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OREGON
ENVIRONMENTAL QUALITY
COMMISSION MEETING
MATERIALS 10/10/1991

State of Oregon
Department of Environmental Quality

State of Oregon

ENVIRONMENTAL QUALITY COMMISSION

A G E N D A

REGULAR MEETING -- October 10, 1991

DEQ Conference Room 3a
811 S. W. 6th Avenue
Portland, Oregon
10:00 a.m.

A. Election of Chair of the Environmental Quality Commission

B. Salt Caves Hydroelectric Project: Consideration of Hearings Officer's Proposed Findings and Order on the Appeal of the Director's Denial of §401 Certification

Note: This is a contested case proceeding involving three parties; the City of Klamath Falls, DEQ, and a Consortium of Conservation Organizations. Public testimony will not be received. The Hearings Officer has entered a Proposed Order (including Findings). The parties have been given the opportunity to file written exceptions with the Commission. The Commission will allow parties five (5) minutes each to summarize their position on the proposed order. The Commission may ask questions of the parties. The Commission will then deliberate toward a decision in the matter.

C. Directions to the Department and Delegation to the Director

11:30 a.m. Public Forum

This is an opportunity for citizens to speak to the Commission on environmental issues and concerns not a part of the agenda for this meeting. Presenters are asked to limit their comments to five (5) minutes. The Public Forum will be continued at the end of the meeting if a large number of speakers wish to appear.

Lunch Break

1:00 p.m. Work Session

D. Panel Discussion: Proposed Rules for Mining Operations Using Chemicals to Extract Metals from Ores

Note: Public Hearings on the proposed rules have already been held. Testimony will be limited to comments from invited panel members only. The purpose for this discussion is for the Commission to have an opportunity to understand the proposed rules and ask questions of the panel and of agency representatives. The Commission will then consider the matter and will provide direction to the Department on the next steps to be taken.

Because of the uncertain length of time needed, the Commission may deal with any item at any time in the meeting except those set for a specific time. Anyone wishing to be heard on any item not having a set time should arrive at the beginning of the meeting to avoid missing any item of interest.

Copies of the staff reports on the agenda items are available by contacting the Director's Office of the Department of Environmental Quality, 811 S. W. Sixth Avenue, Portland, Oregon 97204, telephone 229-5395, or toll-free 1-800-452-4011. Please specify the agenda item letter when requesting.

September 23, 1991

Approved _____
Approved with corrections ____
Corrections made _____

MINUTES ARE NOT FINAL UNTIL APPROVED BY THE EQC

ENVIRONMENTAL QUALITY COMMISSION

Minutes of the Special Phone Conference Meeting
August 22, 1991

The Environmental Quality Commission Special Telephone Conference Meeting was convened at about 9:00 a.m. on Tuesday, August 22, 1991. Participating in the conference call were Chair Bill Hutchison, Vice Chair Emery Castle, Commissioner Bill Wessinger, Director Fred Hansen, and various Department staff members. The public could participate by speaker phone in Conference Room 3b of the Department of Environmental Quality Offices at 811 S. W. 6th Avenue in Portland, Oregon.

The purpose of the meeting was to consider Department recommendations to authorize public hearings on seven items in response to requirements of the 1990 Federal Clean Air Act Amendments. The items cover four control strategies and eight rules relating to PM_{10} (solid or liquid particles of less than 10 microns in size).

Control strategies for the Eugene/Springfield, Grants Pass, Medford, and Klamath Falls areas were previously adopted in the November 1990-January 1991 period. The 1990 Federal Clean Air Act Amendments impose new requirements which necessitate, in some cases, revisions to the existing control strategies, adoption of new control strategies, and adoption of new or revised PM_{10} related rules. Specifically, the 1990 amendments:

- Establish November 15, 1991 as the deadline to submit PM_{10} control strategy revisions to the state implementation plan.
- Establish December 31, 1994 as the deadline for compliance with the PM_{10} standard.
- Require adoption of specific Reasonably Available Control Measures (RACMs) for woodheating, open burning and industry.
- Require adoption of contingency plans that will be automatically implemented if the December 31, 1994 attainment date of the Act is not met.
- Require adoption of specific Best Available Control Measures for industry within 18 months of the date an area fails to meet the attainment deadline.

- Require that all PM_{10} related rules and enforceable provision of the control strategy be approved by EPA as a condition of EPA being able to fully approve the PM_{10} control strategies.

The Department proposed that the Commission authorize public hearings on the following agenda items with the intent that hearings be held and the matters returned for Commission adoption at a meeting to be held on November 8, 1991:

A. Hearing Authorization: Revised PM_{10} Control Strategy for the Medford-Ashland Air Quality Maintenance Area (AQMA)

This item presented a proposed addendum to the Strategy for the Medford-Ashland area to include specific Reasonably Available Control Measures and a contingency plan. The Department is proposing to utilize its new backup woodstove curtailment authority for Central Point to meet the enforceability requirement of the act for RACMs for woodstoves. Other RACMs include a ban on sale and installation of used non-certified woodstoves and a more restrictive ventilation index for open burning. Attachment A of the staff report contains the proposed addendum to the strategy.

Proposed contingency plans that would automatically go into effect if the area fails to attaint the PM_{10} standard by the deadline of December 31, 1994 included removal and destruction of non-certified woodstoves upon home sale, a November-February ban on open burning, and additional industrial control systems that meet the Act's requirement for Reasonable and Best Available Control Technology.

B. Hearing Authorization: Revised PM_{10} Control Strategy for the Klamath Falls Non-Attainment Area

This item presented a revised control strategy for Klamath Falls as presented in Attachment A of the staff report. The revised strategy includes specific Reasonably Available Control Measures and a contingency plan. The RACM provisions of the recently adopted Klamath County Clean Air Ordinance have been incorporated into the control strategy and include a mandatory curtailment program, a year around 20% visible emissions requirement for woodstoves and a ban on installation of used non-certified woodstoves.

Proposed contingency plans include a) removal and destruction on non-certified woodstoves upon home sale, b) a mandatory fuelwood seasoning requirement, c) expansion of Klamath County's air quality control area, d) a prohibition on installation of more than one woodstove in a new dwelling, e) additional dust control measures, and f) mandatory forestry and agriculture smoke management programs within Klamath County. Industry within the non-attainment area would also be required in the contingency plan to install new control measures to meet

the Act's requirements for Reasonable and Best Available Control Technology (RACT/BACT). Industry located near the non-attainment area would be required to install RACT/BACT controls if their emissions are found to have a significant impact on the non-attainment area.

C. Hearing Authorization: Revised PM_{10} Control Strategy for Grants Pass

This item presented a proposed addendum to the control strategy for PM_{10} for the Grants Pass area. The proposed addendum was included as Attachment A of the staff report. The addendum includes specific Reasonably Available Control Measures and a contingency plan. The RACM elements to be added include a ban on the sale or installation of used, non-certified woodstoves, and a more restrictive ventilation index for open burning.

Proposed contingency plan measures include a) state backup mandatory curtailment authority for residential woodburning if local government fails to adopt or implement this program, b) destruction of non-certified woodstoves upon home sale, c) new emission controls for certain sized industrial wood dust handling systems, and d) a ban on open burning within the Grants Pass Urban Growth Boundary during the heating season. The industrial contingency element would meet the Acts requirements for RACT/BACT.

D. Hearing Authorization: New PM_{10} Control Strategy for the La Grande Air Quality Non-Attainment Area

This item presented a proposed control strategy for PM_{10} for the La Grande Non-Attainment Area (Attachment A of the staff report). The proposed strategy will include Reasonably Available Control Measures and a contingency plan. RACM provisions of the recently adopted La Grande Air Quality Improvement Ordinance have been incorporated into the control strategy, and include a voluntary woodburning curtailment program, a public education program, and fugitive dust control measures. Additional reductions are expected from the phase in of certified woodstoves, a ban on the installation of used, non-certified stoves, and seasonal restrictions on open burning.

Proposed contingency plan measures include implementation of a mandatory woodburning curtailment to be established under city ordinance (with state backup authority), state authority for destruction of non-certified woodstoves upon sale of a home, and a requirement to install new industrial controls which will meet the requirements for RACT/BACT.

E. Hearing Authorization: New Industrial PM_{10} Emission Standard Rules and other Related House-Keeping Measures

This item requested authorization to hold a rulemaking hearing on a package of new rules and rule revisions needed in support of revised and new PM_{10} control strategies. The proposed rules were presented in Attachment A of the staff report. Included are new industrial contingency particulate emission standards that would be applicable to industrial sources located in PM_{10} non-attainment areas that fail to reach attainment by December 31, 1994, as well as industrial sources outside the non-attainment area which could significantly affect the area. Also included are housekeeping amendments to clarify statewide industrial rules applicable to veneer dryers and a number of additional PM_{10} sources subject to special control rules in the Medford-Ashland and Grants Pass areas.

