30 p.m.
Deschutes County Public Library
601 NW Wall Street

Klamath Falls
Tuesday, May 6, 6:30 p.m.
Klamath County Government Center
Commissioner's Hearing Room
305 Main Street

Medford
Wednesday, May 7, 6:30 p.m.
Community Justice Center
1101 W. Main St.

Eugene
Thursday, May 8, 6:30 p.m.
Eugene Water and Electric Board*
500 East 4th Avenue, Training Center Room

**EWEB furnishes public meeting rooms as a community service and does not sponsor or endorse activities or groups using EWEB's public facilities.*

Corvallis
Friday, May 9, 10:00 a.m.
Corvallis-Benton County Library
645 NW Monroe Avenue

Portland
Thursday, May 15, 6:30 p.m.
DEQ Headquarters
10th floor, Room EQC-A
811 SW Sixth Avenue

EQC Involvement

EQC members and the public are welcome to attend upcoming hearings around the state. DEQ staff will prepare a summary of the public hearings and comments received as part of the rule adoption package. DEQ expects to propose final rules for EQC consideration at its August 21-22, 2008 meeting.

Attachments

A. Letter from Governor Kulongoski to EQC requesting EQC consideration of mandatory greenhouse gas reporting rules (July 17, 2007).
B. Greenhouse Gas Reporting Advisory Committee Recommendations (December 17, 2007)
C. Greenhouse Gas Mandatory Reporting Rules, Relationship to Federal Requirements
D. Proposed Greenhouse Gas Reporting Rules

Available Upon Request

1. Western Climate Initiative MOU and preliminary options papers
2. Greenhouse Gas Reporting Advisory Committee Report (December 2007)
3. Additional Rulemaking Documents

Approved:

Section:

Division:

Report Prepared By: Marianne Fitzgerald
Phone: (503) 229-5946
Email: fitzgerald.marianne@deq.state.or.us

Klamath Falls
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Klamath County Government Center
Commissioner's Hearing Room
305 Main Street

Medford
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3. Additional Rulemaking Documents

THEODORE R. KULONGOSKI
Governor

July 17, 2007

Ms. Lynn Hampton, Chairwoman
Environmental Quality Commission
811 SW Sixth Avenue
Portland, OR 97204

Dear Chairwoman Hampton:

As you know, halting and reversing the damaging effects of climate change is of vital importance to Oregon and our nation's future. I have developed an aggressive agenda to combat global warming over the past five years and we have made significant strides. I applaud you and the Environmental Quality Commission for your leadership in 2006 in adopting clean tailpipe standards, one of the most important steps we have taken to date.

This past session, I signed into law a climate change bill that created a permanent global warming commission and also put into statute state greenhouse gas reduction goals that I had previously announced in 2005. The reduction goals are to arrest increasing emissions by 2010; reduce emissions to 10 percent below 1990 levels by 2020; and reduce emissions to 75 percent below 1990 levels by 2050.

This year, I also helped form the Western Climate Initiative, a landmark partnership with six western states and two Canadian Provinces. The initiative commits members to develop a regional target for reducing greenhouse gases, to participate in The Climate Registry—a voluntary entity-wide greenhouse gas emissions reporting and verification system—and to develop a market-based program to achieve the reductions.

Key to both the new Oregon legislation and the Western Climate Initiative is the development of greenhouse gas reporting requirements for Oregon emitters and utilities that generate emissions in other states to serve Oregon electricity. Several of the other states in the initiative already have begun the process of developing their own greenhouse gas reporting requirements.

STATE CAPITOL, SALEM 97301-4047 (503) 378-3111 FAX (503) 378-4863 TTY (503) 378-4859
WWW.GOVERNOR.OREGON.GOV

I therefore request that the Environmental Quality Commission consider adopting a greenhouse gas reporting rule as soon as possible. I am also requesting that the Department of Energy and the Public Utilities Commission assist you and the Department of Environmental Quality as needed in this effort.

Sincerely,

THEODORE R. KULONGOSKI
Governor

TRK:dv:jb
c: Stephanie Hallock, DEQ
Mike Grainey, DOE
Lee Beyer, PUC Chairman
David Van't Hof, Governor's Office

GHGRAC RECOMMENDATIONS AS MODIFIED AT THE 12/17/07 MEETING including comments received through January 4.
(NOTE: The chapter and page numbers are placeholders since these recommendations will be moved to the front of the final workgroup report, as an executive summary.)

The Greenhouse Gas Reporting Advisory Committee recommended "casting a wide net" of reporters to get a better understanding of which sources emit greenhouse gases in Oregon and to provide context for future policy considerations. The GHGRAC recommended the following for the mandatory greenhouse gas reporting system for Oregon:

1) Reporting from Electric, Gas and Other Energy Sector Sources:
   - For the mandatory greenhouse gas reporting system: the GHGRAC recommended that entities generating or supplying electricity would report as described in the electric utilities subcommittee report (Chapter V, pages 38-44 of this workgroup report). Natural gas utilities, interstate oil and natural gas pipelines, and propane and fuel oil distributors would also report their product sales and natural gas transport volumes, including transmission and other system losses.

   - For the mandatory reporting system rules that ODEQ is developing for EQC consideration in 2008, the GHGRAC recommended the reporting of emissions from sources that are located in Oregon. This would include:
     - Investor-owned utilities that report to consumers through the Public Utility Commission and ODOE (PacifiCorp and PGE);
     - In-state emission sources that are currently permitted under Title V or Air Contaminant Discharge Permits; and
     - In-state emission sources that are not currently permitted under Title V or Air Contaminant Discharge Permits and emit greenhouse gases (such as SF6 emissions from the electrical transmission and distribution system).

     ODEQ should request that out-of-state emission sources that have emissions associated with retail electricity load sales in Oregon, consumer-owned utilities, and Idaho Power, report greenhouse gas emissions voluntarily, until ODEQ authority to mandate reporting from these sources is clarified.

2) Reporting from Sources that are not Energy Sector Sources:
   - For the mandatory greenhouse gas reporting system for Oregon as well as the mandatory reporting system rules that ODEQ is developing for EQC consideration in 2008:
     - All sources that are permitted by ODEQ or LRAPA under Title V or Air Contaminant Discharge Permits would report. The inventory method would follow The Climate Registry protocols or other industry-appropriate protocols, as determined by rule or guidance. Emissions that are currently considered "categorically insignificant" under OAR 340-200-0020(18) (or as may be modified for this rule) would not be required to be reported. Emissions that

are considered "de minimus" under The Climate Registry draft protocols would be reported in accordance with The Climate Registry protocols.
- All sources that are permitted under other ODEQ statutes (such as landfills and wastewater treatment plants) would report if they are permitted by ODEQ or LRAPA under Title V or Air Contaminant Discharge Permits, or if ODEQ or LRAPA estimate that the greenhouse gas emissions may be more than 2500 metric tons of CO2E (not including categorically insignificant emissions).
- All sources would report mobile emissions only on a voluntary basis

3) Greenhouse Gases. The GHGRAC recommended that all sources report all greenhouse gases in terms of carbon dioxide-equivalent (CO2E), so that all greenhouse gases would be included in the emissions report, in accordance with The Climate Registry protocols.

4) Emissions Accounting. The emissions accounting methodology would follow industry-appropriate protocols for Scope 1, Scope 2 and Scope 3 and report all emissions from operations associated with servicing the Oregon retail load. However, emissions accounting would include on-site or off-site mobile emissions on a voluntary basis only. Since reporting from multiple sources would result in double-reporting of some emissions, ODOE, ODEQ and LRAPA will need to avoid double-counting when compiling an Oregon statewide emissions inventory. Recognizing that this recommendation within mandatory reporting rules is different from The Climate Registry draft voluntary reporting protocols, DEQ should recommend to The Climate Registry that its protocols accommodate state mandatory reporting requirements where appropriate.

5) Mobile Source Emissions. The GHGRAC recognized the importance of capturing motor vehicle fleet information, but recognized the complexities of implementing mandatory reporting at this time, particularly for sources that are not currently required to report emissions to ODEQ and LRAPA. The GHGRAC recommended that, in addition to collecting comprehensive data on fuel consumption for inventory and benchmarking purposes, and collecting comprehensive vehicle miles traveled (VMT) and statewide vehicle data for mobile source modeling purposes, ODEQ convene a mobile source reporting task force in September 2008 to make recommendations regarding reporting rules for fleets and other mobile emissions sources, including an emissions threshold, and to make recommendations to the Legislature as needed. The GHGRAC encourages existing sources, including fleets, to report mobile source greenhouse gas emissions voluntarily.

6) Verification. The GHGRAC recommended relying on existing verification methods (e.g. self-certification with periodic inspections by ODEQ and LRAPA inspectors) for the Oregon Greenhouse Gas Mandatory Reporting System. The GHGRAC did not recommend third party verification for the reporting rules that DEQ is developing for EQC consideration in 2008; instead, this issue would be reviewed when more is known about the design of a regional market-based multi-sector mechanism being developed by the Western Climate Initiative partnership.

7) Agriculture and Forestry. The GHGRAC recommended that the scope for the mandatory greenhouse gas reporting system for Oregon address agriculture and forestry in the future. The Committee did not recommend that these sources be required to report under the mandatory reporting rules that ODEQ is developing for EQC consideration in 2008 unless these sources have a Title V or Air Contaminant Discharge Permit. ODEQ and ODOE will discuss agricultural reporting with the Oregon Department of Agriculture (ODA), and discuss forestry reporting with the Oregon Dept. of Forestry (ODF). The GHGRAC recommended that ODEQ and ODOE ask ODA and ODF for existing additional data that would improve the top-down statewide emissions inventory for these categories of sources.

8) Data Submittal. The GHGRAC recommended submitting data to ODEQ and LRAPA rather than The Climate Registry, with an understanding that the data would be submitted in a format that could simply be passed-through to The Climate Registry. Sources would have an option to submit data directly to The Climate Registry if it also registers with ODEQ or LRAPA and the data can be disaggregated for the purposes of meeting Oregon's mandatory reporting rules. Data that is reported voluntarily may be submitted directly to The Climate Registry if this data is also available to ODEQ and LRAPA.

9) Initial Reporting Year. The GHGRAC recommended 2009 as the initial reporting year with initial reports due in 2010, to avoid retroactive reporting of emissions. The GHGRAC also recommended developing incentives to encourage early reporting.

10) Implementation Mechanism. The GHGRAC recommended that the mandatory reporting requirements be implemented without opening up existing permits until the next major modification or renewal.

11) Purpose. The GHGRAC recommendations for designing a mandatory greenhouse gas reporting system for Oregon are to help Oregon improve its understanding of greenhouse gas emissions and assist in future policy development, and not primarily for implementing a market-based multi-sector mechanism such as a load-based cap-and-trade program. The fact that sources are required to report greenhouse gas emissions does not necessarily imply that they should serve as a point of regulation for the purpose of implementing a regional market-based multi-sector mechanism or other emission reduction strategy. ODEQ will review the reporting rules when more is known about the design of a regional or national market-based mechanism and other emission reduction strategies.

12) Budget. The GHGRAC recommended that ODEQ and other implementing agencies seek adequate resources and legislative authority to carry out GHGRAC recommendations for a mandatory greenhouse gas reporting system for Oregon. Because greenhouse gases are produced by all sectors of Oregon's economy, the Advisory Committee recommended that the legislature should consider general funds to support the program.

State of Oregon
DEPARTMENT OF ENVIRONMENTAL QUALITY

Relationship to Federal Requirements

RULE CAPTION

GREENHOUSE GAS MANDATORY REPORTING RULES

The Oregon Department of Environmental Quality (DEQ) is proposing rules that would require sources to report greenhouse gas emissions to DEQ.

Answers to the following questions identify how the proposed rulemaking relates to federal requirements and potential justification for differing from, or adding to, federal requirements. This statement is required by OAR 340-011-0029(1).

1. **Is the proposed rulemaking different from, or in addition to, applicable federal requirements? If so, what are the differences or additions?**

   The proposed rulemaking would impose requirements that are in addition to federal requirements. The proposal would require specified sources to report their greenhouse gas emissions annually to DEQ. There is no comparable federal reporting requirement.

   Congress enacted an appropriations bill in December 2007 that requires EPA to develop federal reporting rules within 18 months. According to the appropriations bill language, these rules will not be completed until at least June 2009 and it is not known what will be required under EPA rules.

   The Clean Air Act Title IV (Acid Rain Program) requires that certain affected sources that are required to obtain an Acid Rain Permit must report carbon dioxide emissions as well as sulfur dioxide and nitrogen oxide emissions to EPA quarterly. The proposed rulemaking requires these sources to report additional greenhouse gas emissions to DEQ.

2. **If the proposal differs from, or is in addition to, applicable federal requirements, explain the reasons for the difference or addition (including as appropriate, the public health, environmental, scientific, economic, technological, administrative or other reasons).**

   Global warming poses a serious threat to the economic well-being, public health, natural resources and environment of Oregon. Governor Kulongoski has developed an aggressive agenda to combat global warming over the past five years, and several initiatives are underway to reduce greenhouse gas emissions in Oregon. Greenhouse gas emissions reporting is necessary to track changes in greenhouse gas emissions and to design greenhouse gas emission reduction initiatives.

The Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report (2007)[1] states with *very high confidence* that the globally averaged net effect of human activities has led to global warming, which has led to increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global average sea level. Other changes include warmer and fewer cold days and nights over most land areas; warmer and more frequent hot days and nights over most land areas; and heavy precipitation events.

The impacts of climate change in the Northwest were summarized in the *Oregon Strategy for Greenhouse Gas Reductions*[2]. This report includes a Scientific Consensus Statement on the Likely Impacts of Climate Change on the Pacific Northwest, signed by 50 Ph.D.-level scientists with expertise on the impacts of climate change in the Pacific Northwest. These scientists predict coastal and river flooding, snow pack declines, lower summer river flows, impacts to farm and forest productivity, energy cost increases, public health effects, and increased pressures on many fish and wildlife species if current greenhouse gas emission trends continue.

3. If the proposal differs from, or is in addition to, applicable federal requirements, did the Department consider alternatives to the difference or addition? If so, describe the alternatives and the reason(s) they were not pursued.

DEQ did consider several alternatives and discussed them with the Greenhouse Gas Reporting Advisory Committee (GHGRAC). Some of these alternatives, and the reasons why they were not pursued, include the following:

(a) Reporting from Electric, Gas and Other Energy Sources: DEQ considered whether to require persons who generated, imported or sold electricity to report emissions generated outside of Oregon for electricity that serves the Oregon retail load, and whether to require consumer-owned utilities to report those emissions, but rejected this option because of potential uncertainties in legal authority. DEQ also considered whether to require persons that distribute heating fuels in Oregon to report emissions from fuels sold, but rejected this option because of potential uncertainties in legal authority. The rules encourage these sources to report voluntarily.

(b) Reporting from Sources that are not Energy Sector Sources: DEQ considered whether to include or exclude emissions from categorically insignificant activities and the proposed rules exclude them based on GHGRAC recommendations and because exclusion of categorically insignificant emissions would exclude many very small businesses from the reporting requirements. DEQ also considered whether to include all sources that are required to obtain Air Contaminant Discharge Permits to report, and the proposed rules narrow down the type of air contamination sources required to report based on the source categories' likelihood of emitting greenhouse gases. DEQ also considered whether to phase in certain source categories, and the proposed rules phase in non-air-permitted sources in the second year.

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[1] IPCC, 2007, Summary for Policymakers. In: *Climate Change 2007: The Physical Science Basis. Contribution of Working Group 1 to the Fourt Assessment Report of the Intergovernmental Panel on Climate Change* [Solomon, S, D. Qin, M. Manning, Z. Chan, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

[2] Governor's Advisory Group on Global Warming, State of Oregon, December 2004

(c) Emissions Accounting. DEQ considered various emissions accounting methodologies and GHGRAC recommended consistency with The Climate Registry (an organization that is establishing reporting protocols to assure consistency in quantification approaches across North America) or other industry-appropriate protocols. DEQ also considered whether persons required to report should report directly to a third party entity (The Climate Registry), but rejected this option because of potential uncertainties in legal authority. The proposed rules follow GHGRAC recommendations for the data to be submitted to DEQ and the Lane Regional Air Protection Agency (LRAPA). Persons required to report may also voluntarily submit data directly to The Climate Registry. DEQ is working with The Climate Registry to make this option available to sources that wish to use it.

(d) Mobile Source Emissions. DEQ and GHGRAC considered whether to require reporting from indirect mobile source emissions, including fleets. The GHGRAC recognized the importance of capturing motor vehicle fleet information, but recognized the complexities of implementing mandatory reporting at this time, particularly for sources that are not currently required to report emissions to DEQ and LRAPA. The GHGRAC recommended that, in addition to collecting comprehensive data on fuel consumption for inventory and benchmarking purposes, and collecting comprehensive vehicle miles traveled and statewide vehicle data for mobile source modeling purposes, DEQ convene a mobile source task force in September 2008 to make recommendations regarding reporting rules for fleets and other mobile emissions sources, including an emissions threshold, and to make recommendations to the Legislature as needed. DEQ followed GHGRAC recommendations and the proposed rules do not require reporting of mobile source emissions, although the proposed rules encourage sources to report these emissions voluntarily.

(e) Verification. DEQ and GHGRAC considered whether persons required to report must have their emissions data verified by a third party, but rejected this option because GHGRAC recommended relying on existing verification methods (e.g. self-certification with periodic inspections by DEQ and LRAPA inspectors).

(f) Agriculture and Forestry. DEQ and GHGRAC considered whether to require persons in the agriculture and forestry sectors to report greenhouse gas emissions. DEQ followed GHGRAC recommendations to not include these sectors at this time, unless the sources are required to obtain a Title V or Air Contaminant Discharge Permit or meet other applicability requirements in the proposed rule. DEQ will follow GHGRAC recommendations to discuss reporting with the Oregon Departments of Agriculture and Forestry, and to ask these agencies for additional data that would improve the top-down statewide emissions inventory for these categories of sources.

DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION 215
GREENHOUSE GAS REPORTING REQUIREMENTS

340-215-0010

Purpose and Scope

(1) The purpose of this division is to establish requirements and procedures for the annual registration and reporting of greenhouse gas emissions to the Department using Department-approved reporting protocols.

(2) Subject to the requirements in this Division and ORS 468A.100 through 468A.180, the Lane Regional Air Protection Agency is designated by the Environmental Quality Commission as the Agency to implement this Division within its area of jurisdiction. The requirements and procedures contained in this Division must be used by the Regional Agency to implement this Division unless the Regional Agency adopts superseding rules that are at least as restrictive as this Division.

Stat. Auth.: ORS 468A.050
Stats. Implemented: ORS 468 & ORS 468A

340-215-0020

Definitions

The definitions in OAR 340-200-0020 and this rule apply to this division. If the same term is defined in this rule and OAR 340-200-0020, the definition in this rule applies to this division.

(1) **"Carbon dioxide"** (CO_2) means the chemical compound containing one atom of carbon and two atoms of oxygen.
(2) **"Carbon dioxide equivalent"** (CO_2e) means the quantity of a given greenhouse gas multiplied by a Global Warming Potential factor provided in Department-approved emissions reporting protocols.
(3) **"Direct emissions"** means emissions from an air contamination source.
(4) **"Global Warming Potential factor"** (GWP) means the radiative forcing impact of one mass-based unit of a given greenhouse gas relative to an equivalent unit of carbon dioxide over a given period of time.
(5) **"Greenhouse gas"** means any gas that contributes to anthropogenic global warming including, but not limited to, carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.
(6) **"Hydrofluorocarbons"** (HFCs) means gaseous chemical compounds containing only hydrogen, carbon and fluorine atoms.

(7) **"Indirect emissions"** means emissions associated with the purchase of electricity, heating, cooling or steam.
(8) **"Methane"** (CH_4) means the chemical compound containing one atom of carbon and four atoms of hydrogen.
(9) **"Metric ton, tonne, or metric tonne"** means one metric tonne (1000 kilograms) or 2204.62 pounds.
(10) **"Mobile Combustion Emissions"** means emissions from the combustion of fuels in mobile combustion sources such as cars, trucks, buses, trains, airplanes, ships, and construction equipment.
(11) **"Nitrous oxide"** (N_2O) means the chemical compound containing two atoms of nitrogen and one atom of oxygen.
(12) **"Perfluorocarbons"** (PFCs) means gaseous chemical compounds containing only carbon and fluorine atoms.
(13) "**Reporting year**" means the calendar year in which emissions required to be reported under this division occurred.
(14) "**Sulfur hexafluoride**" (SF_6) means the chemical compound containing one atom of sulfur and six atoms of fluorine.
(15) "**The Climate Registry**" means the nonprofit corporation by that name incorporated under the District of Columbia Nonprofit Corporation Act with a purpose of creating and operating a North American greenhouse gas emissions registry.

Stat. Auth.: ORS 468A.050
Stats. Implemented: ORS 468 & ORS 468A

340-215-0030

Applicability

(1) The following persons must annually register and report greenhouse gas emissions beginning in 2010 regarding greenhouse gas emitted during the previous calendar year:

(a) Any owner or operator of a source required to obtain a Title V Operating Permit, including those issued under OAR Chapter 340, Division 218;

(b) Any owner or operator of a source required to obtain an Air Contaminant Discharge Permit, including those issued under OAR Chapter 340, Division 216 and that is referred to by one or more of the selected activities and sources listed in Table 1:

Table 1: ACDP Activities and Sources Required to Report Greenhouse Gas Emissions

Table Part	Category Code	Description
A	2	Natural Gas and Propane Fired Boilers (with or without #2 diesel oil back-up (a)) of 10 or more MMBTU but less than 30 MMBTU/hr heat input

Table Part	Category Code	Description
		constructed after June 9, 1989
B	3	Ammonia Manufacturing
B	4	Animal Rendering and Animal Reduction Facilities
B	5	Asphalt Blowing Plants
B	6	Asphalt Felts or Coatings
B	7	Asphaltic Concrete Paving Plants both stationary and portable
B	8	Bakeries, Commercial over 10 tons of VOC emissions per year
B	11	Beet Sugar Manufacturing
B	12	Boilers and other Fuel Burning Equipment over 10 MMBTU/hr heat input, except exclusively Natural Gas and Propane fired units (with or without #2 diesel backup) under 30 MMBTU/hr heat input
B	13	Building paper and Buildingboard Mills
B	14	Calcium Carbide Manufacturing
B	16	Cement Manufacturing
B	18	Charcoal Manufacturing
B	21	Coffee Roasting (roasting 30 or more tons per year)
B	25	Electrical Power Generation from combustion (excluding units used exclusively as emergency generators)
B	30	Galvanizing and Pipe Coating (except galvanizing operations that use less than 100 tons of zinc/yr)
B	31	*** Gasoline Plants and Bulk Terminals subject to OAR 340, Division 232
B	33	Glass and Glass Container Manufacturing
B	36	Gray iron and steel foundries, malleable iron foundries, steel investment foundries, steel foundries 100 or more tons/yr metal charged (not elsewhere identified)
B	37	Gypsum Products Manufacturing
B	38	Hardboard Manufacturing (including fiberboard)
B	39	Incinerators with two or more ton per day capacity
B	40	Lime Manufacturing
B	44	Marine Vessel Petroleum Loading and Unloading
B	48	Natural Gas and Oil Production and Processing and associated fuel burning equipment
B	49	Nitric Acid Manufacturing
B	50	Non-Ferrous Metal Foundries 100 or more tons/yr of metal charged
B	51	Organic or Inorganic Industrial Chemical Manufacturing and Distribution with ½ or more tons per year emissions of any one criteria pollutant (sources in this category with less than ½ ton/yr of each criteria pollutant are not required to have an ACDP)
B	53	Particleboard Manufacturing (including strandboard, flakeboard, and waferboard)
B	56	Petroleum Refining and Re-refining of Lubricating Oils and Greases including Asphalt Production by Distillation and the reprocessing of oils and/or solvents for fuels
B	57	Plywood Manufacturing and/or Veneer Drying
B	58	Prepared feeds for animals and fowl and associated grain elevators 10,000 or more tons per year throughput
B	59	Primary Smelting and/or Refining of Ferrous and Non-Ferrous Metals

Table Part	Category Code	Description
B	60	Pulp, Paper and Paperboard Mills
B	63	Secondary Smelting and/or Refining of Ferrous and Non-Ferrous Metals
B	65	Sewage Treatment Facilities employing internal combustion for digester gasses
B	70	Synthetic Resin Manufacturing

Notes:
*** Portland AQMA, Medford-Ashland AQMA or Salem SKATS only
(a) "back-up" means less than 10,000 gallons of fuel per year

(c) Any owner or operator of a source required to obtain an Air Contaminant Discharge Permit, including those issued under OAR Chapter 340, Division 216 that is referred to by the activities and sources listed in Table 1 Part B number 75 of OAR Chapter 340, Division 216, and by the Standard Industrial Classification (SIC) codes in Table 2:

Table 2: Activities and Sources with SIC Codes Required to Report Greenhouse Gas Emissions

SIC	Description
2041	Flour and Other Grain Mill Products
2096	Potato Chips, Corn Chips, and Similar Snacks
2421	Sawmills and Planing Mills, General
2499	Wood Products, Not Elsewhere Classified
2752	Commercial Printing, Lithographic
2816	Inorganic Pigments
3251	Brick and Structural Clay Tile
3296	Mineral Wool
3297	Nonclay Refactories
3559	Special Industry Machinery , Not Elsewhere Classified
3672	Printed Circuit Boards
3674	Semiconductors and Related Devices
4961	Steam and Air Conditioning Supply
5093	Scrap and Waste Materials
9711	National Security (NAICS 928110)

(2) Except as provided in subsection (5), any owner or operator of a source listed in this section that emits 2500 metric tons or more of carbon dioxide equivalent per year and is not otherwise subject to registration and reporting under subsections (1) (a), (b) or (c) of this section must annually register and report greenhouse gas emissions beginning in 2011 regarding greenhouse gases emitted during the previous calendar year:

(a) solid waste disposal facilities required to obtain a permit issued under OAR Chapter 340, Divisions 93 through 96,
(b) wastewater treatment facilities required to obtain an individual National Pollutant Discharge Elimination System permit issued under OAR Chapter 340, Division 45,

(c) electric generating units, and
(d) electricity and natural gas transmission and distribution systems (concerning transmission and distribution losses).

(3) Any owner or operator of a source required to register and report greenhouse gas emissions under this division may voluntarily include additional emissions from the previous calendar year not required under this division, including but not limited to mobile combustion and indirect emissions.

(4) Any owner or operator of a source not required to register and report greenhouse gas emissions under this division may do so voluntarily for emissions from the previous calendar year.

(5) The Department may delay the initial reporting year for sources required to report under subsection (2) by up to one year upon determining that the additional time is needed to develop adequate reporting protocols.

Stat. Auth.: ORS 468A.050
Stats. Implemented: ORS 468 & ORS 468A

340-215-0040

Greenhouse Gas Registration and Reporting Requirements:

(1) Any owner or operator required to register and report under OAR 340-215-0030(1) and (2) must report direct emissions of carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride greenhouse gases, excluding emissions from categorically insignificant activities.

(2) Any person required to report under OAR 340-215-0030 must submit an annual greenhouse gas emissions report to the Department as specified below:

(a) Any owner or operator of a source required to register and report under OAR 340-215-0030(1) must register and report regarding greenhouse gases emitted during the previous calendar year by the due date for the annual report for non-greenhouse gas emissions specified in the source's Title V Operating Permit or Air Contaminant Discharge Permit, or March 15th of each year, if no due date is otherwise specified in the permit; and

(b) Any person required to register and report under OAR 340-215-0030(2) must register and report by March 15th of each year regarding greenhouse gases emitted during the previous calendar year.

(c) Any person voluntarily including additional emissions pursuant to OAR 340-215-0030(3) must include those emissions with their report pursuant to subsections (2)(a) and (b).

(d) Any person voluntarily registering and reporting pursuant to OAR 340-215-0030(4) must register and report regarding greenhouse gases emitted during the previous calendar year by March 15th of each year.

(3) Registration and reports must be submitted on paper or electronic forms issued by the Department, which will require the following information:

(a) source information such as source name, address, contact person, phone number, and permit number, if applicable;
(b) emissions of the applicable greenhouse gases identified in subsection (1) of this section, pursuant to Department-approved reporting protocols, including estimated annual emissions, activity data, emission factors, conversion factors, global warming potential factor, and the emissions calculation methods used to determine emissions; and
(c) a signed statement certifying that the report is accurate to the best of the certifying individual's knowledge.

(4) Any person required to report under this section must retain all greenhouse gas reporting records for, at a minimum, 5 years.

Stat. Auth.: ORS 468A.050
Stats. Implemented: ORS 468 & ORS 468A

State of Oregon
Department of Environmental Quality Memorandum

Date: April 7, 2008

To: Environmental Quality Commission

From: Dick Pedersen, Acting Director

Subject: Agenda Item I, Rule Adoption: Amend Recycled Water Use Rules, OAR Chapter 340, Division 55 and Division 41 [section 0009(5)]
April 24-25, 2008 EQC Meeting

Why this is Important

The proposed rule revisions allow municipal wastewater treatment facilities more opportunities to provide recycled water for beneficial purposes such as irrigation as an alternative to discharging treated wastewater to surface waters. The proposed rules also address the recommendation for rulemaking identified by the Urban Water Reuse Task Force that met in 2004 to address Senate Bill (SB) 820 from the 2003 Legislative Session.

Department Recommendation/ EQC Motion

The Department of Environmental Quality (DEQ) recommends that the Environmental Quality Commission (EQC) adopt the proposed recycled water use rule revisions to OAR Chapter 340, Divisions 55 and 41 [section 0009(5)] as presented in attachments A.1 and A.2.

Background and Need for Rulemaking

Since the recycled water rules were initially adopted by the EQC in August 1990, it has been the policy of the EQC and DEQ to encourage the use of recycled water while assuring that Oregonians' health and the state's environment are protected. These rules provide new options for using recycled water, but do not mandate its use. DEQ needs to revise the current rules to reflect state policy on environmental sustainability, to clarify program requirements and policies, and to address new uses for recycled water and new wastewater treatment technologies.

Recycled water is treated water released from a municipal wastewater treatment facility and is regulated under DEQ's water quality program. Recycled water can be used for a specific beneficial purpose other than drinking water, and can be provided for use only if authorized under a National Pollutant Discharge Elimination System (NPDES) or Water Pollution Control Facilities (WPCF) water quality permit. Recycled water is used in the state mostly for irrigation of pasture lands and golf courses. Urban and commercial recycled water use efforts are uncommon due to less demand and the costs associated with meeting other regulations, such as plumbing codes.

In 2003, the Oregon Legislature Assembly passed SB 820 that required DEQ to work with interested parties to develop a report on opportunities and barriers

associated with wastewater reuse in urban areas. DEQ convened the Urban Water Reuse Task Force to complete this work, and one of the task force's primary recommendations was for DEQ to update the recycled water use rules in OAR Chapter 340, Division 55 to reflect changes in policies and technologies pertaining to recycled water use.

Effect of Rule

The proposed rule revisions:

- categorize recycled water based on the treatment level and pathogen limits by different classes, A to D, with Class A requiring the highest level of treatment;
- clarify requirements for each recycled water class pertaining to the treatment and use, monitoring, setback distances, access and exposure, and site management;
- clarify who has responsibility for compliance with the rules;
- allow for innovative and improved treatment technologies;
- expand the list of beneficial purposes for which recycled water may be used;
- clarify the requirements for a recycled water use plan;
- clarify the requirements for coordination with the Oregon Department of Human Services (DHS) and the Oregon Water Resources Department (WRD);
- remove potential regulatory barriers and language that unduly stigmatizes recycled water; and
- update the bacteria rule language pertaining to effluent limitations for recycled water in OAR 340-041 0009(5).

Commission Authority

The EQC has authority to take this action under ORS 468.020, 468B.010, and 468B.015.

Stakeholder Involvement

DEQ convened the Water Reuse Task Force that provided recommendations to DEQ on proposed rule revisions. The task force met monthly from May 2, 2006 to May 1, 2007. A list of task force members is provided in attachment C. The task force supports the proposed rule revisions with a few exceptions as identified in the key issues below.

Public Comment

DEQ took public comment from July 16, 2007 to August 31, 2007, including public hearings in Medford, Bend, Portland and Pendleton. Results of public input are provided in attachments B and D.

Key Issues

- *Responsibility for compliance with the rules*
  The Water Reuse Task Force identified the rule provision requiring a contract between a wastewater treatment facility and end user as a key issue. DEQ proposes to delete this provision due to legal questions about DEQ's authority to oversee contracts. The proposed rules clarify responsibility for compliance and state that any person having control over the treatment and/or distribution

of recycled water, and any user of recycled water must comply with the requirements of the rules.

- *"Technology" requirement for Class A criteria*
  Class A is the highest quality of recycled water, with criteria in the rules for turbidity and pathogens. The majority of the Water Reuse Task Force members disagree with DEQ's decision to specify in rule the treatment process for meeting turbidity criteria. Specifically, DEQ would require wastewater treatment facilities to filter the wastewater before disinfecting it. Based on research, DEQ believes this requirement is necessary to ensure effective treatment of pathogens for Class A recycled water as the uses for Class A are less restrictive. The rule does allow an alternative treatment process if approved in writing by DEQ.

- *Beneficial purposes*
  The proposed rules expand the "outright" beneficial purposes for commercial and industrial end uses. The rules continue to allow DEQ to authorize other end uses and in doing so DEQ will confer with the Oregon Department of Human Services.

- *Recycled Water Use Plan*
  A wastewater treatment system owner may not distribute or provide recycled water for use until a recycled water use plan is approved in writing by DEQ. The proposed revisions clarify confusion about what elements are required in a plan and the regulatory process for plan approval, including what other state agencies need to be consulted and for what purposes.

- *Regulatory barriers for aquifer storage and recovery and wetlands*
  Through the rulemaking process, DEQ and the Water Reuse Task Force identified several regulatory barriers that restrict the use of recycled water for aquifer storage and recovery, and wetlands restoration and enhancement. DEQ's rules in OAR 340-044 for underground injection control (UIC) prohibit the injection of municipal wastewater directly into an underground source of drinking water. If injection were allowed, the water would have to comply with drinking water standards, and meet background water quality levels or a concentration limit variance. The need to revise the UIC rules has been identified to address overall UIC program implementation issues and recent legislation on fee authorization.

  The statutory definition for "waters of the state" limits the use of recycled water to restore and enhance wetlands and for stream augmentation under these rules. Recycled water entering these bodies of water is considered a

discharge requiring a NPDES permit. Constructed wetlands used and managed for wastewater treatment are not considered waters of the state and are exempt from the recycled water use rules.

- *Gray water*
  Gray water is household sewage other than human body wastes, such as bath water and kitchen and laundry wastewater. Due to overlapping regulations with other state and local agencies, and the scope of the issue, DEQ did not address gray water in this rulemaking. DEQ determined that further policy and technical work are needed to evaluate the benefits and potential human health risks with gray water reuse in urban and rural environments.

  DEQ's onsite wastewater treatment rules currently prohibit the use of gray water for homes that rely on septic systems, based on potential risks to human health. Therefore, DEQ would have to amend the onsite wastewater treatment rules. DEQ is planning to revisit some needed changes to the onsite wastewater treatment system rules during the summer 2008 and gray water is one of the issues identified. For urban uses where gray water is connected to a public sewerage system, the use of gray water would require amending the state plumbing code and treating the water to meet specified criteria for the particular use under an NPDES or WPCF water quality permit.

Next Steps

If adopted at the April 24-25, 2008, Commission meeting, the rules become effective upon filing with the Secretary of State's Office. After filing the rules, DEQ staff will begin developing an Internal Management Directive (IMD) to provide general program guidance and direction for DEQ staff on the implementation of these rules. External outreach will include DEQ participation in meetings, workshops, and conferences conducted by stakeholders and other interested parties. DEQ will also provide internal training for regional water quality program staff.

The Implementation Plan for Recycled Water Use Rules outlines the IMD development process (available upon request). DEQ regional water quality program staff, water quality program management, an external technical advisory committee, and state agencies identified in the Memorandum of Understanding under the Governor's Executive Order on Water Reuse will be involved during the process. The target date for adopting the IMD is April 2009.

DEQ's headquarters water reuse program coordinator is responsible for coordinating rule implementation and IMD development. DEQ will not need additional resources to implement the rule revisions.

Attachments

A. Redlined Versions of Proposed Rule Revisions
A.1 Division 55
A.2 Division 41, section 0009(5) of the bacteria rule pertaining to effluent limitations for recycled water
B. Summary of Public Comments and Agency Responses
C. Water Reuse Task Force Membership List
D. Presiding Officer's Reports on Public Hearings
E. Relationship to Federal Requirements Questions
F. Statement of Need and Fiscal and Economic Impact
G. Land Use Evaluation Statement

Available Upon Request

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

Approved:

Section: _____

Division: _____

Report Prepared By: Judy Johndohl

Phone: (503) 229-6896

DEPARTMENT OF ENVIRONMENTAL QUALITY

DIVISION 55
~~REGULATIONS PERTAINING TO THE USE OF RECLAIMED~~RECYCLED WATER USE~~(TREATED EFFLUENT) FROM SEWAGE TREATMENT PLANTS~~

340-055-0005

Purpose

~~The purpose of t~~These rules (OAR 340-055-0005 to 340-055-0030) ~~is to protect the environment and public health in Oregon by prescribing the methods, procedures and restrictions required~~ prescribe requirements for the use of recycled water for beneficial purposes ~~of reclaimed waters~~. The purpose of this division is to protect the environment and public health in the State of Oregon.

Stat. Auth.: ORS 468.020, ORS 468.705 & ORS 468.710
Stats. Implemented: ORS 468B.015 & ORS 468B.020
Hist.: DEQ 32-1990, f. & cert. ef. 8-15-90

340-055-0007

Policy

It is the policy of the Environmental Quality Commission to encourage the use of ~~reclaimed~~recycled waters for domestic, agricultural, industrial, recreational, and other beneficial purposes ~~using methods that assure~~ in a manner which protects public~~that the~~ health ~~of Oregonians~~ and the environment of the state ~~are protected~~. ~~Proper~~The use of ~~reclaimed~~recycled waters for beneficial purposes will improve~~enhances~~ water quality by reducing discharges of treated effluents to surface waters, reduce the demand on drinking water sources for uses not requiring potable water, and may~~by~~ conserve~~ing~~ stream flows ~~through~~ by reduc~~inged~~ withdrawal ~~demand~~ for ~~withdrawals for~~ out-of-stream use.

Stat. Auth.: ORS 468.020, ORS 468.705 & ORS 468.710
Stats. Implemented: ORS 468B.015
Hist.: DEQ 32-1990, f. & cert. ef. 8-15-90

340-055-0010

Definitions

The following definitions apply to this division of rules:

(1) "Artificial Groundwater Recharge" means the intentional addition of water diverted from another source to a groundwater reservoir.

(2~~1~~6) "Beneficial Purposes" means a purpose where ~~the resource values of the reclaimed~~ recycled waters~~, such as but not limited to its nutrient or moisture value, are~~ is utilized for a resource value, such as nutrient content or moisture, to increase ~~enhanced~~ productivity or to conserve other sources of water ~~conservation by the user~~.

~~(11) "Biological Treatment" means methods of sewage treatment in which bacterial or biochemical action is promoted as a means of producing an oxidized wastewater.~~

~~(12) "Clarification" means the removal by gravity of settleable solids remaining in the effluent after the biological treatment or after flocculation as part of the coagulation process.~~

~~(13) "Coagulation" means a treatment process applied to oxidized wastewater in which colloidal and finely divided suspended matter have been destabilized and agglomerated by the addition of suitable floc-forming chemicals or by an equally effective method.~~

~~(21) "Controlled Use" means a use of reclaimed water for which the sewage treatment plant owner, either directly or through a written contract, has reasonable knowledge of the use and fate of the reclaimed water and is able to discontinue the use of the reclaimed water if it is determined that the requirements of the rules and the permit authorizing use of reclaimed water are not being met.~~

(3) "Department" means the Oregon Department of Environmental Quality.

(4~~1~~5) "Disinfected~~ion~~ Wastewater" means wastewater that has been treated ~~the pathogenic organisms have been destroyed or reduced to very low levels~~ by a chemical, physical or biological process and meets the criteria if applicable to its classification for use as recycled water~~means. Disinfection is deemed to have occurred when total coliform and (where appropriate) turbidity limitations have been continuously met for the specific uses cited in Table 1.~~

(5) "Filtered Wastewater" means an oxidized wastewater that meets the criteria defined in OAR 340-055-0012(7)(c).

~~(14) "Filtration" means a treatment process applied to oxidized, coagulated, clarified wastewater which has been passed through natural undisturbed soils or filter media, such as sand or diatomaceous earth, so that the turbidity as determined by an approved laboratory method does not exceed an average operating turbidity of 2 turbidity units and does not exceed 5 turbidity units more than 5 percent of the time during any 24-hour period.~~

(6) "Human Consumption" means water used for drinking, personal or oral hygiene, bathing, showering, cooking, or dishwashing.

~~(2) "Industrial Wastewater" 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~~19~~) "Landscape Impoundment" ~~is~~means a body of ~~reclaimed~~ water ~~which is~~ used for aesthetic purposes ~~enjoyment~~ or ~~which~~ otherwise ~~serves a~~ function that does not ~~intended to~~ include public contact through ~~such~~ activities such as boating, fishing, or body-contact recreation. Landscape impoundments include, but are not limited to, golf course water ponds or non-residential landscape ponds. ~~Landscape impoundments constructed and operated pursuant to these rules shall be considered part of a sewage treatment system and not waters of the state for water quality purposes.~~

(~~1~~8) "Nonrestricted Recreational Impoundment" means a constructed body of ~~reclaimed~~ water ~~in~~ for which there are no limitations ~~are imposed~~ on body-contact water recreation activities. Nonrestricted recreational impoundments include, but are not limited to, recreational lakes, water features accessible to the public, and public fishing ponds. ~~Nonrestricted impoundments constructed and operated pursuant to these rules shall be considered part of a sewage treatment system and not waters of the state for water quality purposes.~~

(9~~6~~) "NPDES Permit" means a National Pollutant Discharge Elimination System~~waste discharge~~ permit as defined in O~~regon Administrative R ules C~~chapter 340, D~~d~~ivision 45.

(10) "Oxidized Wastewater" means a treated wastewater ~~sewage~~ in which the organic matter is~~has been~~ stabilized~~, is~~ and nonputrescible, and which contains dissolved oxygen.

(11~~5~~) "Person" means the United States and agencies thereof, any state, any individual, public or private corporation, political subdivision, governmental agency, municipality, copartnership, association, firm, trust estate, or any other legal entity ~~whatever~~.

~~(20) "Potable Water Supply System" means a water supply system used to provide water for human consumption.~~

(12~~2~~) "Processed Food Crops" means those crops that ~~which~~ undergo thermoprocessing sufficient to kill spores of *Clostridium botulinum*. ~~Washing, pickling, fermenting, milling or chemical treatments are not sufficient.~~

(13~~8~~) "Recycled Water" ~~"Reclaimed Water"~~ means treated effluent from a wastewater ~~sewage~~ treatment system which~~,~~ as a result of treatment~~,~~ is suitable for a direct beneficial purpose~~, or a controlled use that could not otherwise occur.~~ Recycled water includes reclaimed water as defined in ORS 537.131.

(14~~7~~) "Restricted Recreational Impoundment" means a constructed body of ~~reclaimed~~ water ~~in which recreation~~ that is limited to fishing, boating, and other non-body-contact water recreation activities. ~~Restricted impoundments constructed and operated pursuant to these rules shall be considered part of a sewage treatment system and not waters of the state for water quality purposes.~~

~~(4) "Sewage Treatment System Owner" is any person who owns a sewage treatment system that provides reclaimed water for use.~~

(15) "Sprinkler Irrigation" means the act of applying water by means of perforated pipes or nozzles operated under pressure so as to form a spray pattern.

~~(9) "User" means any person who uses reclaimed water.~~

(16) "Wastewater" or "Sewage" means the water-carried human or animal wastes~~, including kitchen, bath and laundry waste~~ from residences, buildings, industrial ~~and commercial~~ establishments~~,~~ or other places, together with such groundwater infiltration~~,~~ and surface waters~~, or industrial wastewater~~ as may be present. The admixture with sewage of wastes or industrial wastes shall also be considered "wastewater" within the meaning of this division.

(17~~3~~) "Wastewater Treatment System" or "Sewage Treatment System" means any approved facility or equipment used to alter the quality of wastewater ~~sewage~~ by physical, chemical or biological means or a combination thereof ~~such~~ that reduces the tendency of ~~said~~the wastewater to ~~cause any~~ degrad~~eation in~~ water quality or other environmental conditions~~, is reduced.~~

(18) "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 which do not combine or effect a junction with natural surface or underground waters) that are located wholly or partially within or bordering the state or within its jurisdiction.

(19~~7~~) "WPCF Permit" means a Water Pollution Control Facilities permit as defined in OAR ~~C~~chapter 340, ~~D~~division 45.

(20) "Wetlands" means those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

~~[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 468.020, ORS 468.705 & ORS 468.710
Stats. Implemented: ORS 468B.005, ORS 468B.030 & ORS 468B.050
Hist.: DEQ 32-1990, f. & cert. ef. 8-15-90

340-055-0012

Recycled Water Quality Standards and Requirements

(1) Any person having control over the treatment or distribution or both of recycled water may distribute recycled water only for the beneficial purposes described in this rule, and must take all reasonable steps to ensure that the recycled water is used only in accordance with the standards and requirements of the rules of this division.

(2) Any person who uses recycled water may use recycled water only for the beneficial purposes described in this rule, and must comply with the standards and requirements of this rule and the rules of this division.

(3) The following requirements apply to nondisinfected recycled water.

(a) Beneficial Purposes. Nondisinfected recycled water may be used only for the following beneficial purposes and only if the rules of this division are met:

(A) Irrigation for growing fodder, fiber, seed crops not intended for human ingestion, or commercial timber; and

(B) Any beneficial purpose authorized in writing by the department pursuant to OAR 340-055-0016(6).

(b) Treatment. Nondisinfected recycled water must be an oxidized wastewater.

(c) Criteria. There are no disinfection criteria for nondisinfected recycled water.

(d) Monitoring. Monitoring must be in accordance with the wastewater treatment system owner's NPDES or WPCF permit.

(e) Setback Distances. There must be a minimum of 150 feet from the edge of the irrigation site to a water supply source used for human consumption. Other site specific setback distances for irrigation necessary to protect public health and the environment must be established in the recycled water use plan and must be met when irrigating.

(f) Access and Exposure. Public access to the irrigation site must be prevented.

(g) Site Management.

(A) Irrigation with recycled water is prohibited for 30 days before harvesting.

(B) Sprinkler irrigation is prohibited unless authorized in advance and in writing by the department based on demonstration that public health and the environment will be adequately protected from aerosols.

(4) The following requirements apply to Class D recycled water.

(a) Beneficial Purposes. Class D recycled water may be used only for the following beneficial purposes and only if the rules of this division are met:

(A) Any beneficial purpose defined in subsection (3)(a) of this rule;

(B) Irrigation of firewood, ornamental nursery stock, Christmas trees, sod, or pasture for animals; and

(C) Any beneficial purpose authorized in writing by the department pursuant to OAR 340-055-0016(6).

(b) Treatment. Class D recycled water must be an oxidized and disinfected wastewater that meets the numeric criteria in subsection (c) of this section.

(c) Criteria. Class D recycled water must not exceed a 30-day log mean of 126 *E. coli* organisms per 100 milliliters and 406 *E. coli* organisms per 100 milliliters in any single sample.

(d) Monitoring. Monitoring for *E. coli* organisms must occur once per week at a minimum.

(e) Setback Distances.

(A) Where an irrigation method is used to apply recycled water directly to the soil, there must be a minimum of 10 feet from the edge of the site used for irrigation and the site property line.

(B) Where sprinkler irrigation is used, there must be a minimum of 100 feet from the edge of the site used for irrigation and the site property line.

(C) There must be a minimum of 100 feet from the edge of an irrigation site to a water supply source used for human consumption.

(D) Where sprinkler irrigation is used, recycled water must not be sprayed within 70 feet of an area where food is prepared or served, or where a drinking fountain is located.

(f) Access and Exposure.

(A) Animals used for production of milk must be restricted from direct contact with the recycled water.

(B) When using recycled water for irrigation of sod, ornamental nursery stock, or Christmas trees, the personnel at the use area must be notified that the water used is recycled water and is not safe for drinking. The recycled water use plan must specify how notification will be provided.

(g) Site Management.

(A) When irrigating, signs must be posted around the perimeter of the irrigation site stating recycled water is used and is not safe for drinking.

(B) Irrigation of fodder, fiber, seed crops not intended for human ingestion, sod, commercial timber, firewood, ornamental nursery stock, or Christmas trees is prohibited for three days before harvesting.

(5) The following requirements apply to Class C recycled water.

(a) Beneficial Purposes. Class C recycled water may be used only for the following beneficial purposes and only if the rules of this division are met:

(A) Any beneficial purpose defined in subsection (4)(a) of this rule;

(B) Irrigation of processed food crops;

(C) Irrigation of orchards or vineyards if an irrigation method is used to apply recycled water directly to the soil;

(D) Landscape irrigation of golf courses, cemeteries, highway medians, or industrial or business campuses;

(E) Industrial, commercial, or construction uses limited to: industrial cooling, rock crushing, aggregate washing, mixing concrete, dust control, nonstructural fire fighting using aircraft, street sweeping, or sanitary sewer flushing;

(F) Water supply source for landscape impoundments; and

(G) Any beneficial purpose authorized in writing by the department pursuant to OAR 340-055-0016(6).

(b) Treatment. Class C recycled water must be an oxidized and disinfected wastewater that meets the numeric criteria in subsection (c) of this section.

(c) Criteria. Class C recycled water must not exceed a median of 23 total coliform organisms per 100 milliliters, based on results of the last seven days that analyses have been completed, and 240 total coliform organisms per 100 milliliters in any two consecutive samples.

(d) Monitoring. Monitoring for total coliform organisms must occur once per week at a minimum.

(e) Setback Distances.

(A) Where an irrigation method is used to apply recycled water directly to the soil, there must be a minimum of 10 feet from the edge of the site used for irrigation and the site property line.

(B) Where sprinkler irrigation is used, there must be a minimum of 70 feet from the edge of the site used for irrigation and the site property line.

(C) There must be a minimum of 100 feet from the edge of an irrigation site to a water supply source used for human consumption.

(D) Where sprinkler irrigation is used, recycled water must not be sprayed within 70 feet of an area where food is being prepared or served, or where a drinking fountain is located.

(f) Access and Exposure.

(A) When irrigating for a beneficial purpose defined in subsection (4)(a) of this rule, the access and exposure requirements defined in subsection (4)(f) of this rule must be met.

(B) During irrigation of a golf course, a cemetery, a highway median, or an industrial or business campus, the public must be restricted from direct contact with the recycled water.

(C) If aerosols are generated when using recycled water for an industrial, commercial, or construction purpose, the aerosols must not create a public health hazard.

(D) When using recycled water for an agricultural or horticultural purpose where sprinkler irrigation is used, or an industrial, commercial, or construction purpose, the public and personnel at the use area must be notified that the water used is recycled water and is not safe for drinking. The recycled water use plan must specify how notification will be provided.

(g) Site Management.

(A) When irrigating for a beneficial purpose defined in subsection (4)(a) of this rule, the site management requirements defined in subsection (4)(g) of this rule must be met.

(B) When using recycled water for a landscape impoundment or for irrigating a golf course, cemetery, highway median, or industrial or business campus, signs must be posted at the use area and be visible to the public. The signs must state that recycled water is used and is not safe for drinking.

(C) Irrigation of processed food crops is prohibited for three days before harvesting.

(D) When irrigating an orchard or vineyard, the edible portion of the crop must not contact the ground, and fruit or nuts may not be harvested off the ground.

(E) When using recycled water for a landscape impoundment, aerators or decorative fixtures that may generate aerosols are allowed only if authorized in writing by the department.

(6) The following requirements apply to Class B recycled water.

(a) Beneficial Purposes. Class B recycled water may be used only for the following beneficial purposes and only if the rules of this division are met:

(A) Any beneficial purpose defined in subsection (5)(a) of this rule;

(B) Stand-alone fire suppression systems in commercial and residential buildings, non-residential toilet or urinal flushing, or floor drain trap priming;

(C) Water supply source for restricted recreational impoundments; and

(D) Any beneficial purpose authorized in writing by the department pursuant to OAR 340-055-0016(6).

(b) Treatment. Class B recycled water must be an oxidized and disinfected wastewater that meets the numeric criteria in subsection (c) of this section.

(c) Criteria. Class B recycled water must not exceed a median of 2.2 total coliform organisms per 100 milliliters, based on results of the last seven days that analyses have been completed, and 23 total coliform organisms per 100 milliliters in any single sample.

(d) Monitoring. Monitoring for total coliform organisms must occur three times per week at a minimum.

(e) Setback Distances.

(A) Where an irrigation method is used to apply recycled water directly to the soil, there are no setback requirements.

(B) Where sprinkler irrigation is used, there must be a minimum of 10 feet from the edge of the site used for irrigation and the site property line.

(C) There must be a minimum of 50 feet from the edge of the irrigation site to a water supply source used for human consumption.

(D) Where sprinkler irrigation is used, recycled water must not be sprayed within 10 feet of an area where food is being prepared or served, or where a drinking fountain is located.

(f) Access and Exposure.

(A) During irrigation of a golf course, the public must be restricted from direct contact with the recycled water.

(B) If aerosols are generated when using recycled water for an industrial, commercial, or construction purpose, the aerosols must not create a public health hazard.

(C) When using recycled water for an agricultural or horticultural purpose where sprinkler irrigation is used, or an industrial, commercial, or construction purpose, the public and personnel at the use area must be notified that the water used is recycled water and is not safe for drinking. The recycled water use plan must specify how notification will be provided.

(g) Site Management.

(A) When irrigating for a beneficial purpose defined in subsection (4)(a) of this rule, the site management requirements defined in subsection (4)(g) of this rule must be met.

(B) When using recycled water for a landscape impoundment or for irrigating a golf course, cemetery, highway median, or industrial or business campus, signs must be posted at the use area and be visible to the public. The signs must state recycled water is used and is not safe for drinking.

(C) Irrigation of processed food crops is prohibited for three days before harvesting.

(D) When irrigating an orchard or vineyard, the edible portion of the crop must not contact the ground, and fruit or nuts may not be harvested off the ground.

(7) The following requirements apply to Class A recycled water.

(a) Beneficial Purposes. Class A recycled water may be used only for the following beneficial purposes and only if the rules of this division are met:

(A) Any beneficial purpose defined in subsection (6)(a) of this rule;

(B) Irrigation for any agricultural or horticultural use;

(C) Landscape irrigation of parks, playgrounds, school yards, residential landscapes, or other landscapes accessible to the public;

(D) Commercial car washing or fountains when the water is not intended for human consumption;

(E) Water supply source for nonrestricted recreational impoundments;

(F) Artificial groundwater recharge by surface infiltration methods or by subsurface injection in accordance with OAR chapter 340, division 44. Direct injection into an underground source of drinking water is prohibited unless allowed by OAR chapter 340, division 44; and

(G) Any beneficial purpose authorized in writing by the department pursuant to OAR 340-055-0016(6).

(b) Treatment. Class A recycled water must be an oxidized, filtered and disinfected wastewater that meets the numeric criteria in subsection (c) of this section are met.

(c) Criteria. Class A recycled water must not exceed the following criteria:

(A) Before disinfection, unless otherwise approved in writing by the department, the wastewater must be treated with a filtration process, and the turbidity must not exceed an average of 2 nephelometric turbidity units (NTU) within a 24-hour period, 5 NTU

more than five percent of the time within a 24-hour period, and 10 NTU at any time, and

(B) After disinfection, Class A recycled water must not exceed a median of 2.2 total coliform organisms per 100 milliliters, based on results of the last seven days that analyses have been completed, and 23 total coliform organisms per 100 milliliters in any single sample.

(d) Monitoring.

(A) Monitoring for total coliform organisms must occur once per day at a minimum.

(B) Monitoring for turbidity must occur on an hourly basis at a minimum.

(e) Setback Distances. Where sprinkler irrigation is used, recycled water must not be sprayed onto an area where food is being prepared or served, or onto a drinking fountain.

(f) Access and Exposure. When using recycled water for an agricultural or horticultural purpose where spray irrigation is used, or an industrial, commercial, or construction purpose, the public and personnel at the use area must be notified that the water used is recycled water and is not safe for drinking. The recycled water use plan must specify how notification will be provided.

(g) Site Management. When using recycled water for a landscape impoundment, restricted recreational impoundment, nonrestricted recreational impoundment, or for irrigating a golf course, cemetery, highway median, industrial or business campus, park, playground, school yard, residential landscape, or other landscapes accessible to the public, signs must be posted at the use area or notification must be made to the public at the use area indicating recycled water is used and is not safe for drinking. The recycled water use plan must specify how notification will be provided.

Stat. Auth.: ORS 468.020, ORS 468.705 & ORS 468.710
Stats. Implemented: ORS 468B.030 & ORS 468B.050
Hist.: DEQ 32-1990, f. & cert. ef. 8-15-90

340-055-0013

Exempted~~ions~~ Use of Recycled Water

~~Reclaimed~~Recycled water used by a wastewater treatment system owner for landscape irrigation or for in plant processes at ~~the~~ a wastewater treatment system ~~plant site where it is generated shall be~~is exempt from ~~these~~ rules of this division if~~provided~~:

(1) The ~~reclaimed~~ recycled water ~~that is used~~ is ~~disinfected,~~ an oxidized and disinfected wastewater; ~~and~~

(2) The ~~Reclaimed~~recycled water ~~that~~ is used ~~for landscape irrigation shall be confined to~~ at the wastewater treatment system~~plant~~ site where it is generated or at an auxiliary wastewater or sludge treatment facility that is subject to the same NPDES or WPCF permit as the wastewater treatment system. ~~No spray or drift shall be allowed off the treatment plant site. The treatment plant site shall not include~~Contiguous property ~~that is not contiguous~~ to the parcel of land upon which the treatment ~~plant~~system is located is considered the wastewater treatment system site if under the same ownership; ~~.~~

(3) Spray or drift or both from the use does not occur off the site; and

(4) Public access to the site is restricted.

Stat. Auth.: ORS 468.020, ORS 468.705 & ORS 468.710
Stats. Implemented: ORS 468B.050
Hist.: DEQ 32-1990, f. & cert. ef. 8-15-90

340-055-001~~615~~

General Requirements for Permitting the Use of ~~Reclaimed~~Recycled Water

(1) NPDES or WPCF permit. ~~No sewage~~A wastewater treatment system owner ~~shall~~may not provide ~~release~~ any ~~reclaimed~~ recycled water for use unless ~~so~~ authorized by a ~~WPCF or~~ NPDES or WPCF permit issued by the ~~D~~department pursuant to OAR chapter 340, division 045.