F. Hearing Authorization: Rule Amendments for the Rogue Basin Open Burning Special Control Area

This item requested authorization to hold a rulemaking hearing on rule changes that would require more restrictive ventilation criteria for the Rogue Basin Open Burning Control Area consistent with local ordinances. The proposed rules were presented in Attachment A of the staff report. The proposed rule changes would also impose a ban on open burning in the entire Open Burning Control Area during November, December, January, and February as part of the contingency plans if the Medford-Ashland or Grants Pass area fails to meet PM_{10} standard by December 31, 1994.

G. Hearing Authorization: Residential Wood Heating Rule Amendments

This item requested authorization to hold a rulemaking hearing on new residential woodheating rules to meet control measure and contingency measure requirements of the Clean Air Act. These rules, presented in Attachment A of the staff report, were authorized by HB 2175 passed by the 1991 legislature and cover the following areas:

- Prohibition on the sale of used non-certified woodstoves.
- State backup enforcement of residential woodheating curtailment in PM_{10} non-attainment areas.
- Requirement for the removal and destruction of used non-certified woodstoves upon sale of a home in a PM_{10} nonattainment area that does not attain compliance with the standard by December 31, 1994.

The proposed rules would be codified into a new Division 34 of OAR Chapter 340, and existing woodstove certification rules would be moved from Division 21 to Division 34.

Department staff noted in discussions that Lane Regional Air Pollution Control Authority will be conducting hearings on a revised Eugene/Springfield PM_{10} control strategy. This will be brought to the Commission for adoption in November along with the final proposals on the above proposed hearing authorizations. The Department also noted that the Oakridge area is a recently designated non-attainment area for PM_{10}. Oakridge has until December 1992 for adoption of a control strategy due to its recent designation.

It was MOVED by Commissioner Castle that the Department recommendation be approved. The motion was seconded by Commissioner Wessinger and approved by the three Commission members present.

The telephone conference was adjourned at about 9:50 a.m.

Approved _____
Approved with corrections ____
Corrections made _____

MINUTES ARE NOT FINAL UNTIL APPROVED BY THE EQC

ENVIRONMENTAL QUALITY COMMISSION

Minutes of the Two Hundred and Fifteenth Meeting
September 18, 1991

Regular Meeting

The regular meeting of the Environmental Quality Commission was convened at about 8:40 a.m. on Wednesday, September 18, 1991, in Conference Room 3a of the Department of Environmental Quality Offices at 811 S. W. 6th Avenue in Portland, Oregon. Commission members present were: Chair Bill Hutchison, and Commissioners Bill Wessinger, Carol Whipple and Henry Lorenzen. Vice Chair Emery Castle was out of the state and not able to attend the meeting. Also present were Larry Knudsen of the Attorney General's Office, Director Fred Hansen of the Department of Environmental Quality and Department staff.

NOTE: *Staff reports presented at this meeting, which contain the Department's recommendations, are on file in the Office of the Director, Department of Environmental Quality, 811 S.W. Sixth Avenue, Portland, Oregon 97204. Written material submitted at this meeting is made a part of this record and is on file at the above address. These written materials are incorporated into the minutes of the meeting by reference.*

Public Forum was the first item scheduled on the agenda. No one signed up to speak.

The following items were listed on the agenda as **Consent Items**:

A. Approval of Minutes of the June 13-14, 1991, July 24-25, 1991, and Telephone Conference Meetings

Drafts of the minutes for the following meetings were circulated to the Commission prior to the meeting:

April 30, 1991	Telephone Conference Meeting
May 7, 1991	Telephone Conference Meeting
May 14, 1991	Telephone Conference Meeting
May 21, 1991	Telephone Conference Meeting
May 28, 1991	Telephone Conference Meeting
June 4, 1991	Telephone Conference Meeting
June 13-14, 1991	Regular Commission Meeting

June 18, 1991 Telephone Conference Meeting
June 25, 1991 Telephone Conference Meeting

Minutes for the July 24-25, 1991, meeting were not completed for approval at this meeting.

B. Approval of Tax Credit Applications

The Department recommended that approval be granted on Pollution Control Facility Tax Credit applications as follows:

TC-2187	Praegitzer Industries, Inc.	Wastewater spill containment and treatment facility.
TC-2264	Coast Wide Ready Mix Co.	Wastewater settling pond.
TC-2387	Delta Engineering and Manufacturing Co.	Modification of wastewater treatment system.
TC-2488	A. Edward & Betty Hemenway	Wastewater control facility.
TC-2732	Willamette Industries, Inc.	Wastewater treatment system.
TC-2793	Charles T. Collins Colsper Corp.	Baler, hogger and conveyor belt system.
TC-2871	Steinfeld's Products Co.	Modification of wastewater pretreatment system.
TC-3106	Glenbrook Nickel Co.	Large duct to stacks of electrostatic precipitator.
TC-3250	Precision Castparts Corp.	pH monitoring system.
TC-3413	Parson's Pine Products, Inc.	Modifications to cyclone and conveyance systems.
TC-3436	Anodizing, Inc.	Wastewater treatment system.
TC-3501	Clemens Automotive	Auto air conditioner recycling equipment.
TC-3503	Mike McCarter Ford's Automotive	Auto air conditioner recycling equipment.
TC-3505	Fisher's Arco	Auto air conditioner recycling equipment.
TC-3506	Roe Motors, Inc.	Auto air conditioner recycling equipment.

TC-3513	Hillsboro Chevron Service Center	Auto air conditioner recycling equipment.
TC-3517	Kenneth W. Darrow	Auto air conditioner recycling equipment.
TC-3518	Roberson Shell	Auto air conditioner recycling equipment.
TC-3523	Jim Doran Chevrolet-Olds, Inc.	Auto air conditioner recycling equipment.
TC-3524	Paul D. Parker	Two terex front end loaders.
TC-3530	Teledyne Ind., Inc.	Modification of furnace seals.
TC-3532	Sandra Powell	Auto air conditioner recycling equipment.
TC-3533	Dean and Kathleen Schrock	Rear's 12' grass vac; John Deere 27 flail chopper; Rear's 30' propane flamer; John Deere 4450 140 HP tractor.
TC-3536	Lucas Mack Sales & Service, Inc.	Auto air conditioner recycling equipment.
TC-3537	McCullum's Texaco Service, Inc.	Auto air conditioner recycling equipment.
TC-3538	Steve's Automotive	Auto air conditioner recycling equipment.
TC-3539	Kuschnick Bros. Farms	Used propane field flamer.
TC-3540	Steven J. Rohner	John Deere 14' flail chopper.
TC-3541	Nyquist Country Farms	New Holland 505 baler.TC-3542
TC-3545	Johnson Creek Texaco	Auto air conditioner recycling equipment.
TC-3546	American Auto Recycling, Inc.	Auto air conditioner recycling equipment.
TC-3547	Buck Medical, Inc.	Auto air conditioner recycling equipment.
TC-3548	McCullum's Texaco, Inc.	Installation of four STI-P3 tanks and fiberglass piping, spill containment basins, tank monitor, line leak detectors, automatic shutoff valves, overfill alarm and monitoring wells.

TC-3549	Albina Fuel Company	Installation of epoxy lining in thirteen tanks, double wall fiberglass piping, spill containment basins, tank monitor, line leak detectors, oil/water separator and Stage I vapor recovery equipment.
TC-3555	Quentin & Lola Probst	Installation of three STI-P3 tanks, fiberglass piping, spill containment basins, tank monitor, turbine leak detectors, automatic shutoff valves, monitoring wells, Stage I vapor recovery equipment, sumps and an overfill alarm.
TC-3556	Bi Mart Corp.	Auto air conditioner recycling equipment.
TC-3557	Chambers Plumbing & Heating, Inc.	Auto air conditioner recycling equipment.
TC-3558	Elliot's Auto Service, Inc.	Auto air conditioner recycling equipment.
TC-3559	Ted's Collision Repairs, Inc.	Auto air conditioner recycling equipment.
TC-3561	Don Rasmussen Co.	Auto air conditioner recycling equipment.
TC-3570	Troutdale Chevron, Inc.	Auto air conditioner recycling equipment.
TC-3574	McCall Heating Co.	Installation of three fiberglass tanks and piping, spill containment basins, tank monitor, monitoring wells, sumps, oil/water separator, automatic shutoff valves and line leak detectors.
TC-3577	Jantzen Beach Chevron	Auto air conditioner recycling equipment.
TC-3578	Dennis Thompson	Installation of two fiberglass tanks, fiberglass piping, spill containment basins, line leak detectors and monitoring wells.
TC-3579	Capital City Co., Inc.	Installation of four STI-P3 tanks, fiberglass piping, spill containment basins, tank monitor, line leak detectors, overfill alarm, monitoring wells, sumps, automatic shutoff valves and Stage I and II vapor recovery equipment and piping.
TC-3581	Capital City Co., Inc.	Installation of three STI-P3 tanks and double wall fiberglass piping, spill containment basins, tank monitor, line leak detectors, overfill alarm, monitoring wells, sumps, automatic shutoff valves and Stage I and II vapor recovery equipment and piping.
TC-3583	C.T. Auto Repair	Auto air conditioner recycling equipment.

TC-3584	Daily's Tire & Wheel	Auto air conditioner recycling equipment.
TC-3608	Estacada Oil Co.	Installation of six STI-P3 tanks, double wall fiberglass piping, spill containment basins, tank monitor, line leak detectors and an oil/water separator.

C. Authorization for Rulemaking Hearing: Revisions to Drug Lab Cleanup Rules to Eliminate Cost Share Requirements

This agenda item requested authorization to hold a public rulemaking hearing on Illegal Drug Lab Cleanup Rules as presented in Attachment A of the staff report. The proposed amendments were necessary to incorporate changes mandated by the 1991 legislature. The proposed amendments would eliminate the requirement in current rules that local law enforcement agencies share in the cost of cleanups. Provisions of existing rules requiring cost share for federal agencies will remain. Minor housekeeping amendments were also proposed in the rule package.

A revised draft of Attachment D to the agenda item was distributed to the Commission. The revision to the hearing notice was intended to better describe the issue and did not alter the recommendation to authorize the rulemaking hearing

D. Authorization for Rulemaking Hearing: Proposed Increase in Solid Waste Tipping Fee (1) as Required by SB 66, and (2) to Initiate Funding for Orphan Site Cleanup Account **(contingent upon E-Board action to authorize spending on orphan sites)**

This agenda item requested authorization to hold a public rulemaking hearing on proposed rules to implement a fee increase for solid waste disposal facilities. The proposed rules were presented in Attachment A of the staff report. A $0.35 per ton disposal fee increase for the period from January 1, 1992, to December 31, 1993, was required by SB 66 enacted by the 1991 legislature. The proposed amendments revise the current rules and fee collection procedures to correspond with the new legislation. An additional $0.15 per ton was proposed to implement the orphan site cleanup account. These fees would add to the existing $0.50 per ton fee to bring the total fee to $1.00 per ton.

Director Hansen noted that the fee to initiate the orphan site cleanup account would not go forward unless the Emergency Board approves the budget for the cleanups at its November meeting. He also noted that the date of the proposed hearing may change in response to new information from the Attorney General's office.

Action on Consent Items

It was MOVED by Commissioner Wessinger that the Department recommendations on Consent Agenda Items A, B, C, and D as noted above be approved. The motion was seconded by Commissioner Whipple and unanimously approved.

E. Proposed Adoption of Rule Amendments to Incorporate National Emission Standards for Hazardous Air Pollutants (NESHAP) for Asbestos

This agenda item recommended that the Commission adopt proposed asbestos program rule amendments and rule additions as presented in Attachment A of the staff report. The Department's delegation agreement with the Environmental Protection Agency requires that all NESHAP regulations that are more stringent than the Department's existing asbestos regulations be incorporated into the Department's regulations. The proposed rule amendments accomplish this purpose, and in addition simplify existing rules to achieve greater clarity. The Department proposed to maintain a state rule regarding demolition involving non-friable asbestos that is more stringent than the federal rule because the existing standard is more protective of public health. Public Hearings were held on July 16 and 17, 1991, in Pendleton, Bend, Medford, and Portland. The rule proposal originally taken to public hearing was modified in response to hearing testimony. Portions of the rule were renumbered to achieve greater clarity.

Sarah Armitage, Manager of the Asbestos Program, and John Mathews of the Asbestos program staff, explained that the proposed rule amendments adopt federal requirements and do not alter one existing provision that is more stringent than new federal requirements. They noted that the rules require cradle to grave tracking for asbestos and that the rules were re-arranged to follow that path. They stated that the NESHAP requirements focus mostly on disposal. The rule amendments also revise notice requirements for asbestos abatement jobs that last for more than a year, deal with handling of asbestos, and change licensing and certification requirements to assure access to job sites for inspectors.

Ms. Armitage noted that the most controversial provision was the proposal to maintain the existing rule requirement for removal of non-friable asbestos prior to demolition. This provision is more stringent than EPA rules which provide for two categories of non-friable asbestos and a decision to either leave it or remove it prior to demolition. One company (Armstrong World Industries) commented on this proposal and expressed strong preference that the existing rule be relaxed to be consistent with the new federal rules. The Department provided a memo to the Commission summarizing the positions on this issue.

Commissioner Whipple asked if asbestos must be removed from a building before it is burned for fire practice by a fire department. Mr. Mathews responded that removal is

required to protect the public from exposure to asbestos. Director Hansen noted that it is the responsibility of building owners to remove many things that are considered a threat to public health and safety before building demolition (asbestos, solvents, etc.).

Duane Bosworth, an attorney representing Michael Otchet, counsel for Armstrong World Industries, Inc., urged the Commission to delay action on this item and provide more time for the Asbestos Advisory Board to study the issue. He stated that the rules are contrary to EPA rules, and are contrary to rules applicable in the other 49 states. He indicated that the proposed rule is a substantial change from the draft that went to public hearing, and that his client had a lot to say on the proposed changes but was unable to attend because the meeting was being held on a an important religious holiday for his faith.

Chair Hutchison asked for a response from staff. Ms. Armitage advised that Mr. Otchet had presented his concerns in the hearing, and that the Department had responded. The Department did not propose to relax its current rule, which is more stringent than new EPA rules. Mr. Otchet urged that the rule be relaxed to be consistent with the EPA rule. The Department believes the existing rule is necessary to protect public health and does not propose to relax it. The Advisory Board met to, among other issues, consider this issue. A quorum was not present. After discussion, the board members present decided to take no position and defer to the Department on the matter.

Ms. Armitage noted that Mr. Bosworth had called their attention to one error in the proposed rules on page 9, rule OAR 340-25-466(1)(b). The Department had intended to change the word "or" back to "and" and this change mistakenly did not occur in Attachment A. Therefore, the Department recommended that this change be made. She also stated that final rule recommendation looks different because of renumbering and minor changes, but is not significantly different in substance from the rules taken to hearing.

Commissioner Lorenzen expressed concern that Mr. Otchet apparently wanted to testify on changes made to the rules following the hearing and was unable to do so. Commissioner Lorenzen therefore MOVED that the matter be deferred until the next meeting. There was no second for the motion.

It was MOVED by Commissioner Wessinger that the Department recommendation, with the word "or" changed back to "and" in OAR 340-25-466(1)(b) be approved. The motion was seconded by Commissioner Whipple and approved with three yes votes and Commissioner Lorenzen voting no. The Commission asked that the Advisory Board be invited to comment on the matter and that the matter be returned to the Commission if there are any suggestion for modification.

F. Proposed Adoption of Rule to Authorize Enforcement Section Staff to Represent Department in Contested Case Hearings

This agenda item recommended that the Commission adopt proposed rules that would authorize the Department's Enforcement Section staff to represent the Department in contested case hearings involving civil penalties and/or Department orders. The proposed rules were presented in Attachment A of the staff report. ORS 183.450(7) allows an agency to be represented by employees of the agency if the Attorney General consents to the representation and if the agency has authorized the practice through rulemaking. The Attorney General has consented to the agency lay representation through a letter dated April 29, 1991. A public hearing was held on July 24, 1991. No oral or written comments were received on the proposal.

Director Hansen noted that the authority sought provides flexibility and is permissive, and not mandatory. He also noted that the Departments of Forestry and Fish and Wildlife already have this authority.

Commissioner Whipple asked about the effect on the other side in such cases. Director Hansen noted that the feeling would be better in those cases where the other side chooses to represent themselves rather than be represented by counsel.

It was MOVED by Commissioner Wessinger that the Department recommendation be approved. The motion was seconded by Commissioner Whipple and unanimously approved.

G. Proposed Adoption of Amendments to the Water Quality Standard for Antidegradation
(deferred from July meeting)

This agenda item proposed adoption of amendments to the provisions of the state Water Quality Standards dealing with antidegradation. The proposed rule amendments were presented in Attachment A of the staff report. Proposed revisions to the antidegradation rules were considered in eight public hearings held in January 1991. The Commission discussed the matter at a work session in April 1991. This item was deferred from the July meeting with the request that staff take the comments and concerns of the Commission into account and return the matter to the Commission for consideration in September.

Specifically, the Commission asked for additional detail on current rules on wilderness areas and state scenic waterways, the intent of the Congressional designation of Wild and Scenic Rivers with respect to protection of water quality, the Department's nomination process and timing of public requests for designation, the Department's resources for reviewing and forwarding nominations to the Commission, and more specific information about approaches

for how Outstanding Resource Waters could be managed to protect existing water quality without a moratorium on all human activities.