~~Any application for a WPCF or NPDES permit that proposes to use reclaimed water shall provide sufficient information as necessary to evaluate and determine compliance with this Division.~~

(2) Recycled water use plan.

(a) Except for use of ~~reclaimed~~ recycled water ~~already~~ authorized by a NPDES or WPCF permit, ~~by the Department, no sewage~~ a wastewater treatment system owner may not provide ~~shall release~~ any ~~reclaimed~~recycled water for distribution or use or both until a ~~reclaimed~~recycled water use plan meeting the requirements of OAR 340-055-0025 has been approved in writing by the ~~D~~department. Upon approval of the plan, the permittee must comply with the conditions of the plan.

(b) Before approving or modifying any plan for the use of Class C, Class D, or nondisinfected recycled water, the ~~D~~department will~~shall~~ submit the proposed plan to the ~~Health Division~~Oregon Department of Human Services for comment.

(c) For uses of ~~reclaimed~~recycled water ~~already~~ previously authorized under a NPDES or WPCF permit~~ted,~~ but without a department approved ~~for which no reclaimed~~recycled water use plan, ~~has been approved,~~ the ~~sewage~~wastewater treatment system owner ~~shall~~must

submit a ~~reclaimed~~recycled water use plan to the ~~D~~department within one year of the effective date of these rules.~~when requested in writing by the Department.~~

(3) Land application on land zoned exclusive farm use. A recycled water use plan will not be approved for the land application of recycled water on land zoned exclusive farm use until the requirements of ORS 215.213(1)(bb) and 215.283(1)(y) for recycled water are met.

(~~4~~3) Compliance with this division. When~~re~~ the rules of this ~~D~~division require a limitations ~~and~~ or a conditions or both that ~~are different or more stringent than~~conflicts with a limitation or a conditions or both in an existing permits, the existing permit ~~limitations and conditions shall~~ controls until ~~such time as the Department chooses to change the permit limitations and conditions through~~ the permit is modified~~cation~~ or renewed~~al~~ by the department. When the ~~Department does choose to change~~ existing permit is modified or renewed,~~limitations and conditions to conform to these rules,~~ the permittee ~~shall~~will be given a reasonable compliance schedule ~~for~~to achieve ~~ing more stringent~~new requirements if necessary. ~~The compliance schedule shall be inserted in the permit at the time the permit is renewed or modified.~~

~~(4) Reclaimed water from sewage treatment systems used for agricultural and nonagricultural uses listed in Table 1 of this Division shall comply with the associated effluent quality limitations and the treatment, monitoring and other requirements for that use that are stated in Table 1:~~

(5~~b~~) Additional permit limitations and conditions. The ~~D~~department may include additional permit ~~effluent~~ limitations ~~and~~/or ~~other permit~~ conditions or both ~~other than those required by Table 1~~ if it determines or has reason to believe ~~that the reclaimed water may contain physical or chemical contaminants that would impose potential hazards to~~ additional requirements for the use of recycled water are necessary to protect public health or the environment or both.~~or cause detrimental effects on an allowed use;~~

~~(5) Reclaimed water from sewage treatment systems will be considered adequately treated and disinfected if, at the end of the treatment process, the bacterial and turbidity limitations for the use of reclaimed water as specified in Table 1 are met. The sampling point for monitoring compliance with water quality limitations will be specified in the permit.~~

(6) Authorization of other recycled water uses. ~~By~~The department may authorize through a NPDES or WPCF permit a use of ~~, reclaimed~~recycled water for a beneficial purpose ~~use~~ not specified in this division.~~Table 1 may be authorized. In~~ When the department considers~~ing such~~ the authorization, ~~the Department~~it may request information and ~~shall impose such effluent~~ include permit limitations or conditions or both ~~as deemed~~ necessary to assure protection of public health and the environment. ~~Before t~~The ~~D~~department ~~shall authorize uses of reclaimed water under this section of the rule, written concurrence from~~ will confer with the Oregon Department of Human Services before authorizing other uses of Class C, Class D, or nondisinfected recycled water under this section.~~Health Division shall be obtained.~~

(7)~~d)(C)~~ Setback distances. The ~~D~~department may ~~consult with the Health Division before establishing buffer~~consider and approve, on a case-by-case basis, a setback distances other than ~~those~~what is required~~specifically cited~~ in this division~~Table 1. (d)(A)The Department~~ For a ~~may~~ reduced ~~the buffer~~setback distance,~~s~~ it must be demonstrated to the department that ~~required in Table 1 if it determines that alternative controls as specified in the permit will~~

~~adequately protect~~ public health and the environment will be adequately protected. The recycled water use plan must include any approved alternative setback distance.~~Alternative controls may be, but are not limited to, valves that are activated by wind speed or direction, low trajectory~~ sprinklers or ~~remoteness of the site to incompatible uses;~~
~~(d)~~(B) ~~Buffers for uses in Table 1 for Level I effluent shall be specified in the permit and shall be based on a determination that aerosols will be adequately controlled so as to protect public health;~~

(8) Public outreach and sign posting. When the rules of this division require the posting of signs at a use area, the department may, on a case-by-case basis, approve an alternative method for public outreach where it considers the method will assure an equivalent degree of public protection.

~~[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 468.020, ORS 468.705 & ORS 468.710
Stats. Implemented: ORS 468B.030 & ORS 468B.050
Hist.: DEQ 32-1990, f. & cert. ef. 8-15-90

340-055-0017

Treatment and Use of Recycled Water

(1~~a~~) Alternative treatment process. ~~Where Table 1, for specified uses, requires that reclaimed water receive biological, coagulation, clarification, filtration treatment plus disinfection, t~~The ~~D~~department ~~will consider~~may approve in writing an alternative wastewater treatment process not specified in the rules of this division~~es that do not utilize coagulation provided that~~ if it is demonstrated that the treatment is equivalent to and can achieve the ~~effluent quality to that achieved with coagulation~~recycled water criteria required for a specific beneficial purpose.~~ can be demonstrated. The Department shall consult with the Oregon Health Division when considering alternative treatment processes allowed for under this section;~~

(2~~7~~) Additional treatment. A person using ~~reclaimed~~recycled water from a ~~sewage~~wastewater treatment system may provide additional treatment for a ~~more restrictive reuse as allowed under Table 1 of~~different class of recycled water that is identified in this ~~D~~division. ~~Under such conditions, t~~The ~~sewage~~wastewater treatment system owner providing the additional treatment is subject to the ~~same requirements as other sewage treatment system owners releasing wastewater for reuse and its owner shall~~rules of this division and must have a NPDES or WPCF ~~or NPDES~~ permit issued by the ~~D~~department.

(3~~8~~) Blending recycled water. The ~~D~~department may ~~consider~~ approve on a case-by-case basis ~~the effects of~~ blending ~~reclaimed~~ recycled water with other waters if proposed by ~~the owner of~~ a ~~sewage~~wastewater treatment system owner. ~~In cases where~~ Before blending ~~of reclaimed~~recycled water, ~~is provided,~~ the ~~sewage treatment system~~ owner ~~shall~~must obtain

written authorization from the department. In obtaining authorization, the wastewater treatment system owner must submit to the dDepartment, at a minimum the following:,

(a) aAn plan of operations plan,

(b) aA description of any additional treatment process,

(c) A description of blending volumes, and

(d) aA range of final recycled water quality at the compliance point identified in the NPDES or WPCF permit.of use. Reclaimed water receiving less than secondary treatment and disinfection shall not be blended for uses requiring a higher level of treatment and disinfection.

(49) Water right. Compliance with tThese rules of this divisionshall not do not create a water right under ORS Cchapters 536, 537, 539 or 540. A person must contact the Oregon Water Resources Department to determine water right requirements for the use of recycled water.

(511) Prohibited use for human consumption. The use of reclaimed recycled water from a sewage treatment system for direct human consumption, regardless of the treatment classlevel of treatment, is prohibited unless, after public hearing and with the written concurrence ofapproved in writing by the Oregon Department of Human Services, and after public hearingHealth Division, and it is so authorized by the Environmental Quality Commission.

(6) Prohibited use for a public pool. The use of recycled water as a source of supply for a public pool, spa, or bathhouse is prohibited unless authorized in writing by the department and with written approval from the Oregon Department of Human Services. Public pools are subject to the requirements of ORS 448 and the Oregon Department of Human Services administrative rules.

(9) The sewage treatment system owner shall be solely responsible and liable to the Department for meeting the requirements of these rules and the sewage treatment system owner's permit for any and all water that passes through the owner's treatment plant. Any reclaimed water released for use on property not under the direct control of the sewage treatment system owner shall be allowed only if there is a legally enforceable contract between the treatment plant owner and the user. The contract shall set forth as a minimum:
(a) The quality and maximum quantity of wastewater to be released for use by the sewage treatment system;
(b) The specific use(s) for which the reclaimed water will be used by the user;
(c) The maximum quantity of reclaimed water that will be used on an annual basis;
(d) A condition that the direct release of any reclaimed water to surface water of the State of Oregon will be prohibited;
(e) A statement specifying the parties in the contract responsible for compliance with these rules and the sewage treatment system permit;
(f) A provision allowing the sewage treatment system owner to cease providing reclaimed water if the Department or the owner determine that the requirements of this Division are not being met;

~~(g) A condition that requires the user of reclaimed water to report to the sewage treatment plant owner any and all violations of the terms of these rules or the contract.~~

~~(10) In cases where reclaimed water is transferred from one user to another, each succession of ownership of the reclaimed water shall be governed by a legally enforceable contract on file with the owner of the sewage treatment system and which notifies the succeeding reclaimed water user of the requirements of this Division and the permit for the sewage treatment system. The contract shall also require the succeeding user to so contract with any additional succeeding reclaimed water users.~~

(7) Transporting recycled water. A vehicle used to transport or distribute recycled water must not be used to transport water for human consumption, unless authorized in writing by the department. The vehicle must be clearly identified with the words "nonpotable water" written in letters at least six inches high and displayed on each side and rear of the vehicle unless otherwise authorized by the department.

(8) Impoundments. Constructed landscape, and restricted and nonrestricted recreational impoundments approved for use under the rules of this division are not considered waters of the state for water quality purposes. Impoundments used for wastewater treatment are subject to ORS 215.213 and 215.283.

(9) Wetlands.

(a) The term "waters of the state" as provided in OAR 340-055-0012(18) includes, but is not limited to, the following wetlands and discharge to any of these wetlands requires a NPDES permit issued by the Department pursuant to OAR chapter 340, division 45:

(A) Enhanced or restored wetlands;

(B) Existing natural wetlands; and

(C) Wetlands created as mitigation for loss of wetlands under the Clean Water Act, Section 404.

(b) Wetlands constructed on non-wetland sites and managed for wastewater treatment are exempt from the rules of this division and are not considered waters of the state for water quality purposes.

Stat. Auth.: ORS 468.020, ORS 468.705 & ORS 468.710
Stats. Implemented: ORS 468B.030 & ORS 468B.050
Hist.: DEQ 32-1990, f. & cert. ef. 8-15-90

340-055-0020

Groundwater Quality Protection ~~Requirements~~

~~No r~~Recycled water ~~shall~~ will not be authorized for use unless all ~~requirements for~~ groundwater quality protection requirements ~~established~~ in OAR ~~C~~chapter 340, ~~D~~division 40 are met.~~satisfied.~~ The requirements in OAR ~~C~~chapter 340, ~~D~~division 40 ~~shall be~~are considered ~~satisfied by the Department~~to be met if the ~~sewage~~wastewater treatment system owner demonstrates ~~that reclaimed~~ recycled water will ~~not~~ be used ~~in a manner~~ or land applied in a manner and at a rates that minimizes the movement of ~~cause~~ contaminants to ~~be leached into the~~ groundwater ~~in quantities that will adversely affect~~and does not adversely impact groundwater quality. If the use of recycled water occurs within a designated groundwater management area, the department may require additional conditions to be met.

Stat. Auth.: ORS 468.020, ORS 468.705 & ORS 468.710
Stats. Implemented: ORS 468B.150 - ORS 468B.190
Hist.: DEQ 32-1990, f. & cert. ef. 8-15-90

340-055-0022

Monitoring and Reporting

(~~12~~) The ~~monitoring requirements specified in any~~ department will include in a NPDES or WPCF permit ~~that~~ authorizinges the use of ~~reclaimed~~ recycled water, ~~shall,~~ at a minimum, ~~meet~~ the monitoring requirements in OAR 340-055-0012.~~listed in Table 1 of this Division. Effluent and other data required by a permit authorizing use of reclaimed water from sewage treatment plants shall be submitted to the Department each month.~~

~~(13) A permit authorizing use of reclaimed water from sewage treatment plants shall require reporting of noncompliance with this Division and the sewage treatment system owner's permit within 24 hours of when the permittee becomes aware of an incident of noncompliance. If the permittee becomes aware of the incident of noncompliance when the Department is not open, the incident shall be reported to Oregon Emergency Response System (Telephone Number 1-800-452-3011).~~

(2~~e~~) ~~In cases where~~When chlorine or a chlorine compounds ~~are~~is used as ~~the~~a disinfecting agent, the ~~D~~department may specify in the NPDES or WPCF permit a minimum chlorine residual concentration ~~to be met after a minimum contact time~~. ~~In cases where~~When other disinfecting agents are used, the ~~D~~department may require ~~other~~ additional monitoring requirements ~~that will~~to assure adequate disinfection. ~~The Department may consult with the Health Division before allowing disinfection agents other than chlorine or chlorine compounds;~~

(3~~f~~) ~~Every~~The department will include in a NPDES or WPCF permit ~~that~~ authorizinges the use of ~~reclaimed~~ recycled water, ~~shall include~~ a requirement that the ~~sewage~~wastewater treatment system ~~operator~~owner submit ~~at least~~ an annual report to the ~~D~~department describing the effectiveness of the system to comply with the approved ~~reclaimed~~ recycled water use plan, the rules of this ~~D~~division, and the permit limits and conditions for recycled water.

Stat. Auth.: ORS 468.020, ORS 468.705 & ORS 468.710

Stats. Implemented: ORS 468B.030 & ORS 468B.050
Hist.: DEQ 32-1990, f. & cert. ef. 8-15-90

340-055-0025

~~Reclaimed~~ Recycled Water Use Plan

(1) A ~~Reclaimed~~ recycled water use plans ~~shall~~must describe ~~demonstrate~~ how the ~~sewage~~wastewater treatment system owner will comply with ~~these~~ rules of this division and must include, but is not limited to, the following:~~shall meet the following minimum requirements:~~

(a) ~~(1) The plan shall contain a~~A description of the wastewater treatment system, including treatment efficiency capability;~~design of the proposed reclamation system and shall clearly indicate the means for compliance with these regulations.~~

(b) A detailed description of the treatment methods that will be used to achieve a specific class of recycled water and for what beneficial purpose;

(c) The estimated quantity of recycled water to be provided by the wastewater treatment system owner to the user, and at what frequency and for what beneficial purpose;

(d) A description of contingency procedures that ensure the requirements of this division are met when recycled water is provided for use;

(e) Monitoring and sampling procedures;

(f) A maintenance plan that describes how the wastewater treatment system equipment and facility processes will be maintained and serviced;

(g) If notification is required by the rules of this division, a description of how the public and personnel at the use area will be notified; and

(h) A description of any measuring and reporting requirements identified by the Oregon Water Resources Department after consultation with that agency.

(2) If Class B, C, or D, or nondisinfected recycled water is to be used for irrigation, a recycled water use plan must also include, but is not limited to, the following:

(a) A description and identification of the land application site, including the zoned land use of the irrigation site and surrounding area, a site map with setbacks, and distances of nearest developed property from all boundaries of the irrigation site;

(b) A description of the irrigation system, including storage, distribution methods, application methods and rates, and shut off procedures;

(c) A description of the soils and crops or vegetation grown at the land application site;

(d) A description of site management practices including, but not limited to, the timing of application, methods used to mitigate potential aerosol drift, and if required by this division, posting of signs or public outreach; and

(e) If public access control or notification is required by this division, descriptions of public access control and how the public and personnel will be notified.

~~(2) No reclaimed water use plan submittal shall be deemed complete for review by the Department unless the submittal includes three complete copies of the proposed plan.~~

(3) If Class A recycled water is to be used for the beneficial purpose of artificial groundwater recharge, a recycled water use plan must also include, but is not limited to, the following:

(a) A groundwater monitoring plan in accordance with OAR 340-040-0030(2);

(b) A determination if the recharge will be to a drinking water protection area;

(c) A description of the soils and characteristics;

(d) The distance from the recharge area to the nearest point of withdrawal and the retention time in the aquifer until the time of withdrawal; and

(e) Verification from Oregon Water Resources Department that a request for authorization for this use has been initiated.

(4) Conditions contained in a department approved recycled water use plan are NPDES or WPCF permit requirements.

Stat. Auth.: ORS 468.020, ORS 468.705 & ORS 468.710
Stats. Implemented: ORS 468B.030 & ORS 468B.050
Hist.: DEQ 32-1990, f. & cert. ef. 8-15-90

340-055-0030

~~Other~~Operational Requirements for the ~~Use~~ Treatment and Distribution of ~~Reclaimed~~ Recycled Water

(1) Bypassing. The intentional diversion of wastewater from any unit process in the wastewater treatment system for a beneficial purpose is not allowed, unless with the unit process out of service the recycled water meets the criteria of this division for a specific class and beneficial purpose described in the recycled water use plan. ~~No bypassing shall be allowed of untreated or inadequately treated water from the sewage treatment system or from any intermediate unit processes to the point of use.~~

(2) Alarm devices. Alarm devices ~~shall be provided as necessary~~are required to provide warning of power loss ~~of power~~ and/~~or~~ failure of process equipment essential to the proper operation of the ~~sewage~~wastewater treatment system and ~~to~~ compliance with this ~~D~~division.

(3) Standby power. Unless otherwise approved in writing by the ~~D~~department, ~~sewage~~a wastewater treatment systems providing ~~reclaimed~~ recycled water for use ~~shall~~must have sufficient standby power ~~facilities of sufficient capacity~~ to fully operate all essential treatment processes. The ~~D~~department may grant an exception to this section only if the ~~sewage~~wastewater treatment system owner demonstrates that power failure will not result in inadequately treated water being ~~released~~ provided for use and will not result in any violation of an NPDES or WPCF permit limit or condition or Oregon Administrative Rule.

(4) Redundancy. ~~Sewage~~A wastewater treatment systems that provides ~~reclaimed~~ recycled water for use ~~shall contain~~must have a sufficient level of redundant treatment facilities and monitoring equipment to ~~effectively~~ prevent inadequately treated recycled water from being used or discharged to public waters.

(5) Distribution system requirements. Unless otherwise approved in writing by the ~~D~~department, all piping, valves, and other portions of the ~~reclaimed~~ recycled water use system that is outside a building must~~shall~~ be constructed and marked in a manner to prevent cross-connection with a potable water systems. Unless otherwise approved in writing by the ~~D~~department or as required by the rules of this division, construction and marking ~~shall~~must be consistent with sections (2), (3), (4), and (5) of the ~~Final Draft of the~~1992 "Guidelines for the Distribution of Nonpotable Water" of the California-Nevada Section of the American Water Works Association~~, as revised September 14, 1983~~. ~~The Department may allow exceptions for existing systems in rural areas where it can be demonstrated that both private and public domestic water systems are more than 100 feet from any component of the system using reclaimed water.~~

(6) Cross-connection control. ~~There shall be no c~~Connection between a ~~ny~~ potable water supply system and ~~the~~ a recycled water distribution system ~~carrying reclaimed water~~is not authorized unless the connection is through ~~either~~ an ~~unrestricted~~ air gap separation approved by the department. ~~at least twice as wide as the diameter of the potable water discharge, or a~~A reduced pressure principle back-flow prevent~~or~~ion device may be used only when approved in writing by the department and the potable water system owner. ~~(RPP) which is tested and serviced professionally at least once per year.~~

~~(8) No reclaimed water shall be made available to a person proposing to use reclaimed water unless that person certifies in writing that they have read and understand the provisions in these rules. This written certification shall be kept on file by the sewage treatment system owner and be made available to the Department for inspection upon request.~~

~~[Publications: The publication(s) referred to or incorporated by reference in this rule are available from the agency.]~~
Stat. Auth.: ORS 468.020, ORS 468.705 & ORS 468.710
Stats. Implemented: ORS 468B.030 & ORS 468B.050
Hist.: DEQ 32-1990, f. & cert. ef. 8-15-90

NOTE: This table specifies the allowable beneficial purposes for various levels of quality of reclaimed water. If reclaimed water is to be applied to a specific beneficial purpose, all requirements except advisory notices, but including footnotes, listed for that level of reclaimed water and use must be met.

CATEGORY	LEVEL I	LEVEL II	LEVEL III	LEVEL IV
Biological Treatment	X	X	X	X
Disinfection		X	X	X
Clarification				X
Coagulation				X
Filtration				X
Total Coliform (organisms/100 ml):				
Two Consecutive Samples	N/L	240	N/L	N/L
7-Day Median	N/L	23	2.2	2.2
Maximum	N/L	N/L	23	23
Sampling Frequency	N/R	1 per week	3 per week	1 per day
Turbidity (NTU):				
24-Hour Mean	N/L	N/L	N/L	2
5% of Time During a 24-Hour Period	N/L	N/L	N/L	5
Sampling Frequency				Hourly
GENERAL				
Public Access	Prevented (fences, gates, locks)	Controlled (signs, rural or nonpublic lands)	Controlled (signs, rural or nonpublic lands)	No direct public contact during irrigation cycle

CATEGORY	LEVEL I	LEVEL II	LEVEL III	LEVEL IV
Buffers for Irrigation:	Surface: 10 ft. Spray: site specific	Surface 10 ft. Spray: 70 ft.	10 ft.	None required
Agricultural:				
Food Crops	N/A	N/A	N/A	Unrestricted
Processed Food Crops	N/A	1	1	Unrestricted
Orchards and Vineyards	N/A	2	2	Unrestricted
Fodder, Fiber, and Seed Crops not for Human Ingestion	3	1	1	Unrestricted
Pasture for Animals	N/A	4	4	Unrestricted
Sod	N/A	1	1	Unrestricted
Ornamental Nursery Stock	N/A	1	1	Unrestricted
Christmas Trees	N/A	1	1	Unrestricted
Firewood	N/A	1	1	Unrestricted
Commercial Timber	3	1	1	Unrestricted

CATEGORY	LEVEL I	LEVEL II	LEVEL III	LEVEL IV
Parks, Playgrounds, Schoolyards, Golf Courses with Contiguous Residences	N/A	N/A	N/A	5,6
Golf Courses without Contiguous Residences	N/A	5,7	5,7	5,6
Cemeteries, Highway Medians, Landscapes without Frequent Public Access	N/A	5,7	5,7	5,6
Industrial or Commercial Use	N/A	9,10,11,12	9,10,11,12	9,10,12
Construction Use	N/A	9,10,11,12,13	9,10,11,12,13	9,10,12,13
Impoundments:				
Unrestricted	N/A	N/A	N/A	8,10
Restricted	N/A	N/A	8,10,14	8,10
Landscape Impoundments	N/A	8,10,14	8,10,14	8,10

*DEFINITIONS:

Surface: Surface irrigation where application of reclaimed water is by means other than spraying such that contact between the edible portion of any food crop and reclaimed water is prevented.

Spray: Spray irrigation where application of reclaimed water to crops is by spraying it from orifices in piping.

Processed Food Crops: Those which undergo thermoprocessing sufficient to kill spores of Clostridium botulinum. Washing, pickling, fermenting, milling or chemical treatments are not sufficient.

*DEFINITIONS: (Continued)

N/A: This level of reclaimed water not allowed for this use.
N/L: No limit.
X: Required treatment for this treatment level.
N/R: Not required.

FOOTNOTES:

1 Advisory Notice Only: The Oregon State Health Division recommends that there should be no irrigation of this level of effluent for 3 days prior to harvesting.

2 Surface irrigation where edible portion of crop does not contact the ground, and fruit or nuts shall not be harvested off the ground.

3 The Department may permit spraying if it can be demonstrated that public health and the environment will be adequately protected from aerosols. Advisory Notice Only: The Oregon State Health Division recommends that there should be no irrigation of this level of effluent for 30 days prior to harvesting.

4 Surface or spray irrigation: No animals shall be on the pasture during irrigation.

5 Signs shall be posted around the perimeter of the facility's perimeter and other locations indicating that reclaimed water is used for irrigation and is not safe for drinking, and in the case of effluent quality Levels II and III for body contact (e.g., for Level IV, ATTENTION: RECLAIMED WATER USED FOR IRRIGATION, DO NOT DRINK . ATENCION: RECLAMADO DESPERDICIO DE AGUA USADO PARA LA IRRIGACION, NO BEBA EL AGUA; for Levels II and III, ATTENTION: RECLAIMED WATER USED FOR IRRIGATION, AVOID CONTACT, DO NOT DRINK . ATENCION: RECLAMADO DESPERDICIO DE AGUA USADO PARA LA IRRIGACION, EVITE EL CONTACTO, NO BEBA EL AGUA).

6 Reclaimed water shall be applied in a manner so that it is not sprayed onto areas where food is pre-pared or served or onto drinking fountains.

7 Reclaimed water shall be applied in a manner so that it is not sprayed within 100 feet from areas where food is prepared or served or where drinking fountains are located.

8 Signs shall be posted around the perimeter and other locations indicating that reclaimed water is used and is not safe for drinking, and in the case of effluent quality Levels II and III for body contact (e.g., for Level IV, ATTENTION: RECLAIMED WATER, DO NOT DRINK; ATENCION: RECLAMADO DESPERDICIO DE AGUA, NO BEBA EL AGUA; for Levels II and III,

ATTENTION: RECLAIMED WATER, AVOID CONTACT, DO NOT DRINK; ATENCION: RECLAMADO DESPERDICIO DE AGUA, EVITE EL CONTACTO, NO BEBA EL AGUA).

9 The Department may impose more stringent limits on the use of reclaimed water if it believes it is necessary to protect public health and the environment.

10 There shall be no disposal of reclaimed waters into surface or groundwaters without authorization by an NPDES or WPCF permit.

11 Use of reclaimed water in evaporative cooling systems shall be approved only if the user can demonstrate that aerosols will not present a hazard to public health.

12 Members of the public and employed personnel at the site of the use of reclaimed water shall be notified that the water is reclaimed water. Provisions for how this notification will be provided shall be specified in the reclaimed water use plan.

13 Unless decontaminated in a manner approved in writing by the Oregon Health Division, tanker trucks or trailers that transport and/or use reclaimed water shall not be used to transport potable water intended for use as domestic water. A tanker truck or trailer used to transport and/or use reclaimed water shall have the words "NONPOTABLE WATER" written in 6-inch high letters on each side and the rear of the truck. The words "NONPOTABLE WATER" shall not be removed until decontamination as approved by the Health Division has occurred.

14 Aerators or decorative fixtures which may generate aerosols shall not be used unless approved in writing by the Department. Approval will be considered if it can be demonstrated that aerosols will be confined to the area of the impoundment or a restricted area around the impoundment.

ADVISORY NOTICE ONLY:

The Oregon State Health Division recommends that persons who must handle irrigation or other equipment for reclaimed wastewater or who are exposed to reclaimed water should be fully advised of any hazards associated with such exposure and should be provided with necessary protective clothing.

OAR 340-041-0009

Bacteria

(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~~ recycled water pursuant to OAR 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 340, division 55:

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

(ii) ~~Level III~~Class A and ~~Level IV~~Class B 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~~Class C recycled water, 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~~Class A and ~~Level IV effluent~~Class B recycled water, if the log mean of the five re-samples is less than or equal to 2.2 total coliform per 100 milliliters.