The proposed rule in Attachment A of the staff report would provide the Commission and Department with policy language to comply with federal requirements. It would establish three categories for designation of waterbodies: High Quality Waters, Water Quality Limited Waters, and Outstanding Resource Waters (ORW). All waters would be considered High Quality Waters unless specifically classified as Water Quality Limited Waters or Outstanding Resource Waters. The proposed rule provided a process for evaluation and designation of ORWs. It did not automatically place any waterbodies in the ORW classification.

Neil Mullane and Krystyna Wolniakowski of the Water Quality Division staff briefed the Commission on this item. They noted that rules already provide for designation of water quality limited waters and development of improvement programs. All other waters would be designated as high quality waters, and that affords a very high level of protection. Beneficial uses must be protected. Quality can be lowered only in very limited circumstances where the Commission finds that no options are available, and all existing uses will be protected. The ORW category was intended for those very few situations where extraordinary circumstances justify a policy of allowing no changes to water quality, and thus essentially no change in development status or no new activities.

Commissioner Wessinger expressed concern about the magnitude of the evaluation program required for ORWs and the adequacy of staff resource to handle it. Mr. Mullane responded that additional resources would be required.

Chair Hutchison expressed concern about the application process for ORWs in the proposed rules. He indicated he would be more comfortable with some form of an annual or biennial review process where the Commission could see if added protection is needed for some waters. He preferred something that would generate a priority list for evaluation and be subject to comment as part of the periodic review process. He was concerned that the application process would be unmanageable. Mr. Mullane indicated that a list of waterbodies that are candidates for evaluation for ORW designation could be developed as part of the 305b report process. He suggested that the application process on page A-2 of the rule could be deleted, and in place of it provide for handling through the 305b report and triennial review process.

Director Hansen noted the need for a clearly delineated process that meshes with the limited available resources.

Karl Anuta, representing Northwest Environmental Defense Center, urged the Commission not to back away from the current rule. He supported automatic designation of state parks and scenic waterways as ORWs.

Mary Scurlock, representing the Oregon Rivers Council, urged protection of the wild and scenic rivers. She endorsed Alternative 3 of the staff report which included automatic designation of ORWs and would not require time and resources to be expended in evaluation of these waterbodies prior to designation.

Commissioner Lorenzen expressed concern that existing designations of wild and scenic rivers were driven by values other than water quality, and that automatic designation as ORWs would impose conditions and criteria not contemplated.

Director Hansen noted again that the High Quality Waters policy provides a very high level of protection of water quality.

Following a brief recess, Ms. Wolniakowski presented proposed amendments to address the Commission concerns as follows:

- Page A-1 340-41-026(1)(a)(A) -- correct the wording as follows:

  HIGH QUALITY WATERS POLICY: Where existing water quality meets or exceeds those .....

- Page A-2 340-41-026(1)(a)(D) -- amend the proposal as follows:

  Delete the language beginning with the words "The Commission, either on their own initiative or through...." and continuing to the end of the page.

  Add the following language after the first two sentences of paragraph D:

  The Department will develop a screening process and establish a list of nominated waterbodies for Outstanding Resource Waters designation in the Biennial Water Quality Status Assessment Report (305(b) Report). The priority waterbodies for nomination include:

  i National Parks;
  ii National Wild and Scenic Rivers;
  iii National Wildlife Refuges;

iv State Parks; and
v State Scenic Waterways.

The Department will bring to the Commission a list of waterbodies which are proposed for designation as Outstanding Resource Waters at the time of the Triennial Water Quality Standards Review.

The final paragraph of the section which appears on page A-3 would be retained unchanged.

Chair Hutchison expressed the sense of the Commission that there is a reluctance to automatically designate ORWs, that the High Quality Waters designation provides good protection, and that a systematic process would be available for consideration of potential ORWs.

It was MOVED by Commissioner Wessinger that the Department recommendation as amended by the above recommendation be approved. The motion was seconded by Commissioner Lorenzen and unanimously approved.

H. Approval of Sewer Safety Net Funding Applications for FY 92

This agenda item recommended approval of individual community Sewer Safety Net (Assessment Deferral Loan) Programs and the overall Funding Allocation Plan for the 1991-93 biennium as presented in Attachments A and B of the staff report. Existing Commission rules require applications from eligible communities before the start of the biennium. Each community plan must be approved by the Commission to receive an allocation of available funds. Renewal applications were received from Portland, Gresham and Eugene. New applications were received from (1) the Marion County Service District for the Brooks Health Hazard Area, (2) the City of Albany for the North Albany Health Hazard Annexation Area, (3) the City of Oregon City for the Holcomb-Outlook-Park Place Health Hazard Annexation Area, and (4) The City of Corvallis for the West Philomath Boulevard, Skyline West, and West Hills Health Hazard Annexation Areas.

The Department recommended that all seven applications be approved with the exception of any program elements that exceed the scope of a 1991 budget note, and with approval for the Department to make fund allocation and program changes during the biennium within the limits of the budget note. (The 1991 legislative Ways and Means Committee adopted a budget note which was intended to limit the scope of eligibility to currently approved programs or standards that are not more lenient than current approved programs.)

The Commission considered this item at the July 24, 1991, Commission meeting. By consensus, the Commission agreed to defer action on this item until the next meeting so that the Department could do more research on legislative intent relative to the budget note and concerns raised by the City of Eugene regarding their program to assist owners of large lots. The question was whether Eugene's program change was an approved program or a change which was beyond the scope of what would be allowed under the budget note.

Martin Loring of the Water Quality Division staff reported that staff had researched the budget note more fully. The matter remained unclear, with opinions of the intent in relation to the Eugene proposal falling on both sides. The Department therefore recommended that the Commission support all seven Assessment Deferral Loan Program Applications as submitted by the applicant communities, including Eugene.

It was MOVED by Commissioner Lorenzen that the Department recommendation be approved. The motion was seconded by Commissioner Whipple and unanimously approved.

I. Pollution Control Bonds: Authorization to Issue State of Oregon Pollution Control Bonds **(approval by State Treasurer also required)**

This agenda item proposed that the Commission authorize the sale of Pollution Control Bonds in the amount of $35,350,000 for purposes of funding (1) sewer construction in Mid-Multnomah County, (2) the Assessment Deferral Loan Program, and (3) orphan site cleanup. A proposed **Resolution Authorizing and Requesting Issuance of Bonds** was attached to the staff report as Attachment A.

Director Hansen noted that this item was an effort to get the "ducks" in a row for when the State Treasurer lifts the moratorium on issuance of bonds.

It was MOVED by Commissioner Wessinger that the Department recommendation be approved. The motion was seconded by Commissioner Whipple and unanimously approved.

J. Pollution Control Bonds: Review and Approval of Amendments to the Intergovernmental Agreement with the City of Portland; Review of Bond Purchase Agreement; and Authorization of Special Assessment Improvement Bond Purchases from Portland

This agenda item recommended that the Commission approve amendments to the Intergovernmental Agreement and approve the Bond Purchase Agreement between the Department and the City of Portland. The Commission initially approved the Intergovernmental Agreement at its June 29, 1990, meeting. This agreement establishes a mechanism for financing sewer construction in Mid-Multnomah County whereby DEQ purchases Special

Assessment Bonds issued by the City with proceeds of simultaneously issued State of Oregon Pollution Control Bonds. As part of the risk sharing arrangement between the parties, the agreement required the City to provide $30 million of general obligation Bancroft financing for the affected area. Ballot measure 5 has made this requirement virtually impossible to fulfill. The Department and the City negotiated amendments to the Intergovernmental Agreement that temporarily relieved the City from that obligation.

It was MOVED by Commissioner Whipple that the Department recommendation be approved. The motion was seconded by Commissioner Lorenzen and unanimously approved.

The Commission then moved to Agenda Item L.

L. Background Discussion: Eligibility of Agricultural Practices for Pollution Control Tax Credit Certification

This agenda item requested Commission guidance on the issue of eligibility of agricultural practices for pollution control tax credits and the applicability of the sole purpose and principal purpose criteria. The Department presented information on the issue in a memorandum to the Commission.

Roberta Young of the Department staff presented background information to the Commission and responded to questions about the interpretation and application of the principal and sole purpose terms.

John Charles, representing Oregon Environmental Council urged the Commission to not treat agricultural practices and other industries any differently.

John Rossner, representing the Oregon Farm Bureau, expressed support for tax credits for agricultural facilities that benefit the public by controlling or reducing pollution.

Commissioner Lorenzen expressed the view that the principal purpose category penalizes voluntary preventative practices and is inequitable. He noted that many agricultural pollution control techniques are expensive with no benefit to crop yield. He suggested that tax credits should be used to encourage innovation and methods to reduce pollution. He suggested perhaps that they could be brought in under the sole purpose criteria.

Director Hansen noted that sole purpose has been used for solid waste recycling facilities. Commissioner Lorenzen noted that perhaps groundwater management areas could be considered under principal purpose, but others under sole purpose.