Summary of Public Comments and Agency Responses

Title of Rulemaking: Revisions to Recycled (Reclaimed) Water Use Rules, Oregon Administrative Rules (OAR) Chapter 340, Division 55

Prepared by: Judy Johndohl **Date: February 18, 2008**

Comment period	The public comment period opened on July 16, 2007, and closed at 5 p.m. on August 31, 2007. The Department of Environmental Quality (DEQ) held the following public hearings: • Aug. 15, 6 p.m., Community Justice Center, Main Floor Conference Room, 1101 W Main, Suite 101, Medford (One person attended, no one testified) • Aug. 16, 6 p.m., Health & Human Services Building, Lewis & Clark Rm, 1300 NW Wall St, Suite 101, Bend (Three people attended, one person testified) • Aug. 20, 6 p.m., DEQ Headquarters, EQC Conference Room A, 10th floor, 811 SW 6th Ave, Portland (Four people attended, one person testified) • Aug. 21, 6 p.m., City Hall, Community Room, 501 SW Emigrant Ave, Pendleton (Two people attended, one person testified) 20 people submitted written comments during the comment period, including the three people who testified.
Organization of comments and responses	Summaries of individual comments and DEQ's responses are provided below. After general comments, the comments are organized by rule number. This summary uses the rule numbers that are proposed for adoption. The person who provided each comment is referenced by number in parentheses at the end of the comment. A list of commenters and their reference numbers follows the summary of comments and responses.
Explanation of acronyms used in this document	DEQ or department – Oregon Department of Environmental Quality EQC - Environmental Quality Commission IMD - Internal Management Directive NPDES - National Pollutant Discharge Elimination System (water quality permit type) WPCF - Water Pollution Control Facility (water quality permit type)

Summary of Comments and Responses
OAR Chapter 340, Division 55

General Comments of Support

1. Overall support of DEQ's efforts to revise the rules	Appreciated the opportunity to represent the City of Eugene and the Oregon Association of Clean Water Agencies in the Departments Task Force to revise the Oregon Administrative Rules regulating the use of reclaimed water. The City of Eugene appreciates the opportunity to provide comment on these revised rules and supports their adoption, with the suggestions made [in these comments]. (1)
	Thank you for your efforts with the DEQ Reuse Task Force over the past year and a half to meet with key interests and craft the proposed reuse rules revisions. The proposed revisions are essential if the state of Oregon is to be able to successfully recycle treated wastewater to satisfy ever more stringent discharge requirements and generate a valuable source of water for irrigation needs, thereby allowing more natural stream flows. (2)
	I appreciate the opportunity to comment on these revised Reclaimed Water Rules and commend you and the Department of Environmental Quality (Department) for undertaking this important rulemaking process. In general, the proposed revised Reclaimed Water Rules provide for significant improvements over existing water reuse policy. (4)
	We appreciate that ACWA members were included in the Department's Task Force to examine the current Oregon Administrative Rules (OARs) regulating the use of recycled water and propose suggested improvements. The use of recycled water is an important piece of meeting Oregon's water resource needs in the most environmentally sound manner. The proposed revisions update the regulations and incorporate the current scientific knowledge about the uses and appropriate standards for recycled water. (6)
	As a Portland resident I fully support DEQ's efforts to increase use of recycled water. As this city continues to grow we must find ways to conserve and reuse our resources anyway we can. Thank you for spending the time, energy and resources to advance this initiative. (13)
	I applaud the DEQ for revising recycled water use rules to help save water, money and increase efficiency. This is an important step to reducing water demand and offsetting the effects of population growth. Thanks – I hope a progressive rule revision can move forward. (16)
	The City of Ashland is appreciative of DEQ's comprehensive revised Recycled Water Regulations. We very much appreciate your involvement of a Task Force, including the Oregon Association of Clean Water Agencies (ACWA), to gain current industry and breaking technological expertise and support for the revised rules. We support the inclusion of the Department of Human Services earlier in the process. The City appreciates the opportunity to comment on these revised rules and with the suggestion [on Class A criteria] support their adoption. (18)
Response	*Comments noted. No changes were made in response to these comments.*
2. Support proposed revisions to specific rules	The use of reclaimed water is a necessity that has proven to be both economically and environmentally beneficial and is an important issue to the region's on-going quest to improve water quality and conserve potable water. The City of Eugene supports the revised recycled water regulations. (1)
	This city [Sutherlin] is being planned for significant growth and the expansion of these regulations for additional uses facilitates our planning and may well reduce our costs of wastewater treatment in the future. (3)
	The promotion and incorporation of sustainable practices are central to the City of Corvallis' delivery of municipal services to the community. The elimination of barriers and disincentives to recycling water currently in Rule are essential to the City moving forward on major sustainability objectives. The City strongly supports the proposed revisions to OAR Division 55. However, the City encourages the ODEQ to submit to the Environmental Quality Commission (EQC) a revised Rule that creates the broadest range of opportunities to recycle water consistent with the protection of human health and the environmental. (5)
	Numerous improvements have been made in the regulations that reflect the increased national knowledge and experience with recycled water. We [ACWA] appreciate the opportunity to work with the Department on these revised rules, and support their adoption, with suggestions made. (6)

	Specifically, areas of improvement to the rules include: • The revised rules move to a performance based system that allows technology advances to be incorporated into recycled water projects without rule revisions. • The revised rules streamline state agency relationships in reviewing recycled water projects. • The signage requirements are improved and include a provision for alternative communication tools. • Simplified regulations to use Class A recycled water will provide more incentives for wastewater plants to produce this quality of water and use in the community. • The revisions expand the list of allowed recycled water uses. • The revisions provide needed flexibility to address items on a case-by-case basis by ODEQ permit writers and regulatory staff. • The proposal outlines a logical process to allow required buffers to be adjusted on a case-by-case basis. (5, 6)
	Specifically, areas of improvement of the rules include: • The signage requirements are improved to more accurately reflect the low environmental and public health risk of recycled water. We also support the provision of alternative communication tools that has been included. • There is an improved process to use Class A recycled water. • The 'outright' approvable list of recycled water uses was expanded to include items such as concrete and rock crushing, street sweeping, dust control, and commercial car washes. Some ACWA members believe that the list of allowable uses should be expanded for Class D recycled water (secondary treatment with disinfection). • Some ACWA members believe 'outright' buffer distances should be reduced for Class C and Class D recycled water. (6)
	We appreciate DEQ's efforts to involve Clean Water Services (District) in the process of commenting on the Revised Recycled Water Regulations, Revisions to OAR Division 55. Our comments focus on ensuring the water reuse rules as developed and applied will act to encourage and facilitate reuse of water to preserve and protect beneficial uses of water in Oregon. Water in Oregon will become an increasingly more expensive commodity as demand for fixed water supply increases with population growth and economic development. Demand for fixed water will compete with the need to maintain and restore in-stream flow to preserve and protect aquatic resources. To ensure adequate water supply in the future, it is important for Oregon to use its valued water resources carefully and efficiently. Water reuse has potential to play a significant role as Oregon explores opportunities to extend water supplies to meet future demands. Water reuse provides an environmentally sound method for managing wastewater while conserving water and replenishing valuable water supplies. We encourage the Department to continue leading the coordination among state agencies on approval of reuse projects throughout the State of Oregon. (8)
	With more and more community wastewater systems being forced by regulatory pressures to choose non-discharge options, it is vital to establish long-lasting and reliable baselines of performance. (10)

	I think the proposed rule is a great idea. The state should not overlook the possibility of encouraging water reclamation from residences. In Portland, we already have the stormwater bill discount for "rain gardens," but there should be a statewide program for water collection and reclamation systems in residences similar to the programs for subsidizing solar. A number of houses in Portland collect rainwater from the roof, store it in tanks and use it for all household uses after it has been through several filters (these are often featured in the "Build It Green Tour"). Apparently it is possible to be almost "off the (water) grid" with a fairly modest and easy to run installation. A lot of people are interested in this, but the cost is prohibitive. On a smaller scale, the state could subsidize rain barrels/above ground tanks for irrigation, and gray water collection gardens/education. All of these measures reduce stress on fresh water supplies. Developers would scream (what's new?), but an obvious solution would be to require developers to incorporate water collection, gray water collection systems (and solar!) in new developments –this would be the most precise way to target the populations that are creating the increased water stress. Political will and muscle would be needed for this effort. In other words: Don't stop here! We should diversify our approaches to water conservation/reclamation to make Oregon a leader in the U.S. (14)
	The use of recycled water is an important aspect of meeting Oregon's water resource needs. The proposed revisions have provided significant advances to incorporate a performance-based system, technology improvements and to develop state agency coordination to define a clear understanding of the appropriate uses and standards for recycled water. (18)
Response	*Comments noted. No changes were made in response to these comments.*
3. Recommended follow-up with the IMD	I also look forward to working with the Department in assisting with the review of the Internal Management Directive that will incorporate the technical rationale and discussions involved in developing the proposed rule and provide a framework for the successful and consistent implementation of the rule. (1)
	The proposed rules have made great strides in better defining appropriate recycling uses for a wide range of treatment levels. It will now be important that the Internal Management Directive accurately and clearly incorporate the technical information and intent brought forth at the task force meetings that was not put into the proposed rules. (2)
	The development of a comprehensive and well-crafted IMD is essential to the successful, consistent implementation of the revised rule. The roles and responsibilities of ODEQ personnel associated with the proposed revisions have changed frequently. To maintain continuity in the rule development process and its links to the intentions of the Task Force, the City strongly recommends that Judy Johndohl be the primary author of the IMD for the use of recycled water. (5)
	We support the revised recycled water regulations, and as we have discussed at the Task Force meetings that assisted the Department in developing the revised regulations, a comprehensive and well-crafted *Internal Management Directive* that incorporates the technical discussions at the Task Force meetings is an important element of making these rule revisions workable. We look forward to continuing to work with the DEQ staff on reviewing the *Internal Management Directive* that will be critical to successful, consistent application of the revised rules. ACWA's technical members are ready to assist the Department to ensure a draft IMD will be ready for review by the Environmental Quality Commission prior to rule adoption. (6)
	We appreciate the additional efforts the Department under took to include the regulated community in the process and keep it on track and on schedule. We look forward to working with you on the development and completion of the IMD for Recycled Water as it will be a critical tool in writing permits, complying with permits and authorizing uses in a consistent manner through out the State of Oregon. (8)
	I understand that an IMD will be developed after the public notice period, but before the Reclaimed Water Rules are presented to the Environmental Quality Commission (EQC). It would be far more prudent for the Department to complete the IMD and understand the implementation issues prior to promulgating revised regulations. Suggest that the adoption of the Reclaimed Water Rules be deferred until the IMD is drafted and the two documents can proceed to EQC concurrently. (4, 15)

Response	*The department will develop an IMD after the proposed rules are adopted by the EQC. The department will work with a technical advisory committee, including other state agencies identified under the Interagency Memorandum of Agreement on Water Reuse, during the development of the IMD. The Water Quality Program's process for developing all IMDs does not require review by the EQC. No changes were made in response to these comments.*
General	
1. Edit reference to "sprinkler irrigation"	Change all references of "Sprinkler Irrigation" to "Spray Irrigation." (4)
Response	*The use of "sprinkler irrigation" is consistent with the definition used by the Soil Conservation Society of America in their publication, "Resource Conservation Glossary." The definition applies to the method of application and is consistent with how the rules address other irrigation methods. No changes were made in response to this comment.*
2. Use of "only" language in rules	Check the location of "only" wherever it occurs. (10)
Response	*The department reviewed the use of "only" in the proposed rules and has made a few clarifications in OAR 340-055-0012(1) and (2). The use of "only" in the sections on beneficial purposes in -0012 was not changed although language was added to include "any beneficial purpose authorized in writing by the department pursuant to OAR 340-055-0016(6)." The use of "only" elsewhere is appropriately used in the context of the rules.*
3. Distribution of recycled water	The distribution of recycled water via an irrigation district can be an effective, safe means of providing water to irrigators. In many situations, the distribution of recycled water by this means may be the only method by which a community can afford to implement a recycled water program. Consistent with the Governor's Executive Order on recycled water and the legislative direction provided to the Department through Senate Bill 820 from 2005, the distribution of recycled water via an irrigation district should be recognized as a potential means of conveyance. Suggest describing this conveyance practice within OAR 340-055-0017, "Treatment and Use of Recycled Water." (4)
Response	*The use of recycled water for irrigation purposes is recognized and stated as a beneficial purpose in the proposed rules. It is not the department's role to dictate how conveyance of recycled water for irrigation purposes should occur, but to address its use through setback distances, access and exposure requirements, and site management requirements. Nothing is stated in the proposed rules that would prohibit an irrigation district from distributing recycled water: If recycled water is used for irrigation, the recycled water use plan must describe the irrigation system, including the distribution methods. No changes were made in response to this comment.*
4. Further rule development	Further development of the proposed rules is needed to meet the intent of the Governors Executive Order on Water Reuse and Senate Bill 820. Significant additional time may be required to develop additional Rule language. Given the expected "durability" in years of a revised Statute the time to develop additional language is now, before the proposal is forwarded to the EQC for action. (5)
Response	*The rulemaking scope was determined by previous work done by the Urban Reuse Task Force (that was convened as a result of SB 820), and by the Water Reuse Task Force at the beginning of the rulemaking process. DEQ believes it has addressed the key issues identified in the rulemaking scope. Other issues identified through the rulemaking process need further technical and policy review for future rule consideration. No changes were made in response to this comment.*
5. Uses and standards	The revisions as proposed <u>do not</u> incorporate the current scientific knowledge about the uses and appropriate standards for recycled water. Corvallis urges the ODEQ to cooperate with other States in a national effort to press the USEPA to develop risk-based standards for recycled water. Adoption of risk-based standards has been widely accepted around the world by the European Union, Australia and the World Health Organization. The United States generally stands alone in the world in its failure to develop risk-based standards. (5)

Response	*DEQ will continue to track national research on recycled water, and encourage EPA efforts to focus on risk based standards. DEQ will also continue to work with the Oregon Department of Human Services to address potential health related issues with recycled water use. No changes were made in response to these comments.*
6. Wetlands and stream augmentation	The revised rules are critically inadequate in addressing opportunities to recycle water to wetland areas. The State of Washington has comprehensive, well-written and successfully implemented regulations that encourage the use of recycled water in wetlands. The City vigorously supports adoption of the Washington language as written. In consideration of the voluminous style of the Washington rule language the ODEQ may wish to incorporate much of the Washington language into the Internal Management Directive (IMD). (5)
	Wetlands are a valuable environmental, social, and economic resource to Oregon and must be protected. The recognition that reclaimed water may be used as a means to enhance, create, or improve wetland functions should be supported by these Reclaimed Water Rules. Furthermore, there are Oregon communities that currently discharge their reclaimed water to wetlands in accordance with federal and state regulatory requirements. Thus, the following comments regarding wetlands are provided: 1. The revised Reclaimed Water Rules need to recognize that the discharge of reclaimed water into a wetland for the purposes of creating, restoring, enhancing, or otherwise improving wetland functions is a "beneficial use." This can be accomplished by recognizing such a discharge as a beneficial use, but still requiring the discharge to meet those requirements in accordance with OAR 340-055-0017(9). 2. The Department should develop guidance for how the discharge of reclaimed water into a wetland is permitted. This can be accomplished via the Internal Management Directive (IMD) that is being developed as part of the Reclaimed Water Rules revisions. (4, 6)
	We strongly encourage adding language identifying wetland enhancement, restoration, creation of wetlands to serve as wildlife habitat and refuges, and stream augmentation as a beneficial use. The benefits associated with providing wetland creation, restoration or enhancement of wetland systems improves water quality through the use of natural systems, protection of downstream receiving waters, and providing wildlife and waterfowl habitat. Stream augmentation is desirable to maintain stream flows and to enhance the aquatic wildlife habitat as well as to maintain the aesthetic value of the stream. Additional beneficial uses are irrigation supplies, water right replenishment or transfer and fisheries propagation. (8)
	Language should be provided preferably within the rule or alternatively within an internal management directive, enunciating how water quality criteria would be applied when recycled water is used to enhance wetlands. This would be similar to section to section 340-055-0020 (Groundwater Quality Protection) where ancillary guidance for complying with existing water quality standards is provided. (8)
Response	*The state of Washington regulations and standards for wetlands differs from the state of Oregon's in the context of using recycled water for wetlands. "Waters of the state" is defined in Oregon statute under ORS 468B.005(10) and includes wetlands and natural streams. Uses of recycled water that involve discharge to waters of the state are regulated through the NPDES program and are outside the purview of the proposed recycled water use rules. Wetlands constructed and managed for wastewater treatment are exempt under the proposed rules.* *The department also conferred with the Oregon Department of State Lands (DSL) as wetlands are subject to removal-fill permit requirements under OAR chapter 14, division 85. The wetland hydrologic regime is a factor in defining how wetlands are jurisdictional as waters of the state under DSL regulations. No changes were made in response to these comments.*

7. Add rule language to broadly allow reuse	We understand that the Oregon Department of Environmental Quality (Department) is developing an Internal Management Directive (IMD) that will be used to ensure consistent interpretation of the rules. We prefer that the Department add language to the rule that allows the Department the discretion to broadly allow reuse where proposed activities meet the policy statement for what is a beneficial use. A narrow restriction of beneficial reuse may inadvertently limit projects that would otherwise provide significant benefit to aquatic resources. We believe this approach is consistent with the Governor's directive in Executive Order No. EQ 05-04 and, if not captured explicitly in the rule, should be captured in the companion IMD. (8)
Response	*The department believes the approach stated in the comment would be confusing to implement and create inconsistent rule interpretations by staff. It is imperative the department specify in rule what quality of recycled water may be used for what beneficial purpose. The department recognizes the stated beneficial purposes are not inclusive of all potential uses. It is not the department's intent to create a disincentive to using recycled water for a beneficial purpose, and therefore the rules under OAR 340-055-0016(6) do allow the department to authorize other recycled water uses and in doing so will confer with the Oregon Department of Human Services. The IMD will provide guidance to staff as to how to make a determination for a use of recycled water not stated in the rules. No changes were made in response to this comment.*
8. Compliance with bacteria treatment criteria	The rule establishes bacteria treatment criteria. For example, Class A recycled water must never exceed 23 total coliform organisms. Is it the Department's intent that if an sample exceeds 23 total coliform as monitored for a reuse outfall that the measure results is a permit violation? It would be our practice to stop distribution immediately and not to resume until the exceedance was corrected. Is there an opportunity for describing a process to ensure verification sampling or to ensure delivery is terminated so that there is not a violation associated with a single sample? (8)
Response	*The purpose of these rules is to protect public health and the environment. The water quality permit will address site specific monitoring and contingency requirements to ensure all recycled water meets the required criteria prior to distribution and/or use. A monitoring program should be developed to include a contingency plan, such as what is described in the comment, and should be addressed in the recycled water use plan. Under OAR 340-055-0025(1)(d), a recycled water use plan must describe contingency procedures that ensure the rules are met when recycled water is provided for use. No changes were made in response to this comment.*
9. Total coliform as an indicator organism	I would like to express my concern over total coliform limits placed on reuse water used for irrigation. The choice to use total coliform seems out of place when the standard is moving towards using E. coli as the indicator species. The total coliform group is not even indicative of gut bacteria. The 24 colonies/100ml limit of total coliform for water used for golf course irrigation seems over kill when the WHO uses 180 colonies/100ml E. coli for beach closure. So 180 colonies for total immersion recreation and 24 colonies when someone could suck a golf tee? To meet this limit, that is overkill, large amount of chlorine have to be used. THM's, HAA5's are disinfection by products that we are trying to reduce. I would like to recommend that the use of the total coliform group be replaced with E. coli for the indication of bacterial contamination. (9)
Response	*Total coliform bacteria include four genera in the Enterobacteriaceae family, one of which is Escherichia genus (E. coli species). Total coliform as an indicator organism for pathogens is more inclusive of the coliform genera and is a more stringent treatment criterion. E. coli is representative of fecal sources and is used by the department as numeric criteria for freshwaters and estuarine waters other than shellfish growing waters. While the department proposes the use of E. coli as an indicator organism for Class D recycled water, the department believes the use of total coliform for recycled water addresses the need to ensure protection of public health for beneficial purposes with higher potential for public exposure. No changes were made in response to this comment.*
10. Irrigation and water quality	It is important to irrigate with wastewater of known quality. Reuse should follow the sampling results; not be independent of water quality reporting. (10)

Response	*The criteria and monitoring requirements stated in the rule for a particular class of recycled water will be included in a wastewater treatment system owner's NPDES or WPCF permit. No changes were made in response to this comment.*
11. Design and operations	Make no mistake; even with the best of intentions we are dealing with many intangibles related to design, equipment and operations in the business of treating and restoring the use of sewage. Best to err on the side of protection of public health and let the permittees catch up. With sewage, you always know where it has been. (10)
Response	*As stated in the purpose of these rules under OAR 340-055-0005, "The purpose of this division of rules is to protect the environment and public health in the State of Oregon." The rules were written based on current knowledge and research of wastewater treatment technology to reflect the purpose as stated. No changes were made in response to this comment.*
12. Dewatering of septage	We are in the septic pumping and land application business with a WPCF permit to treat septage and then land apply it. This process could be greatly enhanced if we could dewater at our agricultural land application sites and then use an approved drip system to disperse the recycled water. The solids could still be land applied or taken to a landfill. The technology to do this is readily available and portable. This same process could be used for many different wastewater applications. (11)
Response	*Septage operations and the land application of septage are outside the scope of this rulemaking. No changes were made in response to this comment.*
13. Point of compliance	Where is the point of compliance for quality? The old rules specifically addressed this. The proposed rules have deleted that rule. Does this mean that sources must meet the numerical limits prior to its use? If so, then sources that store reclaimed water in a pond after treatment, but prior to irrigation will have to re-disinfect. The language in the previous rules should be restored to eliminate this ambiguity. (15)
Response	*The current rule [OAR 340-055-0015(5)] is not clear in what is meant by "...adequately treated and disinfected if, at the end of the treatment process, the bacterial and turbidity limitations..." "Adequately" is open for interpretation as well as "at the end of the treatment process." The proposed rules state treatment requirements and what numeric criteria must be met for each class of recycled water.* *Monitoring points for compliance purposes should be included in a NPDES and WPCF permit and will be permit specific. Monitoring points will depend on the criteria to be monitored for, what the treatment train is, and at what point the recycled water is released for use as a beneficial purpose. The department will consider the type of treatment process in determining sampling locations for purposes of compliance with these rules. The IMD will further address monitoring and sampling issues.* *No changes were made in response to these comments.*
14. Subsurface distribution	Recycled water distributed via the subsurface (like drip irrigation) should be specifically exempt from the rules. (15)
Response	*A subsurface system used specifically for disposal of wastewater and permitted under the Onsite Wastewater Treatment System Rules (OAR 340-071) is exempt from these proposed rules. If a subsurface system is being utilized for a beneficial purpose as stated in the rules and not for disposal, the system would be regulated under OAR 340-055. No changes were made in response to this comment.*

15. Sustainability – treatment technologies	As a design professional I want to emphasize the importance of streamlining water reuse for nonpotable functions in commercial and residential buildings. Oregon is at the forefront of sustainable building, and research and legislation are important steps in overcoming resistance to water resource conservation measures. I would appreciate exploration of benign treatment technologies, that limit the use of chlorine – UV rays, or bioremediation – exploring such approaches with case studies/pilot projects would be one way to verify that the strategies work and ensure long term safety and reliability. If this program could include residential buildings, the impact could increase tremendously; since residential use, third after industrial, agricultural (both already clearly explored in your rule revision) consume the most potable water. (16)
Response	*DEQ will continue to work with other agencies that regulate the use of recycled water in residential buildings. Specifically, plumbing codes and system maintenance issues have been identified as needing further review in allowing recycled water use systems within residential buildings. Disinfection technologies used for recycled water do include use of ozone and ultraviolet radiation. No changes were made in response to this comment.*
16. Setback distances	I am very concerned that the setback lines in these proposed rules are not sufficient to protect me, my family or my property from being contaminated with recycled water, no matter the quality or Class. I request that you make a rule that there can be no water distributed in a sprinkler system, no closer than 100 feet from an improved property with a private residence and irrigated no closer than 20 feet by ground irrigation without a signed release. Even this distance may not preclude water spray from the large sprinkler guns when the wind gusts. You say that spray or drift or both cannot occur off the wastewater site (which does not fall under these rules), but I saw no sentence that spray and drift would not be allowed on contract sites. There is no way to preclude wind gusts except to provide adequate setbacks. Unless it is specified that it be not allowed, in writing, it will happen. It cannot be left to individual permits to preclude the watering of private residences as this and perhaps other properties, which are next to contract fields, which do not fall under their notification requirements. I know from history that DEQ will not notify me personally nor will the City of Molalla notify me and therefore I can not take a chance that I will have the opportunity to comment on the permit which affects my private property. And I know from history that there is no DEQ enforcement when a wastewater effluent irrigation violation occurs. (19)
Response	*Setback distances provide a necessary margin of safety to protect public health by preventing human contact with the recycled water. Setback distances vary depending on the quality of the recycled water, the method of application, and the purpose of the setback. The proposed rules address access and exposure, and site management requirements if recycled water is used for irrigation. A site management requirement may include the posting of signs around the perimeter of the irrigation site. OAR 430-055-0025(2)(d) states the recycled water use plan must describe site management practices, including methods used to mitigate potential aerosol drift.* *DEQ does provide public notice for NPDES and WPCF permits and this includes the opportunity for the public to comment on the permit proposed to be issued.* *No changes were made in response to these comments.*
17. Human exposure to spray or drift	All recycled wastewater contains contaminants that are not removed from the water, no matter the process or how clear the water looks. Only reverse osmosis will make the water drinkable. No amount of chlorine will kill all dangerous bacteria all the time. Household chemicals, pharmaceuticals, and other consumables as well as biogenic hormones are released directly to the environment after passing through wastewater treatment processes (via wastewater treatment plants, which are not designed to remove them from the effluent). Clostridium botulinum is a threat if there should be a breakdown in processing, something that not even the best wastewater manager can assure 100 percent that it won't happen. It only takes one exposure on one day to get sick. It is well known that giardia has a cyst phase that is not killed by chlorine (Cl_2). Hepatitis A is also not always killed by chlorine. If this recycled water is unfit for human consumption and the general public is not allowed direct contact with this water, then it is unfit to be sprayed or wind blown onto my property in any manner. (19)

Response	*The department agrees that exposure to recycled water through spray or wind drift may be of concern and therefore setback distances are established in the proposed rules (see response to comment 16 above). The possibility of disease transmission depends on a variety of factors, such as the quality of the wastewater, the extent of aerosol formation and travel, climate conditions, irrigation system design, and proximity to public contact. The department will continue to track research on potential contaminants of emerging concern and the relationship to possible health affects and the use of recycled water. No changes were made in response to this comment.*
18. Notification	My property aligns with the property line of the Coleman Ranch in Molalla, which has a contract to use recycled water. Last year pipes were installed to enable irrigation if needed in the future by the growth of Molalla. The corner of my house is less than 12 feet from the property line on the Coleman side. My well is less than 70 feet from the property line. Being notified after the fact is not acceptable, even if there were any notification requirements in the plan, which were deleted from the existing rules. (19)
Response	*Setback distances from the edge of an irrigation site to a water supply source used for human consumption are proposed in the rules and are based on the quality of recycled water. If there is a setback specified from the irrigation site to the property line that is less than the setback from the site to a water supply source for human consumption, the setback must still be met from the site to the water supply source. Notification by posting of signs was not deleted from the proposed rules and is still required as a site management requirement under OAR 340-055-0012 and is required to be addressed in the recycled water use plan under OAR 340-055-0025(2)(d). No changes were made in response to this comment.*
19. Runoff from land application	My property is in floodplain and floodflow, and I am at a lower elevation than the future irrigation fields. There is no mention of this wastewater effluent running off the fields into the water of Oregon. Shouldn't there be some limits to prevent over watering of effluent and contamination of creeks and rivers. (19)
Response	*Runoff from irrigation practices into surface water sources is not allowed, and irrigation should occur at a rate that does not exceed the infiltration rate of the soil. Prevention of runoff is a standard NPDES and WPCF permit condition for facilities that irrigate recycled water. Under OAR 340-055-0025(2)(b), the recycled water use plan must address application methods and rates if recycled water is used for irrigation purposes. No changes were made in response to this comment.*
20. Public exposure and safety	The chance of my family being contaminated with wastewater effluent is great under the current rules. I am sure that there are many other private residences in Oregon under the same conditions or will be as recycled water use increases. If these rules are not rewritten to make my family and visitors safe (without a doubt) I plan to seek legal help, and when I or my property gets wet in any way from this effluent or someone gets sick, I will have legal recourse to sue. (19)
Response	*As stated in the purpose of these rules in OAR 340-055-0005, "The purpose of this division of rules is to protect the environment and public health in the State of Oregon." The rules were written based on current knowledge and research of wastewater treatment technology to allow the use of recycled water that reflects the purpose as stated. No changes were made in response to this comment.*
21. Disclosure	How can I sell my property under the Oregon mandatory disclosure laws when I have to disclose that the property may be/is unsafe for them and their children to play and use and grow and eat unprocessed food? (19)
Response	*This comment is outside the scope of this rulemaking. No changes were made in response to this comment.*
22. Enforcement procedures	Please outline and explain steps the DEQ would take on a significant non compliance enforcement action e.g., Pre Enforcement Notice and Referral for civil penalty. Should the liability fall on the end user? Would the end user be required to obtain a WPCF permit or a general permit from the DEQ to beneficially distribute and use Class B, C, and D recycle water? (20)