Commissioner Wessinger indicated that he would prefer to see the tax credit program eliminated if that were possible. Director Hansen explained that the Governor had proposed to eliminate tax credits during the last legislative session, but the legislature saw fit to continue the availability of tax credits. The Governor has therefore indicated that the Commission should exercize its discretion to use the program as it sees fit to aid in achieving the mission of the agency.

Commissioner Lorenzen again stated that he thought tax credits should be given at the voluntary stage and not wait until mandatory requirements kick in. There was discussion about the role that the Soil Conservation Service could play in determining the extent of pollution control purpose of agricultural practices.

The Department agreed to consider the discussion, seek input from others, and return at a later Commission meeting for further discussion on the application of sole and principal purpose to specific agricultural situations and measures.

K. Background Discussion: Risk Analysis in Environmental Programs **(initial phase of a multi-stage discussion)**

Brendon Doyle, representing the Environmental Cleanup Division, made a presentation to the Commission on Risk Analysis in Environmental Programs. The presentation covered Risk Assessment, Risk Management, Risk Communication, Public Perception of Risks, Acceptable Risk, Comparative Risk Analysis and Risk Based Strategic Planning. The purpose of the presentation was to provide background information to the Commission. The Commission thanked Mr. Doyle for the presentation.

M. Commission Member Reports (Oral Reports)

Commissioner Whipple reported on the Governor's Watershed Enhancement Board. She noted that it was a good opportunity for the Natural Resource Agencies to get together and be involved in a joint "educational" effort.

N. Director's Report (Oral Report)

Director Hansen reported on the following items:

- Governor's Task Force Review -- DEQ will be reviewed in a quasi-Ways and Means setting before a Committee looking at the structure of state government. The

Department will present information on DEQ programs and budget during a two day session scheduled October 24-25.

- SOLV Partnership -- DEQ and other state agencies (OSHA, ODF&W) have joined with SOLV (Stop Oregon Litter and Vandalism) to provide training to oil spill volunteers. The program is the first we know of that trains volunteers before the oil hits the beach. The volunteers are taking in a 2 1/2 hour class now, and will be required to take an additional 1 1/2 hour of training on-site. Classes are scheduled in Portland, Salem, Eugene, Astoria, Newport and North Bend. 200 people are expected to attend.

- E-Board -- The Department appeared before the Emergency Board in the beginning of September on several issues including an update on the Willamette study, and securing the needed budget approval to operate the on-site sewage program in Josephine County following their decision to return the program to the state.

- Governor's Award -- Awards were presented this week at the Hazardous Materials Conference and Trade Show to recognize companies that have taken positive steps to reduce the use of toxic materials. The awards went to Wacker Siltronics for elimination of TCE and to Consolidated Freightways for replacing solvents, reducing hazardous waste by 33,000 pounds a year. An award was also given to Portland General Electric for their extraordinary efforts in cleaning up the OMSI site.

- Reidel Order -- The Department and Reidel reached agreement on an order that sets out a schedule with stipulated penalties for solving the odor problem at its solid waste compost facility. The order has escalating penalties starting at $300 per day in December, increasing to $10,000 per day on June 1. If the company chooses to address the problem by constructing a facility, the penalties will be set aside during construction.

Director Hansen then presented a plaque to Chair Hutchison and thanked him for his dedication and service to the State of Oregon as Member and Chair of the Environmental Quality Commission. Commissioner Wessinger thanked Chair Hutchison on behalf of the Commission for his extraordinary efforts and leadership. Harold Sawyer presented Chair Hutchison with a photograph as a reminder of his efforts to protect the states waters.

Chair Hutchison thanked the Commission and staff for their dedication and efforts during his tenure as Chair. He indicated he would miss the meetings and the association with members and staff.

The meeting was then adjourned.

Approved _____
Approved with corrections ____
Corrections made ____

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ENVIRONMENTAL QUALITY COMMISSION

Minutes of the Special Phone Conference Meeting
August 22, 1991

The Environmental Quality Commission Special Telephone Conference Meeting was convened at about 9:00 a.m. on Tuesday, August 22, 1991. Participating in the conference call were Chair Bill Hutchison, Vice Chair Emery Castle, Commissioner Bill Wessinger, Director Fred Hansen, and various Department staff members. The public could participate by speaker phone in Conference Room 3b of the Department of Environmental Quality Offices at 811 S. W. 6th Avenue in Portland, Oregon.

The purpose of the meeting was to consider Department recommendations to authorize public hearings on seven items in response to requirements of the 1990 Federal Clean Air Act Amendments. The items cover four control strategies and eight rules relating to PM_{10} (solid or liquid particles of less than 10 microns in size).

Control strategies for the Eugene/Springfield, Grants Pass, Medford, and Klamath Falls areas were previously adopted in the November 1990-January 1991 period. The 1990 Federal Clean Air Act Amendments impose new requirements which necessitate, in some cases, revisions to the existing control strategies, adoption of new control strategies, and adoption of new or revised PM_{10} related rules. Specifically, the 1990 amendments:

- Establish November 15, 1991 as the deadline to submit PM_{10} control strategy revisions to the state implementation plan.
- Establish December 31, 1994 as the deadline for compliance with the PM_{10} standard.
- Require adoption of specific Reasonably Available Control Measures (RACMs) for woodheating, open burning and industry.
- Require adoption of contingency plans that will be automatically implemented if the December 31, 1994 attainment date of the Act is not met.
- Require adoption of specific Best Available Control Measures for industry within 18 months of the date an area fails to meet the attainment deadline.

- Require that all PM_{10} related rules and enforceable provision of the control strategy be approved by EPA as a condition of EPA being able to fully approve the PM_{10} control strategies.

The Department proposed that the Commission authorize public hearings on the following agenda items with the intent that hearings be held and the matters returned for Commission adoption at a meeting to be held on November 8, 1991:

A. Hearing Authorization: Revised PM_{10} Control Strategy for the Medford-Ashland Air Quality Maintenance Area (AQMA)

This item presented a proposed addendum to the Strategy for the Medford-Ashland area to include specific Reasonably Available Control Measures and a contingency plan. The Department is proposing to utilize its new backup woodstove curtailment authority for Central Point to meet the enforceability requirement of the act for RACMs for woodstoves. Other RACMs include a ban on sale and installation of used non-certified woodstoves and a more restrictive ventilation index for open burning. Attachment A of the staff report contains the proposed addendum to the strategy.

Proposed contingency plans that would automatically go into effect if the area fails to attaint the PM_{10} standard by the deadline of December 31, 1994 included removal and destruction of non-certified woodstoves upon home sale, a November-February ban on open burning, and additional industrial control systems that meet the Act's requirement for Reasonable and Best Available Control Technology.

B. Hearing Authorization: Revised PM_{10} Control Strategy for the Klamath Falls Non-Attainment Area

This item presented a revised control strategy for Klamath Falls as presented in Attachment A of the staff report. The revised strategy includes specific Reasonably Available Control Measures and a contingency plan. The RACM provisions of the recently adopted Klamath County Clean Air Ordinance have been incorporated into the control strategy and include a mandatory curtailment program, a year around 20% visible emissions requirement for woodstoves and a ban on installation of used non-certified woodstoves.

Proposed contingency plans include a) removal and destruction on non-certified woodstoves upon home sale, b) a mandatory fuelwood seasoning requirement, c) expansion of Klamath County's air quality control area, d) a prohibition on installation of more than one woodstove in a new dwelling, e) additional dust control measures, and f) mandatory forestry and agriculture smoke management programs within Klamath County. Industry within the non-attainment area would also be required in the contingency plan to install new control measures to meet

the Act's requirements for Reasonable and Best Available Control Technology (RACT/BACT). Industry located near the non-attainment area would be required to install RACT/BACT controls if their emissions are found to have a significant impact on the non-attainment area.

C. Hearing Authorization: Revised PM_{10} Control Strategy for Grants Pass

This item presented a proposed addendum to the control strategy for PM_{10} for the Grants Pass area. The proposed addendum was included as Attachment A of the staff report. The addendum includes specific Reasonably Available Control Measures and a contingency plan. The RACM elements to be added include a ban on the sale or installation of used, non-certified woodstoves, and a more restrictive ventilation index for open burning.

Proposed contingency plan measures include a) state backup mandatory curtailment authority for residential woodburning if local government fails to adopt or implement this program, b) destruction of non-certified woodstoves upon home sale, c) new emission controls for certain sized industrial wood dust handling systems, and d) a ban on open burning within the Grants Pass Urban Growth Boundary during the heating season. The industrial contingency element would meet the Acts requirements for RACT/BACT.

D. Hearing Authorization: New PM_{10} Control Strategy for the La Grande Air Quality Non-Attainment Area

This item presented a proposed control strategy for PM_{10} for the La Grande Non-Attainment Area (Attachment A of the staff report). The proposed strategy will include Reasonably Available Control Measures and a contingency plan. RACM provisions of the recently adopted La Grande Air Quality Improvement Ordinance have been incorporated into the control strategy, and include a voluntary woodburning curtailment program, a public education program, and fugitive dust control measures. Additional reductions are expected from the phase in of certified woodstoves, a ban on the installation of used, non-certified stoves, and seasonal restrictions on open burning.

Proposed contingency plan measures include implementation of a mandatory woodburning curtailment to be established under city ordinance (with state backup authority), state authority for destruction of non-certified woodstoves upon sale of a home, and a requirement to install new industrial controls which will meet the requirements for RACT/BACT.

E. Hearing Authorization: New Industrial PM_{10} Emission Standard Rules and other Related House-Keeping Measures

This item requested authorization to hold a rulemaking hearing on a package of new rules and rule revisions needed in support of revised and new PM_{10} control strategies. The proposed rules were presented in Attachment A of the staff report. Included are new industrial contingency particulate emission standards that would be applicable to industrial sources located in PM_{10} non-attainment areas that fail to reach attainment by December 31, 1994, as well as industrial sources outside the non-attainment area which could significantly affect the area. Also included are housekeeping amendments to clarify statewide industrial rules applicable to veneer dryers and a number of additional PM_{10} sources subject to special control rules in the Medford-Ashland and Grants Pass areas.

F. Hearing Authorization: Rule Amendments for the Rogue Basin Open Burning Special Control Area

This item requested authorization to hold a rulemaking hearing on rule changes that would require more restrictive ventilation criteria for the Rogue Basin Open Burning Control Area consistent with local ordinances. The proposed rules were presented in Attachment A of the staff report. The proposed rule changes would also impose a ban on open burning in the entire Open Burning Control Area during November, December, January, and February as part of the contingency plans if the Medford-Ashland or Grants Pass area fails to meet PM_{10} standard by December 31, 1994.

G. Hearing Authorization: Residential Wood Heating Rule Amendments

This item requested authorization to hold a rulemaking hearing on new residential woodheating rules to meet control measure and contingency measure requirements of the Clean Air Act. These rules, presented in Attachment A of the staff report, were authorized by HB 2175 passed by the 1991 legislature and cover the following areas:

- Prohibition on the sale of used non-certified woodstoves.
- State backup enforcement of residential woodheating curtailment in PM_{10} non-attainment areas.
- Requirement for the removal and destruction of used non-certified woodstoves upon sale of a home in a PM_{10} nonattainment area that does not attain compliance with the standard by December 31, 1994.

The proposed rules would be codified into a new Division 34 of OAR Chapter 340, and existing woodstove certification rules would be moved from Division 21 to Division 34.

Department staff noted in discussions that Lane Regional Air Pollution Control Authority will be conducting hearings on a revised Eugene/Springfield PM_{10} control strategy. This will be brought to the Commission for adoption in November along with the final proposals on the above proposed hearing authorizations. The Department also noted that the Oakridge area is a recently designated non-attainment area for PM_{10}. Oakridge has until December 1992 for adoption of a control strategy due to its recent designation.

It was MOVED by Commissioner Castle that the Department recommendation be approved. The motion was seconded by Commissioner Wessinger and approved by the three Commission members present.

The telephone conference was adjourned at about 9:50 a.m.

Approved _____
Approved with corrections ____
Corrections made ____

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ENVIRONMENTAL QUALITY COMMISSION

Minutes of the Two Hundred and Sixteenth Meeting
October 10, 1991

Regular Meeting

The Environmental Quality Commission regular meeting was convened at about 10:00 a.m. on Thursday, October 10, 1991, in Conference Room 3a of the Department of Environmental Quality Offices at 811 S. W. 6th Avenue in Portland, Oregon. Commission members present were: Vice Chair Emery Castle, and Commissioners Bill Wessinger, Henry Lorenzen, Carol Whipple, and Anne Squier. Also present were Larry Knudsen of the Attorney General's Office, Director Fred Hansen of the Department of Environmental Quality and Department staff.

NOTE: *Staff reports presented at this meeting, which contain the Department's recommendations, are on file in the Office of the Director, Department of Environmental Quality, 811 S.W. Sixth Avenue, Portland, Oregon 97204. Written material submitted at this meeting is made a part of this record and is on file at the above address. These written materials are incorporated into the minutes of the meeting by reference.*

Vice Chair Castle called the meeting to order.

A. Election of Chair of the Environmental Quality Commission

Vice Chair Castle requested nominations for Chair of the Commission.

It was MOVED by Commissioner Lorenzen that Mr. William Wessinger be nominated and elected as Chair of the Environmental Quality Commission. The motion was seconded by Commissioner Whipple and unanimously approved.

Vice Chair Castle expressed the appreciation of the Department and people of Oregon that Mr. Wessinger was willing to assume the responsibility as Chair.

Chair Wessinger thanked the Commission. He noted that the previous chair had a tremendous ability to carry the meeting and ask pertinent questions. He expressed his desire to change the format of the meeting from the past and have far more participation from the members of the Commission in asking questions and leading discussion.

B. Salt Caves Hydroelectric Project: Consideration of Hearings Officer's Proposed Findings and Order on the Appeal of the Director's Denial of §401 Certification

Director Hansen noted for the record that he had discussions with the Chair and other members of the Commission about Salt Caves. He stated that those discussions dealt with mechanical issues such as scheduling and had nothing to do with the substance of the issues before the Commission.

Chair Wessinger asked Larry Knudsen, Assistant Attorney General, to advise the Commission on pertinent procedural matters relating to the issue before the Commission. Mr. Knudsen noted that statute specifies that the director makes the decision on §401 certification. Commission rules provide that the Director's decision may be appealed to the Commission. The Commission appointed a hearings officer who took testimony in the matter, and proposed a decision for Commission review. Mr. Knudsen advised that the Commission must base its decision on the evidence in the record that was developed by the hearings officer. He advised that the Commission could also consider arguments made by the attorneys representing the City, the Department, and the Conservation parties.

Mr. Knudsen noted that the Commission had received a number of letters expressing opinions on the issue. He advised that it would not be proper for the Commission to base a decision upon these letters or upon any other matters that may have come to their attention. He again stated that the decision must be based upon the hearings officer's record.

Mr. Knudsen also advised that another preliminary matter that needs discussion is the motion that was filed by Richard Glick on behalf of the City of Klamath Falls to disqualify Commissioner Squier. He noted that he had provided a letter to the Commission that addressed these issues. Since the Commission had not had time to study the letter, he summarized his advise. He advised the decision on disqualification must be made by Commissioner Squier and not by the Commission as a whole. He noted that the City of Klamath Falls had asked for oral argument on the motion to disqualify. He advised that the Commission could allow oral argument, but was not legally required to allow such argument. Mr. Knudsen recommended that the Chair consult with Commissioner Squier regarding whether or in what manner to take comments from the City or the other parties. Mr. Knudsen further advised that, based on affidavits he had seen, Commissioner Squier would not be required as a matter of law to disqualify herself.

Mr. Knudsen then advised that the Commission would have to either affirm the hearings officer's proposed order or make changes to it. He noted that any changes would have to be specific. Any change to the conclusion would require that the Commission address the facts underlying the conclusion and make changes to those as appropriate. He noted that the attorneys had presented exceptions to the proposed order that include exact changes they

would propose. Those could provide some assistance in the event the Commission wanted to consider modifications of the hearings officer's proposed order.

Finally, Mr. Knudsen stated that he was there to assist the Commission on procedural questions and to provide assistance in proposing specific language.

Commissioner Lorenzen asked about the standard of review which the Commission should apply in this proceeding. Mr. Knudsen responded that the Commission would be dealing with a question of the preponderance of the evidence. Commissioner Lorenzen asked if this is essentially a de novo review where the Commission can substitute its judgement. Mr. Knudsen responded yes.

Chair Wessinger then asked for comments from Commissioner Squier.

Commissioner Squier proposed a three step process for dealing the motion to disqualify her. First, she suggested that she be allowed to make a brief statement of her position on the matter of disqualification. Second, she suggested that the parties be allowed to make brief statements (rather than arguments) to assist her in focusing on any contacts or reasons that she had not thought of that would substantiate a reason for her to disqualify herself. Third, she would welcome observations of commission members and the director to aide in her final decision whether it appears to an outside observer that she had any bias that would be disqualifying as to the facts in this proceeding and this application. She stated she would then make a rapid decision to either excuse herself or remain.

Chair Wessinger asked Commissioner Squier to proceed.

Commissioner Squier noted that she had not discussed the proceeding with any interested party, with any members of the staff, or any member of the Commission to this time. She stated she had discussions with Larry Knudsen confined to her concerns about understanding clearly the standards for recusal and for help in organizing her approach to the facts about prior activity alleged in Mr. Glick's affidavits. Commissioner Squier noted for the record that she had a brief telephone conversation with the Director on another matter, and in the process, he advised that she should feel free to contact counsel on the matter. She stated that she advised him that she already had.