Response	*OAR 340-055-0016(1) clearly states "A wastewater treatment system owner may not provide recycled water for use unless so authorized by a NPDES or WPCF permit…" The end user is not required to obtain a water quality permit from the department, but is responsible for using recycled water in accordance with OAR 340-055. OAR 340-055-0012(1) and (2) state "any person having control over the treatment or distribution or both of recycled water….ensure that recycled water is used only in accordance with the…rules of this division" and "any person who uses recycled water may only use recycled water for the beneficial purposes….and must comply with…rules of this division." These sections of the rule adequately address the need for anyone who treats, distributes, or uses recycles water to comply with these rules. DEQ may take enforcement action for a documented violation against any person who fails to comply with the requirements in the rules. What and how enforcement action would be taken is outside the scope of this rulemaking. No changes were made in response to these comments.*
23. Senate Bill 212	Does Senate Bill 212 address that is qualified to assess the agronomy for land use practices for biosolids and recycle water practices? If so what does the bill require of the Department regarding the use of recycle water use on exclusive farm use zoning? (20)
Response	*The first part of this comment is unclear. The proposed rule in OAR 340-055-0016(3) addresses the need for land application on land zoned exclusive farm use to meet the requirements in ORS 215.213(1)(bb) and ORS 215.283(1)(y); these statutes were amended as a result of SB 212. The department developed guidance (available on the department's water reuse web site) in January 2002 that describes procedures as to how DEQ will process land application proposals in compliance with the legislation. No changes were made in response to these comments.*
Purpose - OAR 340-055-0005	
1. Edit language	• Change the wording to read: "The purpose of this division of rules is to protect the environment and public health in the state of Oregon by prescribing requirements for the use of recycled water." (10) • Change "The purpose of this division of rules is to protect" to "<u>They are intended</u> to protect…" (7)
Response	*The purpose of the rules is adequately stated, and a minor edit change was made although not as stated in the comment. No changes were made in response to these comments.*
2. Edit language	Change "for the use" to "for the <u>beneficial</u> use." (7)
Response	*The rule states beneficial purpose in the context of the use of recycled water. "Beneficial use" is defined in OAR 340-041-0002 and has a different meaning related to a water body. No changes were made in response to this comment.*
Policy - OAR 340-055-0007	
1. Edit policy statement	The policy statement can be expanded to encourage the use of recycled water for the beneficial uses of enhancing degraded wetlands, riparian areas, or other ecological functions. Opportunities to provide irrigation water to support these ecological functions may be limited and can be encouraged by appropriately permitting applications for reuse. This could be accomplished by recognizing them as beneficial use but still requiring the discharge to meet those requirements in accordance with OAR 340-055-0016(9). (8)
Response	*Natural streams and wetlands are defined as waters of the state in Oregon. Uses of recycled water that involve discharge to waters of the state are regulated through the NPDES program and are outside the purview of the proposed recycled water use rules. State rules regarding wetland activity are also administered by the Oregon Department of State Lands and were considered in the development of the proposed rules. No changes were made in response to this comment.*
2. Edit language	Change "in such a way as to protect public" to "in <u>a manner which protects</u> public". (7)
Response	*DEQ has made the suggested change.*
3. Edit language	Change "The use of recycled water" to "The <u>beneficial</u> use of recycled water". (7)

Response	*The rule states beneficial purpose in the context of the use of recycled water. "Beneficial use" is defined in OAR 340-041-0002 and has a different meaning related to a water body. No changes were made in response to this comment.*
Definitions - OAR 340-055-0010	
1. Add definitions for Classes A, B, C, and D water	A text general description of the treatment level and a description of any pollution load standard would be very helpful. The current draft starts right off with describing the regulations for water use without fully explaining how the Classes differ. The only location in the draft where I found any relevant distinguishing information was in the subsection criteria sections and the Bacteria OAR section. (17)
Response	*The department follows the rule writing guidance in the Oregon Attorney General's Administrative Law Manual. A substantive rule should not be included as a definition, and a definition should only be used if a term in the rule needs further clarification. The organization of the rules also follows the rule writing guidance and thus definitions come before the substantive rules. The department organized the rules after the definitions with regards to importance and feels the rule on Recycled Water Quality Standards and Requirements is most important as that rule describes the requirements for the different classes of recycled water. No changes were made in response to this comment.*
2. Add definition for constructed wetland	There needs to be an explicit definition of a "constructed wetland" or recognition of where a constructed wetland exists under the current definition of "landscape impoundments." We suggest adding this definition for constructed wetland: *"Constructed wetland " means a wetlands intentionally created from non-wetland sites for the primary purpose of wastewater or stormwater treatment."* (6)
Response	*Constructed wetlands are addressed in OAR 340-055-0017(9), Treatment and Use of Recycled Water and are not considered a landscape impoundment. This rule does include the meaning as stated in the comment, and does not need further clarification. It is not necessary to include a specific definition in the definitions rule when this term is clear in the rules and is used only once. No changes were made in response to this comment.*
3. Add definition for irrigation method	The rule does not have a definition for "Irrigation method"? What is irrigation method? Does it include flood irrigation? There is research that shows saturated soils can have water soluble nutrients leach to groundwater (N, P, Cl, Na, P and compounds) please clarify and add definition to rule. (20)
Response	*"Irrigation method" is used in the context of the rules when recycled water is applied directly to the soil. The rules also include a definition for "sprinkler irrigation" for clarity. The recycled water use plan under OAR 340-055-0025(2)(b) must describe the irrigation system and distribution method, as well as application methods and rates. Each plan will be site specific and flood irrigation may be allowed depending on the circumstances.* *OAR 340-055-0020 addresses the need to meet groundwater quality protection requirements in OAR 340-040.* *No changes were made in response to these comments.*
4. Deletion of previous definitions	Why were the following definitions for "Biological Treatment", "Coagulation" and "Controlled Use" removed from the rule? Is there another place within this rule where these terms are used and defined? (20)
Response	*These terms are not used in the rules and therefore definitions are not necessary. No changes were made in response to this comment.*
5. Change introductory sentence	Change "The following definitions apply to this division of rules:" to The following definitions apply to this division:" (7)
Response	*The lead-in statement is adequate and clear. No changes were made in response to this comment.*

6. Add definition for "food crops"	There needs to be a definition for "food crops." Suggest definition as follows: "means any crops intended for human consumption." (4)
Response	*The term "food crops" is used in these rules in the context of "processed food crops" which is defined. Since the stand alone term "food crops" is not used in the rules, a definition is not necessary. No changes were made in response to this comment.*
7. Landscape Impoundment and Restricted Recreational Impoundment, -0010(7) and (14)	"Landscape Impoundment" implies that boating and fishing are body-contact recreation, while "Restricted Recreational Impoundment" considers them to be non-body-contact recreation. Need to clarify the meanings. (2)
Response	*The intent of the rules is to allow recycled water to be used for three types of impoundments: landscape impoundment, nonrestricted recreational impoundment, and restricted recreational impoundment. Boating and fishing are allowed on restricted and nonrestricted recreational impoundments, and are not relevant to the meaning of landscape impoundments. In response to this comment, the definitions of landscape impoundment and nonrestricted recreational impoundment have been modified.*
8. Add definition for "ornamental nursery stock"	Suggest adding definition: "Ornamental nursery stock" means any plant being raised in a nursery for sale or distribution for a purpose other than producing a product intended for human ingestion within one year. (8)
Response	*The meaning of ornamental nursery stock is commonly understood to mean a product not for human consumption. No changes were made in response to this comment.*
9. Oxidized Wastewater, -0010(10)	• This definition is largely meaningless. Suggest either quantifying what is intended or deleting. It does not add clarity, only adds the potential for confusion. (10) • The definition of this term is vague and probably not enforceable. Water can have concentrations of say 0.5 mg/L dissolved oxygen and be a "reducing environment" of organics and bacteria. Please clarify the intended usage for this term in the rule and if it's enforceable. Another part of this definition is "stabilized organics" which is another vague term which needs more clarification, for an example, we use 38% volatile solid reduction as a measure of stability in organic under the biosolid rules, are we equating the recycle water use language to a similar standard? What is stability in recycled water? What units do we use to measure it in recycled water? (20)
Response	*The definition is adequate for the purpose of these rules, and is intended to address potential odor concerns resulting from a treatment process. No changes were made in response to these comments.*
10. Processed Food Crops, -0010(12)	The proposed definition is too narrow and should be broadened to allow the Department and regulated community more flexibility in measuring the performance for food processing. Furthermore, citing a single organism (i.e., *Clostridium botulinum*) in rule implies a mandate for permittees to monitor for this organism. Suggest definition as follows: "means food crops that have undergone commercial pathogen-destroying processing before being consumed by humans." (4)
Response	*The wording in the proposed definition is based on the standard food processing practice of thermal processing that is sufficient to kill Clostridium botulinum spores. The definition provides clarity for what type of food processing is required. The rules do not mandate a permittee to monitor for Clostridium botulinum, but rather the definition is a reference to a performance-based standard for thermal processing that is adequate to destroy pathogens. No changes were made in response to this comment.*
11. Recycled Water, -0010 (13)	Would this definition also apply to reclaimed industrial or agricultural wastewater? (7)

Response	*As stated in the definition, "recycled water means treated effluent from a wastewater treatment system…" "Wastewater" or "sewage" is defined in the rule as "means the water-carried human or animal waste from residences, buildings, industrial establishments or other places…" This division of rules does not apply to reclaimed industrial or agricultural wastewater. No changes were made in response to this comment.*
12. Sprinkler Irrigation, -0010(15)	• The proposed definition 340-05-0010(15) is difficult to implement and is an uncommon agronomic term. Suggest changing the term to "Spray Irrigation" and defining as follows: "means the application of recycled water to crops to maintain vegetation or support growth of vegetation by applying it from sprinklers." (4) • I suggest amending definition as follows: Sprinkler Irrigation, means an approved irrigation system *designed* to apply….so as to form a spray pattern. (20)
Response	*The use of "sprinkler irrigation" is consistent with the definition used by the Soil Conservation Society of America in their publication "Resource Conservation Glossary." The definition applies to the method of application and is consistent with how the rules address other irrigation methods. It is not the department's role to regulate the actual irrigation system, but to ensure recycled water is used in a manner that meets the requirements in the rules. No changes were made in response to these comments.*
13. Wastewater, -0010(16)	• Changing the term "sewage" to "wastewater" could be read to bring a much broader range of waste streams into the reuse rule regulation. For example, the rule would now appear to regulate CAFOs. The rule is not clear how to interact with the Department of Agriculture on CAFO re-use. (8) • The proposed rules have added animal waste to the definition of wastewater or sewage. This would then require confined animal feeding operations that collect, treat and apply animal wastewater to land for beneficial purposes to comply with the proposed rules. Is that what DEQ intends? (15)
Response	*See response to comment 11 above. The proposed definition is based on the statutory definition of "sewage" in ORS 468B.005(6). No changes were made in response to these comments.*
14. Wetlands, -0010(20)	EPA/COE enjoy the jurisdiction over Wetlands. Why not use their definition and be consistent. To wit: "Wetlands are lands where saturation with water is the dominant factor determining the nature of soil development and the types of plant and animal communities living in the soil and on its surface." (10)
Response	*The department's use of the proposed definition is consistent with other state regulations that were considered in the proposed rules The definition for wetlands is from the Oregon Department of State Lands administrative rules regarding removal-fill authorizations within waters of Oregon including wetlands [OAR 141-085-0010(226)]. No changes were made in response to this comment.*
Recycled Water Quality Standards and Requirements - OAR 340-055-0012	
1. Contract	• The current rules for reclaimed water require a contract between the sewage treatment plant operator and the user of the reclaimed water. This was intended to ensure that the plant operator was responsible for ensuring that reclaimed water was used in a manner consistent with the rules. The contract provision has been deleted from the proposed rules. This leaves the question of who will be responsible for monitoring and assuring that recycled water is appropriately managed. If the operator is not, who will? DEQ? Where will DEQ get the resources to do this? (15) • One of the major changes in the Recycled Water Use Rules is the doing away with contractual agreements between the generator/provider of reclaimed water and the end user. Please clarify the liability each party has at what points in the provider user relationship ("who" has control over treatment? and/or Distribution? and/or Use). Where, when does that liability transfers from provider to user…or does the liability remain with the provider? (20)

Response	*Due to legal reasons regarding the department's ability to oversee contracts, the proposed rules specifically state in OAR 340-055-0012(1) and (2) that "any person having control over the treatment or distribution or both of recycled water….ensure that recycled water is used only in accordance with the…rules of this division" and "any person who uses recycled water may only use recycled water for the beneficial purposes….and must comply with…rules of this division." These sections of the rule adequately address the need for anyone who treats, distributes, or uses recycles water to comply with these rules. The rules also state in 340-055-0016(1) that a wastewater treatment system owner may not provide recycled water for use unless authorized by a NPDES or WPCF permit; monitoring, criteria and other requirements will be addressed in the water quality permit. No changes were made in response to these comments.*
2. Responsibility for distribution and use of recycled water, -0012(1)	While this section is a good goal statement, it is worded as a requirement. It also talks about "reasonable steps" which is very open to interpretation. This statement would be much clearer if it was worded something like, "It is the responsibility of the person commencing treatment, distribution, or use of recycled water to use that resource in accordance with the intent, standards and requirements of the rules of this division." (17)
Response	*The intent of section (1) is to clarify what is required of anyone who treats or distributes recycled water and section (2) addresses what is required of a user of recycled water. These sections adequately address compliance responsibilities for the treatment, distribution, and use of recycled water. No changes were made in response to this comment.*
3. Edit language, -0012(2)	Change "Any person who uses recycled water may only use recycled water for the beneficial purposes described in this rule and must comply with the standards and requirements of this rule and the rules of this division" to "Any person who uses recycled water may only use recycled water in a manner described in this rule, and must comply with the standards and requirements of this division." (7)
Response	*This section is adequately stated to address what is required of a user of recycled water. The proposed language in the comment (i.e., in a manner) is not inclusive of all requirements of the rules. No changes were made in response to this comment.*
4. Responsibility for compliance, -0012(2)	How is OAR 340-055-0012(2) enforceable against an end user without some legal and binding agreement? Is an authorization to use recycled water tied to the life of the permit (5 yrs)? Is there a mode for terminating authorizations based on poor management and/or operational practices by treatment and/or end users? (20)
Response	*The intent of section (2) is to address what is required of a user of recycled water; there does not need to be a legal agreement for the department to enforce against if a user is not in compliance with the rules. Section (1) also states that any person who treats or distributes recycled water must take all reasonable steps to ensure that the recycled water is used only in accordance with rules of the division. How this is achieved, for example through a contract or authorization between the user and a person who treats or distributes recycled water, is not the department's decision. The rules also state in 340-055-0016(1) that a wastewater treatment system owner may not provide recycled water for use unless authorized by a NPDES or WPCF permit. The use of recycled water is regulated through these rules, the NPDES or WPCF permit, and the recycled water use plan, and the department may take enforcement action based on noncompliance with any of these. No changes were made in response to these comments.*

5. Additional section references, -0012	There are a number of locations where sections have been added to state that users of recycled water must comply with the regulations. There are two distinct uses – one as an entry to which beneficial uses are allowed and a second to reiterate that subsequent rules are required to maintain compliance. The regulation header {0012 Section (2)} is sufficient to regulate users to all following sub-header requirements. For the two scenarios I suggest the following: i. Rewording the Beneficial Purpose lists to remove the requirement reiteration and simply state the (a) sub portion in the main sentence. For instance section (4)(a) could be reworded: "(a) Beneficial purposes defined in subsection (3)(a) plus: (A- *new*) Irrigation of firewood, ornamental nursery stock, Christmas trees, sod, or pasture for animals." Sections that should be reworded include: (4)(a), (5)(a), (6)(a) and (7)(a). ii. Having individual regulatory reminder sub-sections serves no purpose given the overarching statement in section (2) and the fact that they are a regulatory sub-header to the individual water class sections gives sufficient regulatory authority. Therefore the following sub-sections should be removed for enhanced clarity: (5)(f)(A), (5)(g)(A), & (6)(g)(A). (17)
Response	*The department believes the wording as proposed in the rule under OAR 340-055-0012(2) clarifies what the responsibility is for a user of recycled water. In subsequent sections and subsections of this rule, although the wording may seem redundant it provides added meaning to the context of the rule. No changes were made in response to this comment.*
6. Beneficial purposes, -0012	With more end uses one would assume there would be more safe guards and accountability of the beneficial use, and that these safeguard must be in place to ensure minimal risk to public health and the environment. The treatment levels of recycled water are pretty much a carry over from the past version of the rule (Level 1-4). What additional and enforceable measures are in place that address the current and new beneficial uses in this revised rule? What are the minimum standards in this rule (e.g., Recycled Water Use Plan) for defining, monitoring and tracking beneficial use of Class B, C, and D recycle waters. (20)
Response	*The new beneficial purposes in the proposed rules were classified based on potential public exposure to the use and environmental protection considerations. Proposed requirements for setbacks, access and exposure, site management, and a recycled water use plan address how the use will be regulated. The requirements for what to include in a recycled water use plan have been expanded to clarify what a recycled water use plan must include for all classes of recycled water. No changes were made in response to these comments.*
7. Beneficial purposes, -0012	No mention is made of use of recycled water for washing of sidewalks, train or bus platforms, driveways, patios, or other paved surfaces that aren't covered by "street sweeping". Some or all of these uses should probably be permitted with some class of recycled water. (12)
Response	*The proposed beneficial purposes (i.e., end uses) identified in the rules were based on categories, such as irrigation or commercial uses, of recycled water applications that would most likely be of interest to cities in Oregon. The Water Reuse Task Force discussed beneficial purposes and the uses stated in this comment were not identified as needing to be included in the rules. The department recognizes the stated beneficial purposes as not being inclusive of all potential uses. The rules under OAR 340-055-0016(6) do allow the department to authorize other recycled water uses and in doing so will confer with the Oregon Department of Human Services. No changes were made in response to this comment.*
8. Nondisinfected recycled water, -0012(3)(a)	Change "Nondisinfected recycled water may be used only for the following beneficial purposes and only if the rules of this division are met: direct irrigation of soil..." to "Nondisinfected recycled water use is restricted to: direct irrigation of soil..." (7)
Response	*This subsection is adequately stated. No changes were made in response to this comment.*

9. Direct irrigation, -0012(3)(a)	"Direct irrigation", first used in 0012.3.a, is not defined. Section 0012.4.e.A uses the phrase "Where an irrigation method is used to apply recycled water directly to the soil...". Also 5.a.C, 5.e.A, and 6.e.A. Is "drip irrigation a form of direct irrigation? (12)
Response	*DEQ has deleted "direct" in subsection -0012(3)(a). Drip irrigation could be a method of direct irrigation. No changes were made in response to these comments.*
10. Setbacks to a supply source for human consumption, -0012(3-6)(e)	• There are many setback references to protect water sources used for human consumption. Do you mean direct drinking water consumption? What about waters used for irrigation of crops for human consumption? Might be best to replace with "direct" human consumption to allow for closer recycled water irrigation to waterways used for crop irrigation. Perhaps a cross reference that this issue will be addressed in the specific site management plan would resolve the concern. (17) • "Water supply source used for human consumption" is used in a number of locations, such as 0012.3.e, 4.e.C, 5.e.C, and 6.e.C. Is this pertinent only if the water supply source is exposed to air? Does it pertain if the source is subsequently treated (i.e., downstream)? (12)
Response	*"Human consumption" is defined in the definition rule under OAR 340-055-0010(6). This definition does not refer to water used for irrigation purposes. The term is adequately used in the context of the proposed rules.* *A water supply source could mean surface water or groundwater. It is irrelevant if the source is treated or not with regards to the context in which "water supply source" is used in the rules.* *No changes were made in response to these comments.*
11. Edit language for recycled water use plan, -0012(3)(e)	• Change "...established in the recycled water use plan and..." to "...established in the DEQ sanctioned recycled water use plan and..." (7) • Section 0012.3.e mentions "the recycled water use plan", but this has not been defined or mentioned previously. Same suggestion for 4.g.B and 5.g.C and 6.g.C. (12)
Response	*The need for a recycled water use plan is addressed in OAR 340-055-0016(2); this section states that prior to a wastewater treatment system owner providing recycled water for distribution or use, a recycled water use plan has to be approved in writing by the department. It is not necessary to state throughout the rules that reference a recycled water use plan, that the plan must be DEQ sanctioned. No changes were made in response to these comments.*
12. Access and Exposure, -0012(3)(f)	How – signs, fences, other means? (7)
Response	*There are several methods in which public access could be restricted. It is not the intent of this rule to specify how it should be done, but rather that it should be done. The IMD will provide guidance on what methods could be considered to restrict access. No changes were made in response to this comment.*
13. Edit language, site management, -0012(3)(g)(A)	Add words for clarity: "Irrigation **with recycled water** is prohibited for 30 days before harvesting. (12)
Response	*DEQ has made the suggested change.*
14. Edit language, site management, -0012(3)(g)(B)	Change sentence to say "...sprinkler irrigation may *be* used..." (2)
Response	*The language in this sentence has been clarified to read "Sprinkler irrigation is prohibited unless authorized in advance and in writing by the department...." No change was made in response to this comment.*

15. Edit language, Class D, -0012(4)(a)	Change "...recycled water may be used only for the following beneficial purposes and only if the rules..." to "...recycled water use is limited to the following beneficial purposes provided the rules..." (7)
Response	*This subsection is adequately stated. No changes were made in response to this comment.*
16. Class D beneficial purposes, -0012(4)(a)	The list of allowable uses should be expanded for Class D recycled water (secondary treatment with disinfection) to include: 1) orchards and vineyards if an irrigation method is used to apply recycled water directly to the soil, 2) processed food crops, 3) mixing concrete, 4) rock crushing, 5) aggregate washing, 6) street sweeping, 7) dust control, 8) commercial car washes and (9 environmental uses such as wetlands, marshes, wildlife habitat and stream augmentation. The additional allowed uses for Class D recycled water described above are included in the *2004 EPA Guidelines For Water Reuse* and have been adopted into regulation in other States. The additional allowed uses for recycled water reflect an increased national knowledge and successful experience with recycled water. The revised Rule as proposed is insufficient in promoting the expanded use abundant, low cost Class D recycled water already produced by most Oregon communities. (5)
Response	*The department added the proposed Class D recycled water in the rules to address the use of this quality of water for limited irrigation purposes. Class D recycled water is based on the E. coli standard that is used for surface water discharges. The department believes the uses proposed in the rules are appropriately classified based on potential public exposure and environmental protection, and more stringent requirements including pathogen criteria are appropriate for the uses stated in the comment. No changes were made in response to this comment.*
17. Class D beneficial purposes, -0012(4)(a)(B)	Regarding "Irrigation of firewood" – firewood is often harvested from commercial timber sites during thinning operations...would -0012(3) or (4) apply here? I recommend firewood be considered under 0012(3). (7)
Response	*The irrigation of firewood has greater potential for public exposure than for irrigation of commercial timber. If firewood is harvested from a commercial timber site where nondisinfected recycled water is used, the site management requirement that prohibits irrigation with recycled water for 30 days prior to harvesting must be met. No changes were made in response to this comment.*
18. Class D end of treatment, -0012(4)(b)	Because there are many "types of treatment" for various compounds and organisms" in the recycled water why isn't there a definition/explanation of "end of treatment"? End of treatment for organisms like E. coli could be after the disinfection system at the wastewater treatment facility, where as another wastewater constituent like Phosphorus may be removed at a different part of the treatment process (for example at the end of a wetland where bacterial regrowth issues may arise). Does the user or the provider with multiple "end of treatment points" have to monitor beneficial use and report? If wetlands are considered water of the state then are all permit limits and monitoring collected at inlet into the wetland? If we were using, for example, NPDES discharge limits for (Level II) Class C recycled water, how would we regulate an off facility pond in which the end users has access for irrigation on public and private properties? (20)
Response	*The "treatment" subsections in OAR 340-055-0012 state what treatment is required for each class of recycled water and that the numeric criteria in the "criteria" subsections must be met. Monitoring points for compliance purposes should be included in a permit and will be permit specific. Monitoring points will depend on the criteria to be monitored for, what the treatment train is, and at what point the recycled water is released for use as a beneficial purpose. The beneficial purposes for which the recycled water is used must be identified in the recycled water use plan. The IMD will further address monitoring and sampling issues. No changes were made in response to these comments.*
19. Class D bacteria criteria, -0012(4)(c), (5)(c), (6)(c), (7)(c)	Are coliform organisms the only ones to be monitored and treated? Do additional contaminants (such as cryptosporidium and giardia) need to be detected and treated to appropriate degrees? (12)

Response	*Coliform organisms are the only indicators of bacterial pathogens that are required to be monitored for under these rules. Studies have shown that coliform tests are good indicators that pathogens have been reduced or eliminated in properly designed and operated wastewater treatment systems. Chlorine residual, ultraviolet light intensity and turbidity are also often required to be monitored as indicators of disinfection effectiveness and pathogen destruction. Additional microbial constituents that potentially could be present in wastewater are numerous, and required monitoring for all possible constituents is not practical. The value of monitoring for surrogate microorganisms is to estimate the presence of pathogens in a timely manner so adjustments to the treatment system can be made. The time required to analyze many of the other microbial constituents is not of much value for water quality control purposes. Cryptosporidium and giardia occur in much lower concentrations in raw wastewater than coliform organisms and are generally removed or destroyed more effectively during the treatment process. No changes were made in response to this comment.*
20. Class D bacteria criteria, -0012(4)(c)	Section 0012.4.c mentions "E. coli organisms", while similar criteria in sections 5.c, 6.c, and 7.c refer to "coliform organisms". If the same is intended, the same phrase should be used. (12)
Response	*There are criteria for two microbial pathogen indicator organisms in the proposed rules, E. coli and total coliform. These are two different coliform bacteria and are correctly stated in the rules in reference to the recycled water criteria. No changes were made in response to this comment.*
21. Setback distances for Classes C and D recycled water, -0012(4)(e) & (5)(e)	The proposed buffer distances should be reduced to 5 feet for Class C and Class D recycled water. The proposed buffer distance is a strong disincentive to recycling agricultural land. Buffer strips 1) create significant areas of unirrigated, less or non productive acreage, 2) become a management issue for seeds and other pests, and 3) make recycled water less competitive with other sources of irrigation water. (5)
Response	*Buffer distances, or setbacks, provide a necessary margin of safety to protect public health by preventing human contact with the recycled water. The proposed rules in OAR 340-055-0016(7) allow DEQ to consider and approve alternative setback distances on a case-by-case basis. It is not the department's intent to create a disincentive to using recycled water for irrigation on agricultural land, but to consider the need to protect public health based on the quality of the recycled water. No changes were made in response to this comment.*
22. Class D setback distances, -0012(4)(e)(B)	The proposed language states: Where sprinkler irrigation is used, there must be a minimum of 100 feet from the edge of the site used for irrigation and the site property line. I suggest the elimination of this requirement to facilitate the development and increased beneficial uses of reclaimed water for large scale agricultural projects. Large scale, rural agricultural irrigation projects will be hesitant to adopt the use of recycled/reclaimed water if a significant portion (100 ft. setbacks) of the crop land cannot be irrigated due to the setback restriction. The elimination of the 100 foot set back requirement will stimulate the development of large scale recycled water irrigation projects and dramatically increase the volume of reclaimed water that can be safely used in the production of feed, fodder, fiber, pasture, Christmas trees, seed crops, and ornamental nursery stock while decreasing the need for quality surface and groundwater currently used for irrigation purposes. An example of this management practice can be found in OAR 340 Division 50, the biosolids rule. This rule assumes restricted public access to private, rural, farm land and contains allowances for the land application of Class B biosolids within 10 feet of property lines. This practice has been in place for several years and has proven to be very effective in the protection of public health and the environment and has not been an impediment to the beneficial use of biosolids in the farming community. (1)
Response	*See response to comment 21 above regarding setback distances. No changes were made in response to this comment.*
23. Edit language, -0012(4)(e)(D)	Small wording suggestion – "...must not be sprayed within 70 feet **of** an area where food is prepared..." Same suggestion for 5.e.D and 6.e.D. (12)
Response	*DEQ has made the suggested change.*

24. Site access limitations for Classes A-D, -0012(4-7)(f)	Is site access a permanent condition or must access be prohibited only for the duration of the application of reuse waters? We have a variety of stormwater reuse sites where limitation of access during and one hour after irrigation is an alternative to full disinfection of waters for use. While these rules are limited to wastewater reuse, could a similar temporary exclusion be used? Would this be another specific site management plan item? (17)
Response	*Site access requirements are stated in the rules and the rules do not imply site access to be a permanent condition. Depending on the quality (i.e., class) of recycled water being used, the public may be required to be restricted from direct contact with the recycled water or there may be a notification requirement to the public and personnel at the use area. If notification is required, the rules state the recycled water use plan must include how notification will be provided. No changes were made in response to this comment.*
25. Edit language, -0012(4)(f)(A)	Small wording suggestion – "...must be restricted from direct contact **with** the recycled water." (12)
Response	*DEQ has made the suggested change.*
26. Edit language, -0012(4)(f)(B)	Small wording suggestion – "...The recycled water use plan must **specify** how notification will be provided." Same suggestion for 5.f.D and 6.f.C and 7.f and 7.g. (12)
Response	*DEQ has made the suggested change.*
27. Edit language for Class D signage, -0012(4)(g)(A)	Change to say "When irrigating, signs must be posted around the perimeter of the irrigation site stating *that the water being used for irrigation is not safe for drinking.*" The issue is the contact with non-potable water, not whether or not that non-potable water comes from an irrigation canal or is recycled water. (2)
Response	*The purpose for the information required on a sign is to inform and educate a person who is near a site or location where recycled water is used. DEQ believes the sign should state what the water is and that it is not safe for drinking. Stating "recycled water is used" is important in gaining public awareness of using recycled water as a resource. OAR 340-055 -0012(4)(g)(A) adequately states what information must be stated on a sign. No changes were made in response to this comment.*
28. Class D site management, -0012(4)(g)(A)	Sections such as 0012.4.g.A indicate that signs must be "...posted around the perimeter ..." Neither this section, nor the others like it in 5, 6, or 7, nor the text describing the Recycled Water Use Plan gives an indication as to where such signs should be placed, how many should be placed, or how far apart. In the absence of criteria, it may be difficult in some case to develop a use plan that is both safety – effective and cost-effective without multiple iterations through the Department for review and comment. (12)
Response	*Each recycled water use plan will be site specific and must reflect compliance with the rules. The department cannot justify including specifics in rule language, as stated in the comment, due to site specific considerations for each recycled water use project such as location of the irrigated site with respect to population, development, and the size of the irrigation site. The IMD will address this comment. No changes were made in response to this comment.*
29. Class D site management, -0012(4)(g)(B)	Modify rule language to read "...is prohibited for seven days following the last compliant bacteriological samples before harvesting." I would suggest reviewing all of the "Site Management" rules for the disparity between monitoring frequency and site access and use. None of them correlate sampling compliance with water use and should be revised to protect the users and the public. (10)
Response	*The department has reviewed the "Site Management" rules and believes the requirements are adequately stated with regards to monitoring frequency for bacteria. OAR 340-055-0025(1)(d) requires that the recycled water use plan must include a description of contingency procedures that ensure the rule requirements are met when recycled water is provided for use. No changes were made in response to this comment.*
30. Class C recycled water, -0012(5)	Class C recycled water: Irrigation of golf courses and median 23 coliform per 100 ml are not consistent with an unfiltered effluent. With those intended uses and performance, Class C should include filtration. (10)