Commissioner Squier stated that at this time, it was not her intention to recuse herself from the deliberation. She did not consider that she had any biases or prejudices that would prevent her making an objective determination with respect to the facts that are at issue in the water quality certification proceeding. She stated that she took seriously her responsibility to make decisions as a member of the Commission. She noted Larry Kundsen's advise that Commission members have a duty to make a decision unless there is a legal reason to recuse yourself. She noted that the fundamental issue was whether contacts

and activities prior to the time she became a member of the EQC would constitute ex parte exposure to the facts that relate to this case such that it would appear that she could not make a fair assessment of those facts on the record now before the EQC.

Commissioner Squier went on to cite specific reasons why she did not believe she had such exposure. She noted that she had previously advised a different agency or agencies with respect to questions of law that pertained to a different application than the one before the EQC. The current proceeding and the prior proceedings in which she had advised other agencies had to do with different statutory schemes. She noted that there was a two level separation. First, her prior actions were not factual investigations, and second, the questions of law she was dealing with did not bear in any direct fashion on any of the issues before the EQC.

Commissioner Squier discussed citations in Mr. Glick's affidavit at some length. She specifically noted that her records indicated that her last day of service with the Department of Justice was July 7, 1989. This was prior to the date of filing of a court case on July 30, 1989, and prior to release of the draft environmental impact statement on the Salt Caves project in July 1989. She noted that she did not see how she could have much exposure to any kind of factual discussion with respect to the water quality certification proposal currently before the Commission because the ~~[issue]~~ proposal had not ripened to the point that anyone was looking at factual issues.

Commissioner Squier summarized that any exposure she had was in a different proceeding, before a different agency, and was confined to forming an opinion, which was her job, on legal questions about application of the statutory scheme. She did not believe she had any exposure prior to this case to the facts that are at issue before the EQC. She closed by stating that she believed she could decide the case in a neutral and fair fashion looking at the factual record. She then asked for brief comments from other counsel to point out anything she had forgotten or misperceived.

Chair Wessinger called upon Richard Glick, attorney representing the City of Klamath Falls.

Mr. Glick noted for the record that they did not question the integrity of Commissioner Squier, and did not have any direct information that she had personal bias against the project or the City of Klamath Falls. Rather, they believe that prior involvement in a case that is substantive and far reaching in a different capacity than as a member of the EQC is sufficient to disqualify participation. Specifically, objectivity is too much to ask of a person who has acted as an advocate for a state agency that has rendered substantive legal advise that was adverse to the project and has been involved in discussions on how the state will respond before the Federal Energy Regulatory Commission (FERC). He noted that as counsel to the Water Resources Department, Ms. Squier participated in decisions that were adverse to the proposed Salt Caves project. Mr. Glick also noted that state comments to FERC were filed through the Strategic Water Management Group and that Ms. Squier participated at that

group. These comments raised the very issues before the Commission, including temperature and harm to fish. Finally, Mr. Glick noted that even though Ms. Squier may have resigned before the law suit was filed, the state's position was premised upon her analysis.

Commissioner Squier asked for clarification on dates. She noted that she resigned from State service in early July, 1989. The Draft Environmental Impact Statement (EIS) on the Salt Caves Project (prepared by FERC) was released in July, 1989. State comments on the Draft EIS, which did include comments on water quality issues, were filed in October 1989. She noted that if these dates were correct, she didn't understand how she could have been involved in the factual determinations. Mr. Glick responded that agencies were reviewing materials and discussing them with the Strategic Water Management Group prior to the time the Draft EIS was released. He also expressed the belief that information was discussed among the Attorney General's Natural Resources Section. In summary, Mr. Glick stated the belief that the state's analysis of facts and position had developed over a period of 10 years, and the fact that the actual document stating the position was filed after Ms. Squier left state service did not have a bearing on the issue.

Kurt Burkholder, Assistant Attorney General representing DEQ, stated that DEQ did not have a position on the issue. Karl Anuta, representing the Conservation Parties, stated that they knew of no factual basis for disqualification of Commissioner Squier.

Commissioner Squier then announced her decision to participate in this decision as a member of the EQC appointed to make decision in any situation in which there is not a legal impediment to doing so. She stated that she felt she could make a fair decision with respect to the water quality questions posed on the record in the proceeding. She did not believe her prior legal work would be any impediment to that. Her prior legal work did not involve factual questions dealing with water quality, did not involve legal questions dealing directly with water quality matters, and did not involve legal issues dealing with the certification process that is before the EQC at this time. She stated that to her knowledge, she had no exposure to facts or the kinds of factual inquiries that would bear on the water quality issues before the Commission -- the issue of applying the EQC standards to the water quality information in the record. Therefore, Commissioner Squier saw no basis for recusing herself from a very challenging and difficult decision.

Chair Wessinger declared the matter closed and moved on to the next issue -- the City's request to extend the time allowed for oral arguments. Chair Wessinger noted that he felt the Commission members had carefully reviewed the briefs and materials submitted. He therefore ruled that the Commission would stick with the five-minute period for each party to summarize their position. He stated that DEQ would make the first presentation, followed by questions from the Commission. This would be followed in turn by the Conservation Parties and finally by the City.

Kurt Burkholder summarized the position of DEQ with regard to the hearings officer's proposed findings and order. He urged the Commission to affirm or adopt the hearings officer's proposed order regarding the temperature standard violation, and modify the proposed order regarding the anti-degradation standard as set forth in DEQ's proposed order modifications. He expressed the view that the overwhelming weight of evidence in the record shows that trout growth and size will be reduced as a result of water quality changes brought about by the Salt Caves project. He quoted statements from the record by the City's own consultants that support this conclusion. He also stated that the record includes the judgment of the Department of Fish and Wildlife that reduced trout growth and size would be adverse to the beneficial uses of trout fishing and recreation. He noted that the City was now disagreeing with its own earlier conclusions on fish growth. He suggested that the Commission should resolve the conflicting positions reflected in the record on this issue by giving deference to the Fish and Wildlife Department's professional judgment.

Mr. Burkholder noted the City asserts that Fish and Wildlife has flipflopped on the trout effects, therefore their professional judgments should be ignored. He stated that Fish and Wildlife has not flipflopped in its concerns with the present project. He also noted that its knowledge regarding the Klamath River trout fishery has evolved since the first Salt Caves project was proposed, and its views on the impacts of the current project reflect the combination of the difference in the project proposals, and the new information on the fishery.

Commissioner Castle asked about the causes for smaller trout growth relative to the water quality parameters that cause the smaller growth. Mr. Burkholder summarized the water quality effects of the project as cooler summer water temperatures, warmer winter water temperatures, reduced nutrients, and a changed mix in the algal growth that might have impact on the trout food supply. He noted that the experts were not able to pinpoint which of the water quality changes would result in reduced growth, but simply attributed it to the cumulative effects of the changes.

Commissioner Lorenzen asked for a quantification of the differences in trout growth. Mr. Burkholder responded that one figure was an 18 percent difference in size at the age of three. Commissioner Lorenzen asked if the difference was the result of actual observation or prediction with models. Mr. Burkholder responded that it was both observation and prediction, but not with models. He noted that observations and empirical data consist of what is observed today in the J.C. Boyle Reach when compared to trout observed in the Salt Caves reach. Commissioner Lorenzen asked how many tests were made and how many samples were taken in order to come to the conclusion. Mr. Burkholder noted electro-fishing undertaken by the City, creel survey data in 1988, and an age-length study in 1989. Commissioner Lorenzen asked for additional information on the 1988 study and noted that the Commission was being asked to review the sufficiency of the evidence. He noted that all the Commission has heard is legal argument. He noted further that the hearings officer

had heard the evidence and reached a different conclusion than the Department proposes. He suggested that a detailed analysis of the evidence was needed. Mr. Burkholder stated that he did not recall all of the details in the record. He did point out that the hearings officer did not find that there would not be reduced trout growth.

Chair Wessinger noted that the hearings officer statement referred to overall impact and asked if the hearings officer appeared to be balancing a potential reduction of growth against other potentially beneficial effects to reach his conclusion. Mr. Burkholder responded that the hearings officer did not set out his rationale in sufficient detail to reveal his thought process.

Commissioner Lorenzen asked if beneficial use impact was considered in determining compliance with the temperature standard. Mr. Burkholder responded that it was not. In response to further questions, Mr. Burkholder noted that DEQ's determination of the standard violation was based on maximum daily temperatures and continuous operation of the Boyle powerhouse. Commissioner Lorenzen expressed concern that the wording of the standard does not anticipate the application to a hydroelectric project. Mr. Burkholder noted that the mixing zone language in the rule does not fit the situation, but that the parties had arrived at mutually agreeable methods for determining temperature increases.