Response	*A significant number of golf courses in Oregon currently use Class C quality recycled water. Wastewater treatment facilities using activated sludge and fixed film processes routinely meet the bacteria criteria for Class C recycled water without filtration when the disinfection system is properly designed. Because of high algae concentrations, many wastewater lagoon systems cannot consistently meet the criteria without filtration prior to disinfection. However, good results have been achieved by using lagoon covers to create a quiescent settling zone to clarify the water prior to disinfection. Therefore, the department does not believe that filtration is necessary for Class C recycled water. No changes were made in response to this comment.*
31. Edit language, - 0012(5)(a)	Change "...recycled water may be used only for the following beneficial purposes and only if the rules of this division are met:" to "...recycled water use is restricted to the following beneficial purposes:" (7)
Response	*This subsection is adequately stated. No changes were made in response to this comment.*
32. Add use for structural firefighting Class C, - 0012(5)(a)(E)	As I read the proposed rules, it seems that non-structural fire fighting uses are permitted. There is no good reason to restrict fire uses in that manner. This may be an aesthetic issue, but the water used on a fire, potable or otherwise is not the source of significant hazard. The fire residue is far more hazardous. These discharges can safely be used for structural firefighting and can enhance the supply available and assist communities to meet water system capacity requirements. We ask that you consider this further rule expansion of the rules. (3)
Response	*The proposed beneficial purposes (i.e., end uses) identified in the rules were based on categories, such as irrigation or commercial uses, of recycled water applications that would most likely be of interest to cities in Oregon. The department recognizes the stated beneficial purposes as not being inclusive of all potential uses. The use of recycled water for structural fire fighting purposes may be very restrictive to a community based on distribution system and cross-connection control requirements. The rules under OAR 340-055-0016(6) do allow the department to authorize other recycled water uses and in doing so will confer with the Oregon Department of Human Services. No changes were made in response to this comment.*
33. Edit language, - 0012(5)(a)(F)	Replace the term "water ponds" and "landscape ponds" to "impoundments" to be consistent with definitions provided in Section 0110 of the Reclaimed Water Rules. (4)
Response	*In response to this comment, the definition of landscape impoundment was modified for clarity, and the term "landscape pond" was deleted where it was used in the rules.*
34. Class C signage of landscape impoundments, - 0012(5)(a)(F)	Section 0012.5.a.F permits use of landscape impoundments. Should these be posted with signs stating that the water is not safe for drinking, such as on golf courses? (12)
Response	*OAR 340-055-0012(5)(g)(B) requires posting signs at these use areas stating recycled water is used and is not safe for drinking. No changes were made in response to this comment.*
35. Class C criteria, - 0012(5)(c)	Section 0012.5.d indicates that monitoring should be done at least weekly, but section 0012.5.c requires figures based only on the last seven days. Should 5.c be re-worded "based on results of the last seven **analyses that have been completed** ..." (12)
Response	*The proposed rule language in the comment could mean seven analyses completed over the period of an undetermined amount of time (e.g., one day or several months). The intent of the proposed criteria rule is that it is based on samples collected during a finite period of time that is appropriate for total coliform and is representative of treatment facility operating conditions. The seven days do not have to be consecutive days. The IMD will clarify what a monitoring scenario could be that will comply with this rule. No changes were made in response to this comment.*

36. Class C setback distances, - 0012(5)(e)(B)	• The proposed language states: Where sprinkler irrigation is used, there must be a minimum of 70 feet from the edge of the site used for irrigation and the site property line. I suggest the elimination of this requirement to facilitate the development and increased beneficial reuse of reclaimed water for large scale agricultural irrigation projects. Large, rural agricultural irrigation projects will be hesitant to adopt the use of recycled/reclaimed water if a significant portion (70 ft. setbacks) of the crop land cannot be irrigated due to the setback restriction. The elimination of the 70 foot set back requirement will stimulate the development of large scale recycled water irrigation projects and dramatically increase the volume of reclaimed water that can be safely used in the production of feed, fodder, fiber, pasture, Christmas trees, seed crops, and ornamental nursery stock while decreasing the need for high quality surface and groundwater currently used for irrigation purposes. An example of this management practice can be found in OAR 340 Division 50, the biosolids rule. This rule assumes restricted public access to private, rural, farm land and contains allowances for the land application of Class B biosolids within 10 feet of property lines. This practice has been in place for several years and has proven to be very effective in the protection of public health and the environment and has not been an impediment to the beneficial use of biosolids in the farming community. (1) • There is a lack of scientific evidence to suggest that a mandatory setback distance of "70 feet" is necessary to provide adequate protection to the environment or public health when sprinkler (spray) irrigation is used. Suggest changing this minimum mandatory setback distance to "50 feet" and have the Department mandate by permit a greater distance when it may be warranted. (4)
Response	*See response to comment 21 above regarding setback distances. No changes were made in response to these comments.*
37. Class C setback distances, - 0012(5)(e)(D)	Where sprinkler irrigation is used, recycled water must not be sprinkled within 70 feet of an area where food is prepared or served, or where a drinking fountain is located or within 70 feet of buildings or habitation. (10)
Response	*The department believes the access and exposure requirements in this section of the rule are adequate to address concerns of human contact with recycled water during irrigation. No changes were made in response to this comment.*
38. Edit language, - 0012(5)(f), (5)(g) and (6)(g)	The format of (5)(f), (5)(g) and (6)(g) should be changed. Article (A) under each should be included with the heading as the first sentence. Subsequent articles (B), (C), etc. should then become (A), (B), etc. The language in the first sentences should be changed as follows: "(5)(f) Access and Exposure. When irrigating for a beneficial purpose listed in subsection (*5*)(a) of this rule, the *following* access and exposure requirements must be met:" "(5)(g) Site Management. When irrigating for a beneficial purpose listed in subsection (*5*)(a) of this rule, the *following* access and exposure requirements must be met:" "(6)(g) Site Management. When irrigating for a beneficial purpose listed in subsection (*6*)(a) of this rule, the *following* access and exposure requirements must be met:" (2)
Response	*The "access and exposure" and "site management" subsections pertain to what must be done for specific recycled water beneficial purposes. Irrigation in -0012(5)(a) and (6)(a) is allowed for different beneficial purposes, including those stated in subsection -0012(4)(a. If changes were made as suggested, the intent of the subsections would change. "Access and Exposure" and "Site Management" were included as subsection headers to improve the readability of the rules. No changes were made in response to these comments.*
39. Aerosols for Classes B and C, - 0012(5)(f)(C) and (6)(f)(B)	Sections 0012.5.f.C and 6.f.B specify that "...aerosols must not create a public health hazard" without defining levels or types of exposure that constitute a health hazard. Aerosols, mentioned in 0012.3.g.B, 5.f.C, 5.g.E, 6.f.B, and others, are not defined as to the density that could cause problems. (12)

Response	*National research is lacking on the impacts of aerosols resulting from the use of recycled water. Stating specific aerosol densities at this time are not practical and would not be scientifically based. Bacteria and viruses are known to be in wastewater and by stating pathogen criteria in OAR 340-055-0012, the department believes potential health risks are minimized. Operational measures and site management requirements also will limit potential public exposure to aerosols. DEQ believes these paragraphs of the rules are adequately stated with the intent to protect public health. No changes were made in response to this comment.*
40. Edit language for Class C signage, -0012(5)(g)(B)	Change (5)(g)(B) to (5)(g)(A) as mentioned above, and also change the last sentence to read "*The signs state that the water being used is not safe for drinking.*" (2)
Response	*See responses to comments 27 and 38 above. No changes were made in response to these comments.*
41. Edit language, -0012(5)(g)(B)	Various sub-sections reiterate which uses are allowed for a specific water Class. In the following locations those lists are inconsistent: i. (5)(g)(B) allows for use of Class C water on landscape areas without frequent access which is not a use identified in section (5)(a). I would add infrequent use landscape areas to (5)(a)(D). Also the (5)(g) list does not include the construction uses where signage about non-potability might be even more critical. Was this intentional? Section (7)(f) implies construction employees should know about recycled water use. ii. Section (6)(g)(B) has the same discrepancy issue, allowing for areas without frequent public access. (17)
Response	*With regards to the comment about landscape areas without frequent access, the department has deleted this phrase from the proposed rule as it was in conflict with the intent of allowing irrigation at a site where the public may have access.* *With regards to the comment about signage at a construction site, the proposed rules in sections 5, 6, and 7 do include a requirement under access and exposure that "the public and personnel at the use area must be notified that the water used is recycled water and is not safe for drinking." No changes were made in response to this comment.*
42. Class C beneficial purposes, -0012(5)(g)(B) and (C)	(B) Suggest delete use of Class C recycled water for industrial or business campuses or golf courses. The public exposure is uncontrollable and access is unavoidable. It is important to deal with reality in these matters, in spite of current practices, if the intent is the protection of public health. (C) And again, this section of the rules makes no connection between the demonstrated compliance with bacteria limits and the time of use of the water. Same for Class B. (10)
Response	*A significant number of golf courses in Oregon currently use Class C recycled water. The department is not aware of any recorded human disease incidences where Class C recycled water has been used at a golf course in Oregon. Public exposure at golf courses is minimized through site management practices, such as irrigating during the evening when the public is not on the course. The department believes the site management and access and exposure requirements adequately address minimizing public exposure to recycled water and making the public aware of the use of recycled water. No changes were made in response to these comments.*
43. Edit language, -0012(6)(a)	Change "...recycled water may be used only for the following beneficial purposes and only if the rules of this division are met:" to "...recycled water <u>use is limited to</u> the following beneficial purposes:" (7)
Response	*This subsection is adequately stated. No changes were made in response to this comment.*

44. Class B setbacks for food service, -0012(6)(e)(D)	Class B waters are not allowed to be sprayed within 10 feet of a food preparation or service area. What about locations where there may be annual event related temporary food service? For instance the City race track (PIR) might one day have recycled water irrigation, but also has approximately 20 events a year that have temporary food stalls within 10 feet of the irrigated areas. What about allowing a time frame for temporary services? Maybe stating all areas used for temporary food service must not be irrigated within 3 days before the event? Perhaps another specific site management plan reference would suffice. (17)
Response	*This setback distance is to provide a margin of safety to protect public health by preventing human contact with the recycled water when irrigation is occurring, and was determined based on the quality of recycled water. The intent of the rule is to not restrict the use of the site when irrigation is not occurring. The rule language was clarified to read..."where food is being prepared or served,..." Changes to the setback rule language (to include "being") for this activity were also made in the rule for Class C and Class A recycled water.*
45. Edit language for Class B notification, -0012(6)(f)(C)	Change the first sentence in to read "...must be notified that the water used is *not safe for drinking."* (2)
Response	*The first sentence was edited to include "...and is not safe for drinking." See response to comment 27. The notification requirement language under the "Access and Exposure" subsections for Classes A, C, and D were also modified to be consistent. No changes were made in response to this comment.*
46. Edit language, -0012(7)(a)	Change "...recycled water may be used only for the following beneficial purposes and only if the rules of this division are met:" to "...recycled water use is limited to the following beneficial purposes:" (7)
Response	*This subsection is adequately stated. No changes were made in response to this comment.*
47. Class A beneficial purposes, -0012(7)(a)(D)	Commercial car washing is permitted for Class A recycled water, but no mention is made of washing other vehicles such as trucks, buses, rail cars, aircraft, or boats. Perhaps it should read "commercial washing of vehicles"? Perhaps with a further restriction to land-based washing (i.e., no washing boats on a river, unless DEQ prefers to permit that). (12)
Response	*The proposed beneficial purposes (i.e., end uses) identified in the rules were based on categories, such as irrigation or commercial uses, of recycled water applications that would most likely be of interest in Oregon. The department recognizes the stated beneficial purposes as not being inclusive of all potential uses. The rules under OAR 340-055-0016(6) do allow the department to authorize other recycled water uses and in doing so will confer with the Oregon Department of Human Services. No changes were made in response to this comment.*
48. Edit language, -0012(7)(a)(E)	Delete "Nonrestricted recreational impoundments include, but are not limited to, recreational lakes, water features accessible to the public, and public fishing ponds." Redundant – covered under OAR ... 0007(8) [should be 0010(8)]. (7)
Response	*DEQ has made the suggested change.*
49. Class A beneficial purposes, -0012(7)(a)(F)	Disallowing the direct injection of highly treated recycled water (i.e., Class A or better) into an underground source of drinking water, but allowing artificial groundwater recharge by other means (i.e., the use of an underground injection system that is just immediately above an underground source of drinking water) is not justified for the protection of the environment and public health. The use of an injection system often is the only operational means that a recycled water permittee has to manage an artificial groundwater recharge program because of the storage capacity (e.g., the use of storage lagoons to hold millions of gallons of recycled water in an urban landscape) that is required if they cannot inject water. The Department should modify OAR 340-044 during this rulemaking process to allow for the direct injection of highly treated recycled water into an underground source of drinking water. (4)

Response	*The department recognizes the need to address this issue through revisions to OAR 340-044 rules (underground injection control). The department did not believe it was prudent to open just one rule of OAR 340-044 as the entire division of rules needs to be addressed through another rulemaking effort that will include recent legislation impacting the underground injection control program. The department also needs to consider EPA involvement and review of any revisions to the UIC program rules. No changes were made in response to this comment.*
50. Edit language regarding Division 44, -0012(7)(a)(F)	A minor clarification might be made to the portion of the rule related to Division 44. For instance, the existing OAR Division 44 might be amended, but the portion of the rule related to recycled water might not be amended. We suggest this revision to OAR 340-055-0012(7)(a)(F): *(F) Artificial groundwater recharge by surface infiltration methods … source of drinking water is prohibited unless allowed by OAR chapter 340, Division 44 [~~is amended~~].* (6)
Response	*DEQ has made the suggested change.*
51. Edit language regarding Division 44, -0012(7)(a)(F)	Artificial groundwater recharge by surface infiltration methods or by subsurface injection must be in accordance with OAR chapter 340, division 44. Direct injection into an underground source of drinking water must comply with ORS 537.532. (10)
Response	*If recycled water is used for direct injection into an aquifer, OAR 340-055-0025(3)(e) requires verification from the Oregon Water Resources Department (WRD) that a request for authorization of the use has been initiated. DEQ and WRD believe the rules adequately address direct injection in the context of using recycled water for this purpose. No changes were made in response to this comment.*
52. Edit language, -0012(7)(c)	Change (7)(c) to read "Criteria. Class A recycled water must *meet* the following criteria;" (2)
Response	*This subsection is adequately stated. No changes were made in response to this comment.*
53. Class A criteria (filtration prior to disinfection), -0012(7)(c)(A)	Remove the requirement for filtration prior to disinfection for Class A recycled water. Overall, the rules are moving to a performance standard – this one remnant of detailing the specific order of the treatment train should be eliminated. (1, 5, 6)
	The proposed rule is predominately a performance based rule, with this exception. Requiring filtration prior to disinfection will negatively impact the ability of municipalities to retrofit filtration processes into existing treatment trains and have the undesired effect of discouraging the highest level of recycled water treatment and the ability to maximize the beneficial reuse of recycled water. (1)
	Delete "*Before disinfection" from* (7)(c)(A) and delete "*After disinfection*" from (7)(c)(B). There are existing facilities with excellent track records that operate differently. It's the result that counts. (2)
	A requirement to disinfect "after" filtration provides no human health benefit as opposed to disinfection prior to filtration. The performance standard of the finished water must be achieved with either approach. The requirement as proposed severely compromises the ability of Corvallis and other communities to retrofit a Class A treatment process into existing facilities due to cost and conflict with existing infrastructure. (5)
	The standards are very stringent and the consulting engineers will need to ensure they design a system to meet them, regardless of whether or not the system filters first or disinfects first. (6)
	This rule appears to be a holdover from the technology based approach where the remainder of the rule is performance based. The rule requires filtration prior to disinfection along with the performance based specifications. We suggest making this section consistent with the remainder of the rule by removing the technology based requirements and retaining the performance based requirements. (8)

	The City of Ashland is very interested in furthering our ability to use recycled water as part of our long-range "*Right Water for the Right Use*" program. We strive to meet very stringent standards for unlimited use and expect to meet Class A standards once the regulations and finalized. We request that DEQ review and remove the requirement for filtration prior to disinfection for Class A recycled water. With the revised rules moving to a performance standard, this one instance of specificity regarding the treatment process order should be eliminated. The standards are clearly and necessarily very stringent and the finished recycled water must be able to meet the final standards, regardless of whether or not the process filters or disinfects first. We recommend removing any language with regard to process order. (18)
	We suggest this revision: *(c) Criteria.* Class A recycled water must not exceed the following criteria: *(A)[~~Before disinfection~~.]* The wastewater must be treated with a filtration process, and the turbidity ... *(B) [~~After disinfection~~] Class A recycled water must not exceed ...* (2, 5, 6, 18)
Response	*DEQ as a state regulatory agency has the responsibility of protecting public health and the environment through these administrative rules. Public health protection in the context of wastewater treatment is accomplished through "barriers" from pathogenic organisms. These barriers can be either in the form of site restrictions (e.g., limitations to public access, setbacks, etc.) or in the form of advanced treatment and destruction of pathogens. In the case of Class A recycled water, there are no barriers in the form of site restrictions. Therefore, the public must be assured that the recycled water is pathogen free at all times. As discussed above, the rules do not require monitoring of pathogens, but instead require periodic (daily) coliform monitoring as an indicator of disinfection efficiency. Hourly turbidity monitoring is required for Class A recycled water as an additional indicator of the effectiveness of the disinfection system. Turbid particles shield pathogens from disinfecting agents, such as ultraviolet light and chlorine. If the turbidity criteria are not met prior to disinfection, pathogens may be shielded and may survive the disinfection process. Subsequent filtration may shear the particles releasing the surviving pathogens, which may include viruses. Because viral pathogens would be a primary concern in this case, subsequent bacterial testing would not be a useful indicator of the pathogen content of the recycled water. The department is not aware of any studies that show conclusively that this is not a concern. Additionally, the states of California, Washington, and Idaho all require that the turbidity criteria be met prior to disinfection for the use of high quality recycled water. The department has added language to -0012(7)(c)(A) that would allow an alternative to this process, if approved in writing by the department.*
54. Class A criteria, -0012(7)(c)	Another approach to eliminate the need for tankage and contact time following filtration is to add a requirement to 1) re-chlorinate or 2) maintain a chlorine residual at the point of use, when pre-filtration disinfection (including contact time) has been provided. (5)
Response	*The proposed rules specify turbidity critieria (prior to disinfection) and coliform criteria (after disinfection), and don't specify a minimum contact time, a minimum chlorine residual, or a disinfection method. Engineered plans for each system will need to be reviewed and approved by one of the department's plan review engineer. The design of the system will be evaluated on a case-by-case basis based on standard engineering practices. For example, chlorination systems are generally expected to be designed for 1 mg/l residual after 60 minutes of contact time. Site specific operating requirements, such as minimum chlorine residual and monitoring locations will be specified in permits. No changes were made in response to this comment.*
55. Class A setback distances and food preparation, -0012(7)(e) and (g)	(7)(e) and (g) seem to send different messages. Setback Distances says that the water shouldn't spray onto food prep surfaces "Site Management" says that signs must be posted that water "is not safe for drinking". Certainly, the latter is true. Setback distances should be established with reasonable assurance that no contamination of food service are will be likely. (10)
Response	*DEQ believes the rule is not confusing and is adequately stated. No changes were made in response to this comment.*
56. Edit language for Class A notification, -0012(7)(f)	Change the first sentence in (7)(f) to read "...must be notified that the water used is *not safe for drinking.*" (2)

Response	*The first sentence was edited to include "...and is not safe for drinking." See response to comment 45.*
57. Edit language for Class A signage, -0012(7)(g)	Change the first sentence in (7)(g) to read "...at the area indicating *that the water used is not safe for drinking.*" (2)
Response	*This paragraph, -0012(7)(g), is adequately stated regarding what information must be stated on a sign. See response to comment 27. No changes were made in response to this comment.*
Exempted Use of Recycled Water - OAR 340-055-0013	
1. Edit language, -0013(3)	Aerosols must not create a public health hazard; and... (10)
Response	*The rules in OAR 340-055-0013 specify conditions under which recycled water may be used at a wastewater treatment facility and is exempt from the rules of the division. By stating that spray or drift cannot occur off the site will ensure a public health hazard is not created by aerosols. The use of recycled water for landscape irrigation or in plant processes at a wastewater treatment facility will be controlled by the wastewater treatment facility personnel. As stated in the rules, public access to the site is restricted. No changes were made in response to this comment.*
General Requirements for Permitting the Use of Recycled Water - OAR 340-055-0016	
1. Edit language, land application on EFU land, -0016(3)	• The proposed rule language in this section should be modified to provide more clarity regarding the requirements for reclaimed water/recycled water contained in ORS 215. Please consider revising the proposed rule language as follows, "...until the requirements of ORS 215.213(1)(bb) and 215.283(1)(y) for reclaimed water are met." (1, 2, 4, 5, 6) • Land application on land zoned Exclusive Farm Use (EFU) will be permitted subject to the acquisition by the permittee of a Land Use Compatibility Statement. (10)
Response	*DEQ has made the suggested change as stated in the first comment.* *The need for a Land Use Compatibility Statement is addressed through the water quality permitting process. The department developed guidance (available on the department's water reuse web site) in January 2002 that describes procedures as to how DEQ will process land application proposals in compliance with the legislation (i.e, SB 212). No changes were made in response to this comment.*
2. Edit language, authorization of other recycled water uses, -0016(6)	The proposed 340-055-0016(6) allows the Department to authorize other recycled water use. The section does not provide any guidance for how the Department will apply its appropriate discretion. The section would provide clearer expectations that the rules is intended to encourage beneficial re-use if it read that "the Department will authorize... beneficial purpose consistent with the policies set forth in this rule." (8)
Response	*The policy for recycled water use is stated in OAR 340-055-0007 and does state "It is the policy of the EQC to encourage the use of recycled water for...." A proposed use of recycled water for a beneficial purpose not stated in the rules will take into consideration this policy, including the protection of public health and the environment of Oregon. The IMD will provide guidance to staff as to how to make a determination for a use of recycled water not stated in the rules. No changes were made in response to this comment.*
3. Edit language, setback distances, -0016(7)	Change "...consider and approve on a case-by-case basis a setback..." to "...consider and approve, on a case-by-case basis, a setback..." (7)
Response	*DEQ has made the suggested change.*

4. Edit language, public outreach and sign posting, -0016(8)	• The word "*outreach*" should be replaced with the word *"protection"*, since our main concern is to prevent health related incidents when using recycled water. If the state is truly concerned about public health, then any irrigation water that is not potable should be signed in the same manner as recycled water, since no one should be drinking any of it. (2) • Change "...may on a case-by-case basis approve..." to "...may, on a case-by-case basis, approve..." (7) • Change "...public outreach if it is demonstrated to the department the alternative method will assure an equivalent degree of public outreach." to "...public outreach where it considers the method will assure an equivalent degree of public protection." (7)
Response	*The context of using public outreach in this section refers to disseminating information and educating the public. DEQ made changes to the language in response to the second and third comments by including the use of "protection" at the end of the sentence.*
Treatment and Use of Recycled Water - OAR 340-055-0017	
1. Alternative treatment process, -0017(1)	Section OAR 340-055-0017(1) provides for alternative treatment processes to be approved. This alternative appears to be a holdover form the technology requirements in the old rule and we prefer that the rule focus on performance. If the language [in -0012(7)(c)] is not removed, we do concur that the Department should be able to provide alternative treatment systems. However, it is not clear that the language in 17(1) could, or would, allow filtration following disinfection. This is important because the District modified processes used to deliver reuse water at the Durham AWTP with Department approval in 2001. The District continues to provide level IV (Class A) with disinfection prior to filtration just as we did with filtration prior to disinfection (Attached Durham Monitoring Forms). We recommend removing the vague "equivalent to" language from this section of rule and focus on performance based expectations. If the vague "equivalent to" language is retained, then the criteria for approval should be enunciated preferably in rule or if not in an internal management directive. For example, guidance language could read that "methods of treatment other than those or in lue of those expressed in rule may be approved if the applicant demonstrates to the satisfaction of the Department that the methods of treatment and reliability will achieve applicable recycle water criteria for a specific beneficial purpose." (8)
Response	*The purpose of this section is to allow DEQ to consider alternative physical, biological, and chemical treatment processes that are equivalent to processes stated in OAR 340-055-0012. An alternative treatment process may consist of a specific unit process, a treatment process, or a treatment train. The determination of "equivalency" would consider treatment effectiveness and reliability based on adequate data or pilot studies. The Internal Management Directive will address this section on how the department will determine alternative treatment processes. The section proposed language does state "...the treatment is equivalent to and can achieve the recycled water criteria required for a specific beneficial purpose."* *The responses to comments 53, 54, and 55 under -0012 above address the comment on allowing filtration after disinfection.* *No changes were made in response to these comments.*
2. Edit language, additional treatment, -0017(2)	• Change the last sentence to read "...must have a NPDES or WPCF permit issued by the department *for every class of water that is discharged.*" (2) • Change "...must have a NPDES or WPCF permit issued by the Department." to "...must have a department issued NPDES or WPCF permit." (7)
Response	*This subsection is adequately stated. No changes were made in response to these comments.*

3. Additional treatment, -0017(2)	This section is far too broad to be exercised in a practical manner. DEQ has enough problems issuing permits for wastewater operations without requiring farmers to obtain a permit if they wish to store, add chemicals, fertilizer, etc. to the wastewater delivered to them. This has been and should continue to be the jurisdiction of the owner/operator of the wastewater treatment facility. It is the responsibility of the owner/operator to assure through contract and local authority the satisfactory compliance with the conditions of their permit and this division 55. It strikes me as an unnecessary extension of authority to transgress into the relationship between the recycle water producer and the user. Do you want to know if a nurseryman is adding a handful of chlorine crystals to the recycled wastewater to protect his crops from blight or fungus? Doesn't seem practicable. I would suggest putting this arrow back in the quiver. (10)
Response	*The purpose of this section is to allow a person to provide additional treatment of recycled water so it could be used as a higher quality recycled water than what was originally produced. The intended beneficial purpose is based on the quality of recycled water and is released to a user under requirements for criteria that must be met for that beneficial purpose.* *Due to legal reasons regarding the department's ability to oversee contracts, the proposed rules specifically state in OAR 340-055-0012(1) and (2) that "any person having control over the treatment or distribution or both of recycled water....ensure that recycled water is used only in accordance with the...rules of this division" and "any person who uses recycled water may only use recycled water for the beneficial purposes....and must comply with...rules of this division."* *No changes were made in response to these comments.*
4. Prohibited use for a public pool, -0017(6)	The use of recycled water as a source of supply for a public pool, spa or bathhouse is prohibited under OAR chapter 333 division 060-0190. (10)
Response	*This section adequately states "the use of recycled water as a source of supply for a public pool, spa, or bathhouse is prohibited unless authorized..." and makes reference to the Department of Human Services administrative rules. No changes were made in response to this comment.*
5 Edit language, transporting recycled water, -0017(7)	Change "...six inches high and displayed on..." to "...six inches high and clearly displayed on..." (7)
Response	*This section adequately states "The vehicle must be clearly identified..." and tells how this is to be achieved. No changes were made in response to this comment.*
6. Wetlands, -0017(9)	• Unless all wetlands are lined there can be movement of leachable compounds, elements, and/or organisms depending on the oxidation reduction potential in various parts of the wetland. What is the minimum monitoring requirement that the Department will require in the Recycled Water Use Plan for each class of recycle water? If wetlands are waters of the state can we have different sampling points for different water constituents/parameters across the wetland? Are wetlands considered treatment units? • Please clarify the term "Enhancement" in context to increasing the function of a wetland, and/or of a degraded wetland. Does enhancement mean treatment? If so, is a wetland waters of the state or a treatment unit? • Under OAR 340-055-0012(5)(f) please clarify what enhancement and/or restoration of a wetland means? Is there a time/duration on restoration or is it perpetually on going? (20)

Response	*OAR 340-055-0017(9) adequately states that wetlands (including enhanced or restored) are waters of the state and that a discharge to any of these wetlands would require an NPDES permit. Monitoring requirements would be addressed in the NPDES and would be site specific based on water quality standards that would need to be met for that water body. Since the water discharged would not be regulated under the Recycled Water Use rules, a Recycled Water Use Plan would not be required.* *This section in the proposed rules also clearly states "Wetlands constructed on non-wetland sites and managed for wastewater treatment...are not considered waters of the state for water quality purposes."* *The last comment is unclear as OAR 340-055-0012(5)(f) does not include language pertaining to enhanced or restored wetlands.* *No changes were made in response to these comments.*
Groundwater Quality Protection - OAR 340-055-0020	
1. General	The section 340-055-0020 reads a bit differently than does the section on ground water rules in division 40. It is not clear if the intent is to add some additional protection. If no added protection is intended, then section 340-055-0020 would be clearer if its language were consistent with ground water rule language. It may also be clearer, and consistent with the recent subsurface IMD, to identify application of the adverse impact language to occur outside the waste management area. (8)
Response	*The department has modified the language in the proposed rule to be more consistent with the groundwater quality protection rules in OAR 340-040. OAR 340-040-0030 indicates that unless a variance is granted, facilities cannot have an adverse impact on groundwater quality. An adverse impact is considered to be an increase of the concentration of a contaminant above background groundwater concentrations as measured in a downgradient location at the edge of the waste management boundary. Therefore, the groundwater quality protection rules recognize contaminants may be present in groundwater beneath the site.*

2. General	The proposed rules have revised language concerning groundwater. The new language states, in part: "The requirements of OAR 340-040 are considered to be met if the treatment system owner demonstrates recycled water will be used in a manner or land applied at a rate that does not cause contaminants to leach into groundwater and degrade groundwater quality." Unless one is irrigating with distilled water, sound irrigation practices must provide for some portion of the irrigated water to leach through the soil profile. Otherwise, particularly in arid climates like eastern Oregon, salts will build up in the soil and eventually render the soil nonproductive. So, if the proposed rules expect that agricultural irrigation be conducted without a leaching fraction, then virtually every irrigation project will involve a hydrogeologic analysis and possibly a groundwater protection program a required by OAR 340-040-0030. If someone decides to try to irrigate recycled water with no leaching fraction and the land is designated exclusive farm use or EFU, DEQ will be unable to make the required findings under ORS 215.246 stating that the land will not "reduce the productivity of the tract." This is because the salt build-up resulting from no leaching fraction will reduce productivity. If DEQ responds to these points by stating that rule does not prohibit leaching as long as groundwater quality is not degraded, what does DEQ mean by degradation? Does it mean any increase or change in any contaminant concentration regardless of its significance to the use of groundwater quality? And, in any case, wouldn't this require a significant GW analysis thereby discouraging reuse of effluent? I suggest that the language in the rule be changed to read either: 1. "The requirements of OAR 340-040 are considered to be met if the treatment system owner demonstrates recycled water will be used in a manner or land applied at a rate that is consistent with sound agricultural practices as determined by DEQ staff ~~does not cause contaminants to leach into groundwater and degrade groundwater quality~~." Or 2. "The requirements of OAR 340-040 are considered to be met if the treatment system owner demonstrates recycled water will be used <u>or land applied</u> in a manner or ~~or land applied~~ at a rate that does not adversely ~~degrades the use of~~ <u>affect</u> groundwater quality.~~does not cause contaminants to leach into groundwater and degrade groundwater quality.~~" The latter suggested language is more in-line with DEQ's own rules concerning the protection of groundwater quality, but I recommend the former suggested language. (15)

Response	*DEQ does recognize, particularly in Eastern Oregon, that a leaching fraction may be needed to prevent the build up of salts in the soil. The assumption is that leaching will occur only when needed (i.e., salts are shown to be building up) and then, only to below the root zone and not to the groundwater. Therefore, the assumption that "OAR 340-040 is considered to be met" is based on the use of management practices that minimize the potential movement of contaminants to groundwater and, therefore, the potential impacts to groundwater.* *OAR 340-040-0030 indicates that unless a variance is granted, facilities cannot have an adverse impact on groundwater quality. An adverse impact is considered to be an increase of the concentration of a contaminant above background groundwater concentrations as measured in a downgradient location at the edge of the waste management boundary. Therefore, the groundwater quality protection rules recognize contaminants may be present in groundwater beneath the site. OAR 340-040-0020(4) and (5) directs the department to determine which contaminants are present in the wastewater at significant levels of concern.* *DEQ has modified the proposed rule to include the language (2.) proposed in the comment, and to address consistency with OAR 340-040.*
3. Treatment system owner, -0020	Treatment system owner (is this the provider? And/or users?) who has to demonstrate the recycled water will be used in a manner and/or land applied at a rate that does not cause contaminants (e.g., metals (Fe, Mn,), salts (Na, Cl), trace elements such as personal care products/persistent compounds) to leach into groundwater and not to potentially degrade groundwater quality (based on Div 340-40 not to exceed background levels). Please clarify, and explain who has liability the provider and/or end user of the recycled water? (20)
Response	*The proposed rules specifically state in OAR 340-055-0012(1) and (2) that "any person having control over the treatment or distribution or both of recycled water….ensure that recycled water is used only in accordance with the…rules of this division" and "any person who uses recycled water may only use recycled water for the beneficial purposes….and must comply with…rules of this division." These sections of the rule adequately address the need for anyone who treats, distributes, or uses recycles water to comply with these rules. No changes were made in response to these comments.*
Monitoring and Reporting - OAR 340-055-0022	
1. General, -0022(1)	How can monitoring be done in accordance with OAR 340-055-0012 when there is no such OAR? Why did you take out the notification requirement when a permittee becomes aware of noncompliance of rules? Is this a backslide? Is this why the people of the US are working to get a federal law passed requiring mandatory notification of sewage spills? (19)
Response	*The proposed rules do include the rule 340-055-0012, Recycled Water Quality Standards and Requirements. Noncompliance reporting is a general condition in NPDES and WPCF permits and it is redundant to address this in these rules. No changes were made in response to this comment.*
2. Change grammar, -0022(3)	Change "…recycled water a requirement that…." to "…recycled water, a requirement that…" (7)
Response	*DEQ has made the suggested change.*
Recycled Water Use Plan - OAR 340-055-0025	

1. General	Section 0025, describing the Recycled Water Use Plan, doesn't indicate whether the plan pertains to a single system owner and a single user, or to a single system owner and multiple users. It appears to be written to require a separate plan for each single user. If so, it should be stated as such in an introduction to section 0025. Perhaps it would be more efficient and no less robust to require each wastewater treatment system owner to produce a document describing the treatment system and its particulars (most of Section 0025.1), and a number of separate but related documents containing the information required by 0025.2 and 0025.3, for each user of recycled water produced by that system. If this approach is used, section 0025.1.c. would need to read "...to **each** user ..." instead of "...to the user..." section 0025.1.g might go to section 0025.2, and other related changes might be needed. (12)
Response	*The need for a recycled water use plan is addressed in OAR 340-055-0016(2); this section states a wastewater treatment system owner may not provide recycled water for distribution or use until a recycled water use plan has been approved in writing by the department.* *OAR 340-055-0025 specifies what the minimum contents of a recycled water use plan are. The intent of this rule is to not require each user to develop a recycled water use plan or to have a wastewater treatment system owner develop a plan for each user. The rule adequately states what is required for a recycled water use plan.* *No changes were made in response to these comments.*
2. Enforcement of recycled water use plan	Where in the rule does it say clearly that the Recycle Water Use Plan is an enforceable part of the permit (NPDES and WPCF); I think this should be stated in the rule. Also, there is mention of "authorization" of water use with setbacks etc. which infers a site which as part of the Recycle Water Use Plan, part of the Permit...I suggest that this also be an enforceable link back to the permit. (20)
Response	*OAR 340-055-0025(4) clearly states that conditions contained in a department approved recycled water use plan are NPDES and WPCF permit requirements.* *"Authorization" is used in the context of these rules to address a specific requirement that is not related to setbacks or the recycled water use plan. Use of a specific site for recycled water use does not require department authorization under these rules. No changes were made in response to these comments.*
3. Loading rates	This rule is vague. There is no requirement in the Recycle Water Use Plan to actually use consumptive or agronomic loading rates for the soil types and the crops grown. The rule allows the Department to determine on a case by case basis the project use requirements...my concern is that not all staff with the Department are versed and/or qualified to make these decisions (Senate Bill 212). The rule needs a minimum measurable beneficial use requirement which all projects should comply with and which is protective of public health and the environment. How will the Department ensure that the beneficial uses for each project are defined and measurable and meaningful? (20)
Response	*OAR 340-055-0025 outlines requirements for a Recycled Water Use Plan. Specific requirements for land application are stated, including a description of application methods and rates. Land application project requirements will vary on a case-by-case basis depending on site characteristics, climatic conditions, irrigation factors, and the quality (i.e., class) of recycled water. Through the water quality permit and recycled water use plan, the department will determine compliance with the rules to ensure protection of public health and the environment. No changes were made in response to these comments.*
4. Edit language, - 0025(1)(c)	Change "...owner to the user and at what frequency for what beneficial purpose." to "...owner to the user, at what frequency and for what beneficial purpose." (7)
Response	*DEQ has made the suggested change.*

5. Maintenance plan, -0025(1)(f)	The proposed rules require a maintenance plan for the treatment facility in the recycled water plan. What is the scope of this plan? Is it to be as elaborate as an SRF O&M plan or something less? (15)
Response	*The IMD will provide guidance to staff on what a maintenance plan should include. A maintenance plan will not be as comprehensive as an Operation and Maintenance (O&M) Plan, and could reference an available O&M Plan. As stated in the rule, the plan should describe "how the wastewater treatment system equipment and facility processes will be maintained and serviced." No changes were made in response to these comments.*
6. Notification, -0025(1)(g)	Section 0025.1.g should read "...a description of how **the public and** personnel at the user area will be notified." (12)
Response	*DEQ has made the suggested change.*
7. WRD measuring and reporting requirements, -0025(1)(h)	Suggest revised wording "Assurance of compliance with ORS 537.132 and OAR chapter 690." (10)
Response	*The rule in subsection -0025(1)(h) is adequately stated. Subsection (h) is specific to any measuring and reporting requirements that Oregon Water Resources Department (WRD) may have identified for a recycled water use project, and this must be described in the recycled water use plan. The cited statute in the comment, ORS 537, is referenced under OAR 340-055-0017 that pertains to water rights. OAR chapter 690 is inclusive of all WRD rules and all of these rules are not relevant to using recycled water. Cross-referencing this chapter does not make the recycled water rule easier to read or understand. If any rule were to be amended in OAR chapter 690, DEQ would have to formally amend this rule to incorporate the changes made to OAR chapter 690. No changes were made in response to this comment.*
8. Edit language, -0025(2)	Section 0025.2 begins with a fractured phrase and is not clear. Perhaps it should begin **"If Classes B, C, or D, or nondisinfected recycled water are to be used,..."** (12)
Response	*DEQ has made the suggested change.*
9. Edit language, -0025(3)(b)	• Change "An assessment as to if the recharge..." to "Determination if the recharge..." (7) • Revise wording "...as to if..." (10)
Response	*DEQ has made the suggested change.*
10. Recycled water use plan conditions, -0025(4)	Because the Recycle Water Use Plan is part of the permit do we need a permit modification to change the Plan? Do we need to go out on formal public notice (and potential hearing) on all proposed changes? And what does the Department consider a minor versus a major recycle water use plan change? (20)
Response	*This comment is outside the scope of this rulemaking. The department will determine through the water quality permit rules how to appropriately address a modification to a recycled water use plan. No changes were made in response to this comment.*
Operational Requirements for the Treatment and Distribution of Recycled Water - OAR 340-055-0030	
1. Edit language, bypassing, -0030(1)	Change to read "...described in the recycled water use plan *with that unit process out of service.*" (2)
Response	*DEQ has made a change to the rule incorporating the suggested language. .*
2. Add language, cross-connection control, -0030(6)	Add: Direct connection between a public water supply and a non-potable source is prohibited by OAR 333, division 061-0070, Table 32. (10)
Response	*The rule in section (6) is adequately stated and requires specific approval and adequate protection of potable water. The plumbing code applies and requires appropriate backflow protection. No changes were made in response to this comment.*

List of People Submitting Comments (by Commenter Number)

Number	Name	Organization	Submittal Date
1*	Ken Vanderford	City of Eugene, Residuals Supervisor	8/31/2007
2	Jim Hill	City of Medford, Water Reclamation Division Administrator	8/28/2007
3	Arthur Schmidt	City of Sutherlin, City Manager	8/1/2007
4	Mark Cullington	Kennedy/Jenks Consultants, Senior Associate Scientist	8/28/2007
5	Daniel Hanthorn	City of Corvallis, Wastewater Operations Supervisor	8/27/2007
6	Janet Gillaspie	Oregon Association of Clean Water Agencies, Exec. Director	8/24/2007
7	Mark Ronayne	City of Portland, Biosolids Reuse Program Manager	7/24/2007
8	Bob Baumgartner	Clean Water Services, Regulatory Affairs Division Manager	8/31/2007
9*	Mark Milne	City of Pendleton, Wastewater Superintendent	7/25/2007
10*	Pat Curran	Curran-McLeod, Inc.	8/9/2007
11*	Alex Mauck	Goodman Sanitation, Inc., President	8/6/2007
12*	Marc San Soucie	Beaverton, Citizen	8/14/2007
13*	Michael Gundlach	Portland, Citizen	8/20/2007
14*	Angela Zehava		8/20/2007
15*	Dick Nichols	Newton Consultants	8/14/2007
16*	Margo Rettig	SERA	8/23/2007
17	Dawn Hottenroth	City of Portland – BES, Environmental Specialist	8/16/2007
18	Paula Brown	City of Ashland, Public Works Director/City Engineer	8/27/2007
19*	Patricia Ross	Molalla, Citizen	8/31/2007
20*	Paul Kennedy	Roseburg, Citizen	8/31/2007

* Comments submitted via e-mail

Water Reuse Task Force Members

Recycled Water Use Rules

The Water Reuse Task Force convened in May 2006 and met through May 2007 to assist DEQ with the recycled water use rulemaking effort. The Task Force included members who were a part of the larger Urban Water Reuse Task Force (May – November 2004) that addressed Senate Bill 820 requirements. Since the rules focus on recycled water from municipal wastewater treatment facilities, the Water Reuse Task Force included represented interests on this type of water. The Task Force provided recommendations to DEQ on proposed rule changes and identified issues that need to be addressed in guidance through an Internal Management Directive.

WATER REUSE TASK FORCE	
NAME	**AFFILIATION**
Mark Yeager (chair)	Oregon Association of Clean Water Agencies (ACWA), City of Albany
Stephanie Eisner	ACWA, City of Salem
Dan Hanthorn	ACWA, City of Corvallis
Jadene Stensland	ACWA, City of Wilsonville
Ken Vanderford	ACWA, City of Eugene
Dave Wilkinson	Oregon Dept. of Agriculture (ODA)
Terry Swisher	Oregon Dept. of Consumer and Business Services (DCBS)
Ken Kauffman	Oregon Dept. of Human Services (DHS)
Kim Grigsby	Oregon Water Resources Dept. (WRD)
Renee Stoops	SPROut Coordinator at The Oregon Garden
Kim Anderson	Sunrise Water Authority

State of Oregon
Department of Environmental Quality **Memorandum**

Presiding Officer's Report

Date: August 16, 2007

To: Environmental Quality Commission

From: Andy Ullrich

Subject: Presiding Officer's Report for Rulemaking Hearing
Title of Proposal: Revisions to Recycled (Reclaimed) Water Use Rules
Hearing Date and Time: August 15, 2007, 6:00 p.m.
Hearing Location: Community Justice Center, 1101 W. Main Street, Suite 101, Medford, Oregon

The Department convened the rulemaking hearing on the proposal referenced above at 6:15 p.m. and closed it at 6:16 p.m. Jim Hill (City of Medford) was the only person in attendance at the hearing. No one testified.

Before the hearing, Judy Johndohl, DEQ Water Quality program manager, had an informal discussion with Mr. Hill on the proposed rule changes.

State of Oregon
Department of Environmental Quality **Memorandum**

Presiding Officer's Report

Date: August 17, 2007

To: Environmental Quality Commission

From: Walt West

Subject: Presiding Officer's Report for Rulemaking Hearing
Title of Proposal: Revisions to Recycled (Reclaimed) Water Use Rules
Hearing Date and Time: August 16, 2007, 6:00 p.m.
Hearing Location: Health and Human Services Building, 1300 NW Wall St., Suite 101, Bend, Oregon

DEQ convened the rulemaking hearing on the proposal referenced above at 6:30 p.m. and closed it at 6:40 p.m. As presiding officer, I asked attendees to sign registration forms if they wished to present comments and advised them that the hearing was being recorded.

Two people attended the hearing including: Dan Hanthorn (City of Corvallis) and Karen Bower (DEQ – Eastern Region, Bend). Before taking testimony, I briefly explained the rulemaking proposal and procedures for the hearing.

One person testified. DEQ will include his comments in the Summary of Comments and Agency Responses for this rulemaking. No written comments were received

Dan Hanthorn representing the City of Corvallis, Oregon provided the following comments:

- Mr. Hanthorn spoke in support of the amendments that have been proposed to be made by the Department of Environmental Quality. He stated he was a part of the task force that had input on the rule changes and he appreciated that opportunity. He thinks it's been a long time in coming and the rules are definitely moving in the right direction and do reduce the barriers limiting reuse in Oregon, as the rules exist now. However, Corvallis believes in the spirit of Senate Bill 820 and the Governor's Executive Order and thinks that additional changes are appropriate to further encourage reuse.

- The City believes the requirement for filtration prior to disinfection will represent a significant barrier to not only their reuse program, but many other reuse programs in the state. Once being disinfected prior to disinfection, the pathogens have been neutralized. Filtration, actually in the case of membrane filtration, can add disinfection credits that were recognized by the State because of their effectiveness in filtering out pathogens. The requirement to have disinfection or meet disinfection criteria, including contact time, post disinfection or post filtration would require a substantial extra infrastructure in many cases, and the cost for that infrastructure for tanks and contact times and such could lead to many reuse projects not getting off the ground. The City thinks as an alternative that allowing disinfection prior to filtration should be allowed and that, if necessary, rechlorination to bring the residual up to some specified amount would be appropriate if the intent is to maintain the quality of the water throughout the distribution system. That would be similar to the way potable water is treated where there must be maintained a residual within the distribution system to neutralize the possibility of contamination when it's introduced perhaps in an open basin or through a pipe line break or a siphon effect. The City does support rechlorination to maintain a residual in the distribution system but not include contact time with that.

- There is very little in the way of one very good opportunity for reuse, and that is in conjunction with wetlands. The City proposes to adopt the State of Washington's wetlands rules which are fully developed and have been implemented with great success and represent a huge step forward from the very narrower view that Oregon has regarding reuse and wetlands.

- Another concern for the City of Corvallis is the dynamic nature of personnel and positions within the Department and we would strongly recommend that people very close to the rule development package also be included or be the lead on developing the IMD. To transfer this responsibility at this point in time to someone who's unfamiliar with the people and the processes would not represent a good translation of the rules into an IMD, which would be very necessary for successful implementation of the rule.

- The City of Corvallis vigorously supports any action that the Department of Environmental Quality could instigate in conjunction with other states towards encouraging the Environmental Protection Agency to pursue development of risk-based standards for reuse water in the United States. A zero-risk analysis or risk-based analysis is beyond the scope of, I think, what any individual state could do, and does need to be done at a national level to get broad support by all states. Risk-based standards have been successfully adopted generally around the world – Australia, the European Union, and the World Health Organization. The United States stands virtually alone in continuing to use a zero-risk standard for developing reuse regulations and criteria.

State of Oregon
Department of Environmental Quality **Memorandum**

Presiding Officer's Report

Date: August 21, 2007

To: Environmental Quality Commission

From: Marilyn Fonseca

Subject: Presiding Officer's Report for Rulemaking Hearing
Title of Proposal: Revisions to Recycled (Reclaimed) Water Use Rules
Hearing Date and Time: August 20, 2007, 6:00 p.m.
Hearing Location: DEQ Headquarters, 811 SW Sixth Ave., EQC Conference Room A, Portland, Oregon

DEQ convened the rulemaking hearing on the proposal referenced above at 6:19 p.m. and closed it at 6:25 p.m. As presiding officer, I asked attendees to sign registration forms if they wished to present comments and advised them that the hearing was being recorded.

Four people were in attendance at the hearing including: Janet Gillaspie (Oregon Association of Clean Water Agencies), Jay Austin (Environmental Law Institute), Bob Baumgartner (Clean Water Services), and Kim Anderson (Sunrise Water Authority). One person testified.

Before taking comments, Judy Johndohl, DEQ Water Quality program manager, presented a brief overview of the proposed rule changes. I briefly explained the rulemaking proposal and procedures for the hearing.

The following is a summary of oral comments received at the hearing. No written comments were received. The Department will include these comments in the Summary of Comments and Agency Responses for this rulemaking.

Janet Gillaspie, Executive Director of the Oregon Association of Clean Water Agencies provided testimony. Ms. Gillaspie provided the following comments:

- AWCA strongly supports the Department in its revised reuse rules and appreciates the opportunity the Department has afforded its members in collaborating with the Department to improve these important rules related to Oregon's water quality. There are some specific areas to highlight where the revised rules are substantial improvement over the past rules.

Presiding Officer's Report – Portland

- The revised rules set a performance-based system for regulating how water reuse projects will be used in Oregon. This will allow the best and highest technology to be used by ACWA members and their consulting engineers, ensuring that only the highest performance standards can be met.
- ACWA appreciates the fact the State agency relationships in the revised rules have been simplified and streamlined.
- The revised signing requirements more accurately reflect the low environmental and public health risks that well-treated reclaimed water affords and we appreciate some of the flexibility that was added into the rules with regard to the revised communication plan.
- The improved process should support the production of Class A recycled water in Oregon, simplifying the regulations and provide more incentives for our members to produce this kind of water for its many, very logical uses.
- The expanded table of the outright approved list of recycled water uses is also a good improvement to the rules. Using well-treated disinfected recycled water for concrete and rock crushing, street sweeping, dust control, and commercial car washes is very appropriate.
- ACWA appreciates the needed flexibility that DEQ has inserted in the rules that allow their staff to exercise some of their best professional judgment in looking at specific reuse projects on a case-by-case basis.

ACWA wants to continue their partnership with the Department in crafting the Internal Management Directive that will help roll these rules out across the state. ACWA will have follow-up written comments for the Department and have a few minor suggestions to improve this already good rule package. Overall, ACWA greatly appreciates the Department's ability to include ACWA in this rulemaking and they strongly support adoption of these revised rules as an element of improving sustainable water resources and practices in Oregon.

State of Oregon
Department of Environmental Quality **Memorandum**

Presiding Officer's Report

Date: August 22, 2007

To: Environmental Quality Commission

From: Heidi Williams

Subject: Presiding Officer's Report for Rulemaking Hearing
Title of Proposal: Revisions to Recycled (Reclaimed) Water Use Rules
Hearing Date and Time: August 21, 2007, 6:00 p.m.
Hearing Location: City Hall, 501 SW Emigrant Ave., Community Room, Pendleton, Oregon

DEQ convened the rulemaking hearing on the proposal referenced above at 7:10 p.m. and closed it at 7:15 p.m. As presiding officer, I asked attendees to sign registration forms if they wished to present comments and advised them that the hearing was being recorded.

Two people were in attendance at the hearing: Page Frederickson (City of Halfway) and Mark Milne (City of Pendleton). Bob Patterson from the City of Pendleton attended for 10 minutes during the informal discussion. One person testified.

Before taking comments, Judy Johndohl, DEQ Water Quality program manager, presented a brief overview of the proposed rule changes and held a discussion with those in attendance on their issues of concern. After this discussion, I briefly explained the rulemaking proposal and procedures for the hearing.

The following is a summary of oral comments received at the hearing. No written comments were received. The Department will include these comments in the Summary of Comments and Agency Responses for this rulemaking.

Mark Milne, representing the City of Pendleton provided testimony. Mr. Milne provided the following comments on the use of total coliform and the *E. coli* standard:

- Mr. Milne's understanding was the State was pushing towards the use of *E. coli* as a standard for bacterial examinations for wastewater. He would prefer to see it move in that direction, thus eliminating the use of total coliform in this document. He didn't have a comment on the numerical values for *E. coli*, but since there was a push to standardize with *E. coli*, he would

much prefer to see us use *E. coli*.

- Mr. Milne questioned how the use of 23 total coliform was chosen. He asked what the human health criteria were and what kind of effect they had. He didn't think the State of Oregon came up with that number and thought it came from California. He wanted to know why DEQ is sticking with a number that is so low for bacteria that's not even shown to be of gut origin.

State of Oregon
DEPARTMENT OF ENVIRONMENTAL QUALITY

Relationship to Federal Requirements

RULE CAPTION

This rulemaking will allow wastewater treatment facilities to produce recycled water for a variety of beneficial purposes.

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).

1. Are there federal requirements that are applicable to this situation? If so, exactly what are they?

No.

2. Are the applicable federal requirements performance based, technology based, or both with the most stringent controlling?

Not applicable.

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?

Not applicable.

4. Will the proposed requirement (rulemaking) 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?

The use of recycled water instead of directly discharging wastewater to surface water has increasingly been an alternative pursued by wastewater treatment facilities who are facing more stringent discharge requirements from the establishment of Total Maximum Daily Loads (TMDLs). The ability to meet more stringent limits in many cases is not economically feasible due to costs associated with facility upgrades to improve wastewater treatment, and thus producing recycled water is a cost effective alternative.

The proposed rulemaking clarifies requirements for the treatment and use of recycled water, and also clarifies the regulatory process for recycled water use projects. This will give more certainty to wastewater treatment facilities interested in utilizing recycled water as a wastewater management option.

5. Is there a timing issue which might justify changing the time frame for implementation of federal requirements?

Not applicable.

6. Will the proposed requirement (rulemaking) assist in establishing and maintaining a reasonable margin for accommodation of uncertainty and future growth?

Yes. The proposed rulemaking expands on the beneficial purposes for the use of recycled water. With increasing population and a growing demand for water resources, recycled water is a viable alternative to the use of drinking water for nonpotable purposes. Land irrigation for agricultural purposes has been a predominant use of recycled water in Oregon, but more use in urban environments is expected as water becomes a more limited resource.

7. Does the proposed requirement (rulemaking) establish or maintain reasonable equity in the requirements for various sources? (level the playing field)

Yes. The proposed amendments to the rules maintain equity for treatment requirements and use requirements of recycled water. The amendments also clarify that any person having control over the treatment, distribution, or use of recycled is responsible for complying with the rules.

8. Would others face increased costs if a more stringent rule is not enacted?

Not applicable.

9. Does the proposed requirement (rulemaking) 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?

Not applicable.

10. Is demonstrated technology available to comply with the proposed requirement (rulemaking)?

Yes. The proposed rulemaking sets performance based criteria for available wastewater treatment technology. The rules also address the use of alternative treatment processes if compliance with the recycled water criteria can be demonstrated for a specific use.

11. Will the proposed requirement (rulemaking) contribute to the prevention of pollution or address a potential problem and represent a more cost effective environmental gain?

Yes. The use of recycled water contributes to prevention of pollution by reducing discharge of treated effluent to surface water. Non-discharge alternatives are a more cost effective environmental gain for wastewater treatment facilities having to comply with stringent TMDL requirements. Recycled water use also addresses the sustainability of water as a resource by reducing the demand of drinking water sources for uses not requiring potable water.

Attachment F

DEPARTMENT OF ENVIRONMENTAL QUALITY
Chapter 340
Proposed Rulemaking
STATEMENT OF NEED AND FISCAL AND ECONOMIC IMPACT
This form accompanies a Notice of Proposed Rulemaking

Rule Caption	This rulemaking will allow wastewater treatment facilities to produce recycled water for a variety of beneficial purposes.
Title of Proposed Rulemaking:	Revisions to Recycled (Reclaimed) Water Use Rules
Stat. Authority or other Legal Authority:	The Department has the statutory authority under ORS 468.020, 468B.010, & 468B.015.
Stat. Implemented:	The statutes implemented under these rules are ORS 468B.005, 468B.015, 468B.020, 468B.030, 468B.050, & 468B.150 - 468B.190.
Need for the Rule(s)	The need for this rulemaking was originally identified by the Urban Water Reuse Task Force that was established by DEQ pursuant to Senate Bill 820 from the 2003 Legislature. This rulemaking, under a new title, incorporates proposed revisions to the existing rules. The use of recycled (reclaimed) water from domestic wastewater treatment facilities in Oregon was first governed by a DEQ guidance document developed in January 1986. Rules were later adopted by the Environmental Quality Commission in August 1990 that established treatment criteria for the use of recycled water and addressed a variety of uses to assure protection of public health and the environment. The rule revisions are needed to clarify program requirements and update policies, including additional beneficial purposes for the use of recycled water and new wastewater treatment technologies. The rules will allow wastewater treatment facilities to produce recycled water for additional beneficial purposes and will clarify responsibility requirements for the use of recycled water. Minor revisions are also proposed for the bacteria rule in OAR 340-041-0009(5) to update the language referencing reclaimed water; revisions from this rulemaking will not amend the bacteria criteria.
Documents Relied Upon for Rulemaking	• Washington State Dept. of Ecology Water Reclamation and Reuse Standards • Idaho Dept. of Environmental Quality Rules for the Reclamation and Reuse of Municipal and Industrial Wastewater • California Health Laws Related to Recycled Water • U.S. Environmental Protection Agency (EPA) 2004 Guidelines for Water Reuse • American Water Works Association, California-Nevada Section, 1992 Guidelines for the Distribution of Nonpotable Water Copies of the documents relied upon in the development of this rulemaking proposal can be reviewed at the Department of Environmental Quality's office at 811 S.W. 6th Avenue, Portland, Oregon. The state and EPA documents may also be found on the world wide web.
Requests for Other Options	***ORS 183.335(2)(b)(G) requests public comment on whether other options should be considered for achieving the rule's substantive goals while reducing negative economic impact of the rule on business.***
Fiscal and Economic Impact, Statement of Cost Compliance	
Overview	The proposed rulemaking revisions provide more options and opportunities for the treatment and use of recycled water. The rules do not mandate that wastewater be recycled, but rather provide an alternative for the treatment and management of wastewater as a new water supply for a beneficial purpose. As more domestic wastewater permittees face the need to pursue alternatives to surface water discharge or to upgrade treatment facilities, these rules allow permittees to consider water recycling in their assessment and planning. The requirement to have a permit and a recycled water use plan for the treatment and use of

	recycled water will not change with the proposed rulemaking. The proposed rules clarify what is needed in a recycled water use plan and that the approved plan conditions are permit conditions.	
General public	The revised rules will benefit the general public by protecting beneficial uses of Oregon's waters as wastewater treatment facilities pursue non-discharge alternatives. The use of recycled water will also reduce the demand of drinking water sources for uses not requiring potable water. Non-discharge alternatives provide fiscal and economics benefits to drinking water, water for industrial and agricultural activities, increased recreational opportunities and protection of fish and wildlife.	
Small Business (50 or fewer employees – ORS183.310(10))	a) Estimated number and types of businesses impacted	If recycled water is distributed and used as a non-potable water supply source by a small business for irrigation, industrial, commercial, or construction purposes, the costs incurred may be less under the proposed revisions. The current rule requiring a contract between the wastewater treatment system owner and the user is proposed to be deleted. Based on the intent to streamline the process for pursuing the use of recycled water, the time and costs incurred with this requirement will be less. The cost savings will vary depending on the number and the nature of the contracts that would be required between the wastewater treatment system owner and the user, and the number of staff or consultant hours for developing the contracts and meetings. Cost savings will also vary with the hours of negotiation involved and attorney's time to review the contracts. An estimate of savings based on the assumption of $75 per hour and 10 hours of staff time including developing the contract, meetings, and legal review would be $7,500 per contract. The total cost for a small business with one to five end users would be $7,500 to $37,500.
	b) Additional reporting requirements	None.
	c) Additional equipment and administration requirements	None.
	d) Describe how businesses were involved in development of this rulemaking	The proposed rule revisions were based on recommendations made by the Water Reuse Task Force, which included several municipalities as representatives of the Oregon Association of Clean Water Agencies, an environmental interest, a water district, and several state agencies. Other interests representing agriculture, irrigation districts, and consultants were informed of the task force meetings and often were in attendance.
Large Business	If recycled water is distributed and used as a non-potable water supply source by a large business for irrigation, industrial, commercial, or construction purposes, the costs incurred may be less under the proposed revisions. The current rule requiring a contract between the wastewater treatment system owner and the user is proposed to be deleted. Based on the intent to streamline the process for pursuing the use of recycled water, the time and costs incurred with this requirement will be less. The cost savings will vary depending on the number and the nature of the contracts that would be required between the wastewater treatment system owner and the user, and the number of staff or consultant hours for developing the contracts and meetings. Cost savings will also vary with the hours of negotiation involved and attorney's time to review the contracts. An estimate of savings based on the assumption of $75 per hour and 10 hours of staff time including developing the contract, meetings, and legal review would be $7,500 per contract. The total cost for a large business with 1 to 20 end users would be $7,500 to $150,000.	

Local Government	If a local government has a water quality permit for a wastewater treatment facility, the proposed revisions could be considered as a benefit that allows more options and opportunities for the treatment and use of recycled water. Clarity of the proposed rules will give permittees a better understanding of what is needed to comply with the regulations.
State Agencies	The Oregon Department of Human Services (DHS) and the Oregon Water Resources Department (WRD) are referenced in the proposed rules and staff from these agencies will be consulted on a case-by-case basis as required by rule for specific water reuse projects. The need for consultation or review with DHS staff of certain requirements is proposed to shift to DEQ's responsibility, and thus DHS staff time should be less under the proposed revisions. WRD may be involved with reuse projects on a case-by-case basis, but the proposed rules will not involve more staff time than what is now required. The revised rules provide clarity as to when WRD should be consulted.
DEQ	The implementation of the revised rules will be completed with existing DEQ water quality staff in headquarters and the regional offices. The review time for plans and specifications of a wastewater treatment process proposed to produce high quality recycled water should be less as the rules clarify the use of certain technologies. The review time of permits and recycled water use plans is not anticipated to change, and should be less as the rules clarify requirements for the permitting and use of recycled water.
Other agencies	If a municipality (other than a local government) has a water quality permit for a wastewater treatment facility, the proposed revisions provide more options and opportunities for the treatment and use of recycled water which could be considered as a benefit in wastewater management planning. Clarity of the proposed rules will give permittees a better understanding of what is needed to comply with the regulations.
Assumptions	It is assumed the treatment and use of recycled water will continue to be a viable option in the planning, managing, and operating of a wastewater treatment facility.
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. If recycled water is distributed and used as a non-potable water supply source for landscape irrigation at a residence, the costs incurred would be the same under the current rules and the proposed revisions.
Administrative Rule Advisory Committee	The Water Reuse Task Force convened in May 2006 to assist DEQ with the rulemaking effort. The task force provided recommendations to DEQ on proposed rule changes and identified issues needing further direction and guidance through an Internal Management Directive. Prior to the public comment period for this rulemaking, the task force reviewed the Statement of Need and Fiscal and Economic Impact at its meeting on May 1, 2007.

Prepared by	Judy Johndohl Printed name	JULY 12, 2007 Date
Approved by DEQ Budget Office	Andree Pollock Printed name	7/12/07 Date

State of Oregon
DEPARTMENT OF ENVIRONMENTAL QUALITY

Land Use Evaluation Statement

Rulemaking Proposal
for
Revisions to Recycled (Reclaimed) Water Use Rules

RULE CAPTION

This rulemaking will allow wastewater treatment facilities to produce recycled water for a variety of beneficial purposes.

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1. Explain the purpose of the proposed rules.

The Oregon Department of Environmental Quality (DEQ) is proposing to amend its rules on the use of recycled (reclaimed) water. The rule revisions are needed to clarify program requirements and update policies, including additional beneficial purposes for the use of recycled water and new wastewater treatment technologies. The proposed rulemaking will:

- Amend recycled water treatment and use requirements that allow for additional beneficial purposes and new wastewater treatment technology.
- Clarify responsibility requirements for the use of recycled water.
- Institute program improvements that promote efficiency, effectiveness and consistency for approving and implementing a recycled water use program.
- Clarify the regulatory process and involvement of other state agencies for recycled water use projects.
- Revise language that unduly stigmatizes reuse.

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:

OAR 340-018-0030(5) Water Quality Division:
(a) Approval of Wastewater System and Facility Plans;
(d) Issuance of NPDES and WPCF Permits.

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/activities are existing DEQ land use programs and require an approved Land Use Compatibility Statement (LUCS) or other evidence of approval 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.

State of Oregon
Department of Environmental Quality Memorandum

Date: April 7, 2008

To: Environmental Quality Commission

From: Dick Pedersen, Acting Director

Subject: Agenda Item K, Informational Item: Draft 2009 Legislative Agenda
April 24-25, 2008 EQC Meeting

Purpose of Item The purpose of this agenda item is to present updated information to the Environment Quality Commission (EQC) about the Department of Environmental Quality's (DEQ) draft legislative concepts and budget policy packages for 2009-11, and for the EQC to provide guidance to DEQ staff on ongoing development of the legislative agenda. DEQ staff will provide more detailed information about staffing needs and costs, as well as an overview of the legislative concepts submitted to the Department of Administrative Services (DAS) and the Governor's Office on April 4, 2008.

Background DEQ staff presented the draft DEQ budget policy packages and legislative concepts for the 2009 Legislative Agenda at the February EQC meeting. The information included a listing of program concepts under consideration that could result in legislative concepts, budget policy packages or both. Taking into consideration the EQC's comments from the February meeting, staff have further developed these concepts into better-defined packages.

Every two years, state agencies must develop legislative concepts and budget policy packages as part of the legislative and budget development process. The October 2007 Strategic Planning discussion was considered the beginning of the development of the 2009 Legislative Agenda. This development process will continue throughout 2008 in preparation for the 2009 Legislative Session. Key deadlines in this process include the following:

- Submittal of draft legislative concepts to the Department of Administrative Services (DAS) on April 4, 2008
- Submittal of the Agency Request Budget on September 1, 2008 to DAS and the Governor's Office. This submittal includes the base budget and the budget policy packages.

EQC Involvement

At each of the 2008 Commission meetings, DEQ plans to bring updates to the EQC and seek input on the development of the 2009 Legislative Agenda. The goal is for the Commission to be actively engaged in the development of legislative concepts, budget policy packages and the base budget. At the August 2008 meeting, the EQC Chair will need to certify the 2009-11 Agency Request Budget for submittal to DAS and the Governor's Office on September 1, 2008.

Attachments

A. List of draft legislative concepts submitted to Department of Administrative Services, April 4, 2008

Approved:

Section: Gregory K. Aldrich

Report Prepared By: Gregory K. Aldrich

Phone: (503) 229-6345

DEQ DRAFT 2009 LEGISLATIVE CONCEPTS

Name	Problem Statement	Brief Description of Proposal	PP	LC	Fund Type	Relates to Toxics(T), Water(W), Climate Chg(C), Infrast(I)
AQ-1 GHG Cap and Trade and Other Emission Reduction Programs	HB 3543 established Greenhouse Gas (GHG) reduction goals for the state, and the Governor asked the EQC to adopt mandatory GHG reporting rules. The next step is to develop market based programs to reduce GHG emissions.	The DEQ LC will fill gaps in GHG reporting authority, add authority for a cap and trade program, add fees for reporting and cap and trade and add authority to adopt other GHG emission reduction measures and incentives.	Y	Y	GF/OF	C
AQ-2 Heat Smart	Residential heating with old, uncertified woodstoves releases fine particles and air toxics such as benzene that contribute to a myriad of human health effects. Heat Smart is a critical component of plans to meet and maintain the federal fine particulate standard and meet state air toxics benchmarks.	The LC will establish a grant and loan program to remove old, uncertified woodstoves and replace them with new, cleaner alternatives, require the removal of uncertified woodstoves upon home sale and provide authority for the EQC to update OR woodstove standards.	Y	Y	GF and Penalties	T
AQ-3 Clean Emission Standards for Nonroad Vehicles	Diesel engine exhaust is one of the most prevalent toxic air pollutants in Oregon, and contributes significantly to fine particulate pollution, regional haze, smog and global warming.	The LC will address a gap (non-road engines) in the Environmental Quality Commission's (EQC) authority to establish emission standards for diesel engines that could lead to "dumping" of older, dirtier, vehicles from California into Oregon.	Y	Y	GF, FF, OF	T
AQ-5 Alternative to Permitting	EPA is about to adopt national air toxics standards (National Emissions Standards for Hazardous Air Pollutants -NESHAP) for 70 different source categories. Most are small businesses (area sources) and include businesses like auto body repair shops, paint strippers and parts coaters. They would like compliance options other than a permit.	The LC will authorize a registration fee (lower than a permit fee) for source categories that choose compliance options beyond compliance required by a permit.	Y	Y	OF	T
AQ-8 Title V Fee Technical Correction	SB 107, adopted in 2007, increased Title V fees and changed the frequency of the Consumer Price Index (CPI) rulemaking but failed to make corresponding changes in the CPI calculation. The net effect is a loss of one CPI increase each biennia.	The LC will correct the 2007 legislation and provide for CPI increases as intended.	N	Y	OF	
AQ-9 Burning Phase Down and Smoke Management Coordination	Reducing burning is a key strategy to improve air quality in Oregon.	The LC will phase down field burning in the Willammette Valley over several years as new alternatives to burning are developed and include a process for EQC to allow more acres to be burned than otherwise permitted in a given year upon a demonstration that viable alternatives are not yet available. The LC would also direct DEQ to provide support and coordination for open burning and smoke management programs.	P	Y	TBD	T

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LQ-1 Bottle Bill Changes	The task force is currently meeting to discuss further changes to the bottle bill law. Those issues include whether the statute should be expanded for additional items, the amount of the redemption, whether recycling should occur at retail locations or some other place, etc. Given the visibility of this law, DEQ should have a legislative "placeholder" for the 2009 session.	Placeholder for possible 2009 legislation.	TBD	TBD	TBD/OF	C
LQ-2 Producer Responsibility for Difficult-to-Manage Products	Some products have unique waste management challenges. They contain toxics or multiple materials, making them costly and difficult to recycle or safely dispose of in the traditional waste management system. As a result, the public lacks convenient and safe recycling or disposal options. This increases the risk of mismanagement and human health / environment impacts. Finally, where these products are handled through the current system, local governments and ratepayers bear the fiscal burden.	The LC requires manufacturers rather than local governments to manage specified products so as to enhance their recycling or safe disposal. Through this LC, the Legislature would define the process/criteria for DEQ to identify the appropriate products or categories. The EQC would make the final determination under the statute. Specified products could not be sold unless DEQ approved the manufacturer's plan for the collection, recycling or safe disposal of these products.	Y	Y	OF	C, T
WQ-11 401 Water Quality Fee Revision	The 401 Water Quality Certification (fill and removal projects) program's fee structure exempts approximately 52% of applicants from fees. Many of these dredge and fill projects in rivers, lakes, streams, and wetlands are complex and take a great deal of time.	The purpose of this proposal is to remove/modify the exemptions and have a equitable fee structure that will provide sustainable funding for the program.	Y	Y	OF/fees	W
Enf-1 Penalty maximum enhancement	The $10,000 per day statutory maximum penalty applicable to most DEQ penalties, and the $20,000 per day maximum penalty applicable to negligent spills of oil into waters of the state, were set in 1973. Because of inflation, today's penalties are only worth 20% to 25% of their original potency.	Increase the statutory maximum penalties.	N	Y		T, W
Definitions						
N=No						
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P=Possible						
TBD=Unknown at this time						
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Definitions						
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Handout – Item K

DEQ's 2009-11 Legislative Agenda/Budget Request
April 25, 2008 EQC Meeting

Presentation Outline

- Legislative concepts
  - Handout: DEQ Draft 2009 Legislative Concepts
- Legislative agenda timeline update
  - Handout: DEQ's 2009-11 Legislative Agenda Development Timeline
- Policy packages
  - Handouts: DEQ FTE Over Time
    Draft 2009 Legislative Agenda Sorted by Theme
    Results of EMT Binary Ranking of GF Packages 4/4/08
    Criteria Options for Ranking/Prioritizing GF Packages
- Next steps

DEQ's 2009-11 Legislative Agenda Development Timeline

June 2007
- DEQ's 2007-09 Budget was adopted

October 2007
- 18-19 EQC Strategic Planning Session and Discussion

December 2007
- 14 – EQC meeting to share preliminary concepts for the legislative agenda

Late 2007 through February 2008
- Development begins on 2009-11 Budget
  - Determine cost of currently approved programs adjusting for 2009-11 costs
  - Estimate future revenues
  - Determine "restorations" needed to cover future costs
  - Develop budget package proposals for new work that DEQ anticipates doing
  - Develop legislative concepts

February 2008
- 22 - EQC Meeting – focus on draft legislative concepts and budget policy packages

March 2008
- 6– Budget and Legislative Concept Instructions are released by DAS
- Ongoing legislative concept and budget policy package proposal development

April 2008
- **Stakeholder Outreach**
- **Ongoing legislative concept and budget policy package proposal development**
- **4 – Legislative concepts are due to DAS**
- **24-25 – EQC Meeting – focus on budget development**

May 2008
- **Stakeholder Outreach**
- **Ongoing budget development**

June 2008
- 2– DAS submits approved legislative concepts to Legislative Counsel
- 19-20 – EQC Meeting – update on legislative agenda and approval of initial budget submittal to DAS on 6/30
- 30 – Budget request submitted to DAS for audit

July 2008

- Budget narrative development
- 14 – Last day to modify legislative concepts

August 2008

- Budget narrative development
- 21-22 – EQC Meeting – legislative agenda update and Chair signs the Budget Certification Form (part of the agency of budget request document)

September 2008

- 1 – Agency Request Budget due to DAS and Governor

Fall 2008

- DEQ works with Legislative Counsel on draft bills (legislative concepts)
- DAS and Governor review DEQ budget request
- Governor's Recommended Budget submitted to the Legislature
- Governor pre-session files approved bills

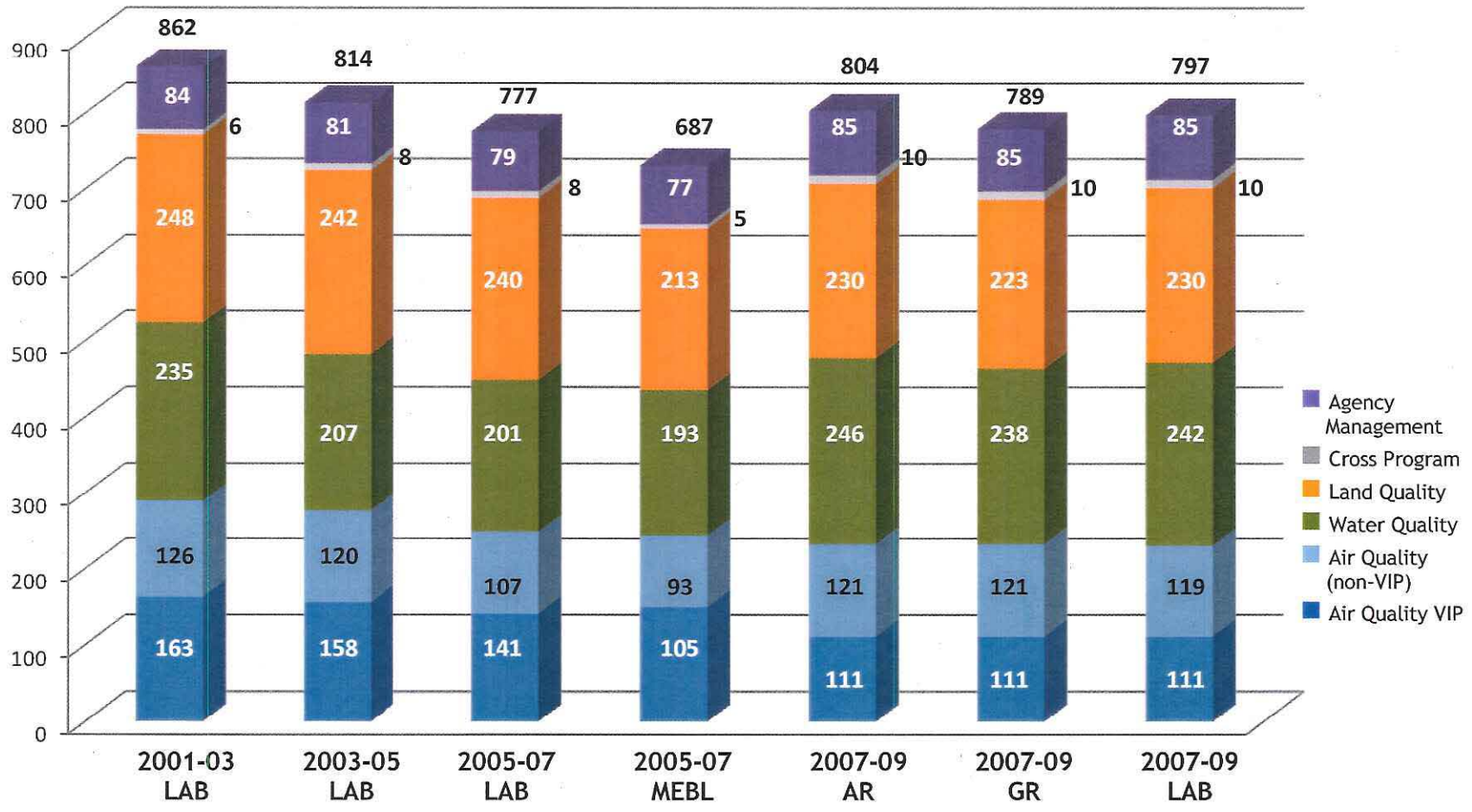
January 2009

- 12 – 2009 Legislative Session begins

4/9/08

DEQ FTE Over Time

By Biennium



Draft 2009 Legislative Agenda

Sorted by Theme
4/22/08

Climate Change

AQ support for transportation projects (AQ-7; OF)
Aquifer Storage and Recovery (ASR) & Artificial Recharge (AR) Support (WQ-6; GF)
Bottle Bill Changes (LQ-1; TBD)
Climate Change Package (AQ-1; GF, OF)

Total Positions: 14.5 FTE

Total General Fund Cost: $1.17 million

Grand Total Cost: $4.24 million

Expected Outcomes:

- Establish a framework for reducing greenhouse gas emissions in Oregon
- Integrate individual program efforts into a unified response

Key:
FF = Federal funds
GF = General Fund
OF = Other funding
TBD = unknown at this time

Toxics

Diesel emission reductions (AQ-3; GF)
Emergency Preparedness & Response (also water) (LQ-3; GF, OF)
Field Burning (AQ-9; GF)
Heat Smart for clean air (AQ-2; GF, OF)
Implement SB 737 (WQ-1; GF, OF)
Pesticide Stewardship Partnerships (WQ-10; GF)
Producer Responsibility for Difficult-to-Manage Products (also climate change) (LQ-2; OF)
Toxics Reduction (CP-1; GF)

Total Positions: 16.42 FTE + 2 limited duration

Total General Fund Cost: $3.54 million

Grand Total Cost: $4.61 million

Expected Outcome:

- Begin to develop an integrated DEQ response for toxics that is coordinated with other agencies like DHS/Public Health, ODA, ODF, etc.

Water

401 Water Quality Fee Revision (WQ-11; OF)
Drinking Water Protection (WQ-17; FF)
Orphan Site Account / O&M Funding (LQ-4; GF)
Restoration for 319 Program and TMDL Development (WQ-13; GF)
Restoration for Onsite Program (WQ-15; OF)
Restoration for UIC Program (WQ-16; OF)
TMDL Implementation and Nonpoint Source Pollution (WQ-8; GF)
WQ Program Infrastructure (WQ-9; GF)
Water Quality Administration (WQ-2; GF)
Wave Energy Reimbursement (WQ-5; GF)

Total Positions: 23.5 FTE (including 12 restorations) + 5.5 limited duration

Total General Fund Cost: $4.75 million

Grand Total Cost: $8.62 million

Expected Outcomes:

- Oregon and DEQ continue to rebuild and strengthen our commitment to water quality

Agency Infrastructure

Clean Water State Revolving Fund program (WQ-7; OF)
E-Commerce (CP-3; GF)
Environmental enforcement program enhancement (Enf-4; GF)
Environmental Information Exchange Network (CP-2; FF, GF
Human Resources Service Delivery (AM-2; Indirect)
Modernize Information Management Infrastructure (AM-1; Indirect)
Public Access to Environmental Information (CP-4; GF)
Restorations (AM-3; Indirect TBD)

Total Positions: 26.5 FTE (including 2 restorations and 8 indirect)

Total General Fund Cost: $3.05 million

Grand Total Cost: $6.49 million (includes $2.0 million in indirect funding)

Expected Outcome:

- Improve DEQ's internal infrastructure in order to improve internal efficiencies and to better serve Oregonians

Monitoring and Assessment

Air Quality monitoring and analysis (AQ-6; GF)
Oregon Plan Monitoring (WQ-3; GF)
Marine Reserves, Ocean Health Monitoring (WQ-4; GF)
Beach Monitoring (WQ-18; FF)

Total Positions: 11 FTE + 11.2 seasonal temporary

Total General Fund Cost: $3.68 million

Grand Total Cost: $3.97 million

Expected Outcome:

- DEQ proposes to expand its monitoring capacity while enhancing its analysis efforts to inform public policy and provide useful information to Oregonians

Miscellaneous

Agriculture Air Quality (AQ-10; GF)
Alternatives to Permitting (AQ-5; OF)
E-Waste/Contract Limitation (LQ-5; TBD)
Environmental crimes investigation enhancement (Enf-2; GF)
Environmental crimes prosecution enhancement (Enf-3; GF)
Penalty Maximum Enhancement (Enf-1; N/A)
Title V Fee Technical Correction (AQ-8; OF)
Vehicle Inspection placeholder (AQ-4; OF)

Total Positions: 6 FTE + 3 limited duration

Total General Fund Cost: $0.59 million

Grand Total Cost: $1.91 million

Results of EMT Binary Ranking of GF Packages April 4, 2008

Package	Score	Ranking	FTE	Non-FTE
AQ-1 Climate Change	256	1	3	$265K
WQ-13 Restoration for 319 program & TMDL implementation	250	2	2	
WQ-8 TMDL Implementation & Nonpoint Source Pollution	228	3	4	$96K
WQ-1 Implement SB737	225	4	1	$96K
CP-1 Toxics Reduction	215	5	2.5	
WQ-2 WQ Administration	214	6	2	$250K
CP-4 Public Access to Environmental Information	210	7	6	$700K
WQ-10 Pesticide Stewardship Partnerships	205	8	5+	$40K
WQ-12 Restoration for Data Management	199	9	1	
CP-3 E-Commerce	198	10	3	$700K
WQ-14 Restoration for Wastewater Permitting	186	11	3	
WQ-9 WQ Program Infrastructure	173	12	4	
LQ-4 Orphan Site Account/O&M Funding	169	13	...	$1.5M
CP-2 Environmental Information Exchange Network	166	14	0.5	
AQ-6 AQ Monitoring & Analysis	162	15	8	
WQ-15 Restoration for On-site	158	16	TBD	
LQ-3 Emergency Preparedness & Response	150	17	2	
WQ-3 Oregon Plan Monitoring	139	18	.5 + 9 temps	
AQ-2 Heat Smart	135	19	1	$50K
AQ-9 Burning & Air Quality	132	20	2	
AQ-3 Diesel Emission Reductions	125	21	...	$1-2M
Enf-4 Environmental Enforcement Program Enhancement	117	22	2	
LQ-1 Bottle Bill Changes	116	23	TBD	
Enf-3 Environmental Crimes Prosecution	115	24	...	
WQ-6 Aquifer Storage & Recovery and Artificial Recharge Support	114	25	1	
Enf-2 Environmental Crimes Investigation	98	26	...	
WQ-4 Marine Reserves, Ocean Health Monitoring	67	27	3+	$192K
WQ-5 Wave Energy Reimbursement	60	28	TBD	$50K
AQ-10 Dairy Task Force	56	29	1	

Notes: This is an initial ranking of general fund budget packages, that was done to facilitate discussion among the EMT. This is not DEQ's final ranking.

The process we used was to have each EMT member rank the packages individually, and then we simply averaged the individual rankings. Thus, if half of the EMT thought a package was top priority and the other half thought it was bottom priority, it would show as a middle priority. The rankings do not take into account the possibility of splitting or regrouping the packages, so that the highest priority part of a large package could be compared separately to the other packages.

Criteria Options for Ranking/Prioritizing GF Packages

Below is a listing of ranking criteria to keep in mind while prioritizing the GF packages. The list has been updated to include input from the EMT discussion on March 25.

DEQ 2009 Legislative Themes:

- Agency Infrastructure
- Toxics
- Water
- Climate Change
- Monitoring

Governor's Priorities:

- Education
- Health Care (focus on kids)
- Transportation
- Climate Change

Strategic Directions

- DEQ's Commitment to Excellence
- DEQ Promotes Sustainability
- DEQ Improves Oregon's Air and Water
- DEQ Protects Oregonians from Toxic Pollutants
- DEQ Involves Oregonians in Environmental Problem-Solving

Commission Focus/Priorities – examples include:

- Climate Change
- Producer Responsibility
- E-Commerce
- Public Access to Environmental Data

Commitments Made – example SB 737

Environmental Needs

Agency Needs (gaps in existing work efforts)

Ability to Leverage Current Resources

Degree of External Support

Public Forum (1)

Oregon Environmental Quality Commission

Public Forum
Request to Present Information

Agenda Item C or
Topic of Presentation UMATILLA FACILITY (UMCDF) RISK ASSESSMENTS

SUE OLIVER, REPRESENTING DR. RODNEY SKEEN
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Affiliation | Email (optional) | Phone (optional)
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✓

Public Forum (2)

Oregon Environmental Quality Commission

Public Forum
Request to Present Information

Agenda Item C or
Topic of Presentation Umatilla

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✓

GHG Public Hearing ✓2

Oregon Environmental Quality Commission

Public Forum
Request to Present Information

Agenda Item H or
Topic of Presentation GHG Reporting

Tom O'Connor
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Oregon Municipal Electric Utilities Assoc.
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GHG Public Hearing (1)

Oregon Environmental Quality Commission ✓

Public Forum
Request to Present Information

Agenda Item H or
Topic of Presentation Greenhouse Gas Reporting

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3:35p. 3:45 #1 ✓

Oregon Environmental Quality Commission

Public Forum
Request to Present Information

Agenda Item ____ or
Topic of Presentation LNG

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GHG Public Hearing (3)

Oregon Environmental Quality Commission

Public Forum
Request to Present Information

Agenda Item H or
Topic of Presentation Greenhouse Gas Reporting

Jim Edelson
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#3✓

Oregon Environmental Quality Commission

Public Forum
Request to Present Information

Agenda Item ____ or
Topic of Presentation Depot

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GHG Public Hearing (3)

Oregon Environmental Quality Commission

Public Forum
Request to Present Information

Agenda Item 4 or
Topic of Presentation Greenhouse Gas Reporting

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#5

Oregon Environmental Quality Commission

Public Forum
Request to Present Information

Agenda Item ____ or
Topic of Presentation Regional Haze Rulemaking & Best Available Retrofit Technology

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#4

Oregon Environmental Quality Commission

Public Forum
Request to Present Information

Agenda Item ~~6~~ or
Topic of Presentation KYLE MAKINTO

DAVID MONK
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LRAPA
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