Commissioner Whipple asked for clarification of the nutrient issue and the term nutrient rich. Mr. Burkholder responded that the Department has initiated the TMDL process but has not proposed nutrient limits for the Klamath River.

Commissioner Squier asked for clarification of Mr. Burkholder's view of the hearings officer's conclusion that on balance, the record doesn't show an adverse effect on the fishery. Mr. Burkholder responded that the weight of credible evidence does not support this project having a net positive impact on trout that could offset the reduction in trout growth.

Karl Anuta, representing the Conservation Parties (Sierra Club, Oregon Natural Resources Council, Oregon Rivers Council, Oregon Trout, Save Our Klamath River, and Northwest Environmental Defense Center) noted that many of the members in the organizations he represents were involved in securing the designation of the Klamath River as state Scenic Waterway. He concurred with the comments of Mr. Burkholder.

Mr. Anuta noted that the crux of the issue before the Commission was why the hearings officer made a finding that on balance there would not be an adverse impact while DEQ and the conservation parties agree that the weight of evidence in the record shows that there will be an adverse impact. He suggested that the hearings officer's conclusion was mistaken because he concluded that if the evidence was equal, the agency must lose. Mr. Anuta suggested that the hearings officer placed the burden of proof upon the wrong party. He stated that the Commission and hearings officer must place the burden of proof on the City

to show that there will not be adverse impact. He suggested that the evidence in the record does not support the City's claim of no adverse impact. The parties essentially agree that water quality will change. The Department of Fish and Wildlife, based on their experience and observation, state that the changes will be adverse. The City's consultants concluded there will be some hypothetical benefits. In essence, the experts have looked at the same information and reached different conclusions. Mr. Anuta noted that the hearings officer did not enter any finding on whether there would be a reduction in trout growth. The hearings officer did not conclude that there would be no reduction in trout growth. He only said that on balance there would be no adverse effect. The hearings officer has not identified how he "balanced" the evidence. Mr. Anuta suggested that the Commission should err on the side of protecting the environment and the scenic waterway and conclude that the City has not met its burden to prove by a preponderance of the evidence that there will be no harm to the fishery.

With respect to the temperature standard, Mr. Anuta noted that the issue is not whether there is an adverse impact, it is merely whether the standard is violated. He noted that the rule was adopted through the process with notice and public comment. He stated that the Commission is bound by the standard in this proceeding.

Commissioner Lorenzen again expressed his concern with the temperature standard because the language does not fit the situation. He suggested that the Commission was having a hard time defining exactly where the activity and measuring occurs and asked how the Commission should apply the language of the rule in this case. Mr. Anuta responded that the Commission is bound by the numeric criteria and must apply it to the activity. He stated that common sense must be used in applying the criteria to the activity. Commissioner Lorenzen stated he was still not satisfied on this issue but would stop belaboring it.

Chair Wessinger thanked the conservation organizations for participating as a single party.

Peter Glaser, with the Washington, D.C. law firm of Doherty, Rumble & Butler, represented the City of Klamath Falls. Mr. Glaser stated that they believe the hearings officer and DEQ were both wrong in their analysis on the temperature standard. They believe the hearings officer interpreted the standard too narrowly. He suggested that it was understandable that the hearings officer would chose a narrow interpretation. However, he suggested that the Commission should look at the rule carefully and make a decision on how it should be interpreted. Mr. Glaser noted that the hearings officer found that the purpose of the rule (to protect fish) would be met by the project, but the rule would not be met. This presents the Commission with a difficult paradox. Mr. Glaser noted that during the summer, when temperatures are critical to fish, the project would reduce temperatures, thus taking them in the right direction to protect fish. However, the recommendation is to deny the project on a ground that is technically without substance. Mr. Glaser suggested that the question before the Commission is: Is it the policy of the commission to construe its standards without

regard to substance and the purpose of those standards? He suggested that the standard is broad enough for the Commission to find that the project is in compliance. Mr. Glaser stated that there is no control point upstream of a mixing zone and a point downstream of the discharge, and thus there can be no slavish interpretation of the standard. Mr. Glaser stated that they are not saying that the temperature standard does not apply to hydro projects. The issue for the Commission is how to apply the standard.

Mr. Glaser then commented on antidegradation. Mr. Glaser stated that they violently disagree with the notion that the preponderance of the evidence, or even some of the evidence in the record supports the view that the project would reduce fish growth. He concluded his presentation by suggesting he would be glad to respond to questions on this matter.

Commissioner Castle asked for clarification of the issue on fish growth. Mr. Glaser stated that the evidence the City has relied on is as follows: The project will result in three primary water quality changes. It will reduce summer temperature; it will reduce nutrients; and it will eliminate the fluctuating temperature conditions that exist today. He asserted that these changes are good for fish. He stated there were four pieces of evidence on fish growth in the record and none of them say what opposing counsel claim. The first was electro fishing results done by the consultants in 1988. The results were that there were no juvenile fish in the Salt Caves reach whereas there were both juvenile and adult fish in the upstream J.C. Boyle reach. He stated that Fish and Wildlife's conclusion of smaller fish in the Boyle reach was based on averages, and that the average size in the Boyle reach would be smaller because you're averaging juveniles and adults versus adults only in the downstream Salt Caves reach. The second piece of evidence was the creel census results in the two reaches, and it has the same averaging problem. The third piece of evidence was informal sampling taken by the Chief Biologist of the Fish and Wildlife Department over 15 years. On cross-examination, he admitted that his sampling was so small that no scientific conclusions could be reached. The fourth piece of evidence was age length data that Beak had collected in the two reaches. The results compared the length of same age fish and found no difference in length at one year old, no significant difference at two year old, no difference at four year old, but they did find a difference of about an inch in three year old fish. That was the extent of the evidence. The consultants went on to do simulation modeling on growth. The modeling showed that at the upper end of the Salt Caves reach there would be some small reductions in growth in some months, but in other months, there would be increases, and that as you move downstream in the Salt Caves reach, growth would either be the same or enhanced. Mr. Glaser noted that the consultants had concluded there would be positive effects of the project in reduced summer temperatures, reduced nutrients, and elimination of fluctuating flows and temperatures. He concluded by saying that he believed the hearings officer simply disbelieved the assertions that there would be a reduction in fish growth.

Commissioner Squier asked if there was agreement that a "mechanical" application of the temperature standard would result in violation. Mr. Glaser stated that he did not believe there is a mechanical application of the standard but acknowledged that in certain months, post-project temperatures would exceed pre-project temperatures by a couple of degrees fahrenheit. Commissioner Squier asked if Mr. Glaser's argument was that because of the language of the standard, the actual application of the temperature differential measurement should be tempered with a look at the affect of the application on the beneficial uses of the stream segment. Mr. Glaser responded yes. He continued that DEQ has discretion to decide how and when to apply the standard as evidenced by the decision to use daily maximum temperatures when that is not specified in the rule. Commissioner Squier asked if Mr. Glaser's argument was specific to this project or would also apply to a point source discharge that increased the temperature. Mr. Glaser responded yes, that he believes the Commission has discretion as to when and how to apply the standard.

Commissioner Whipple asked for clarification of why fish were smaller in the Boyle reach. Mr. Glaser responded that fish were smaller only in one age group and there have been a number of possible explanations including that temperature conditions were colder on a more consistent basis, perhaps too cold for real good trout growth rates. Other explanations could include geometry of the stream, or fluctuating flows that cause the smaller fish to remain in the Boyle reach rather than moving down into the Salt Caves reach. He noted that the Salt Caves reach will not be similar to the Boyle reach in all respects.

Chair Wessinger then stated that the presentations were concluded, and the Commission would begin its deliberations following a break.

Chair Wessinger began the deliberations by suggesting that the Commission stay with the two issues addressed by the hearings officer -- whether fish are harmed, and whether the numerical temperature standard is violated.

Commissioner Castle asked if it would be appropriate for the DEQ counsel to respond to the evidence cited by Mr. Glaser on fish growth. Mr. Burkholder noted that the Department had acknowledged from the beginning that the data were not perfect because the data were not taken with this contested case in mind. Commissioner Castle asked if the Department had specific rebuttal evidence to present? Mr. Burkholder responded that the Department was relying on the same data as showing a difference in growth. In addition the Department was relying on personal observations of the Department of Fish and Wildlife and private user witnesses as cited in the record. He further stated there was no data to the contrary.

Commissioner Whipple asked for an explanation of the difference in trout size. Mr. Burkholder responded that there are various theories, but there is no evidence that pinpoints it to one cause.

Commissioner Lorenzen suggested that the order proposed by the hearings officer was divisible into two parts and the discussion should be broken accordingly.

Chair Wessinger suggested that the Commission first deal with the issue of the affect on fish.

Commissioner Squier asked for clarification from legal counsel on the burden of proof issue raised by the parties. Mr. Knudsen responded that the hearings officer addressed the issue by concluding that the party that puts forward a point has the responsibility for coming forward with the evidence in to establish that point, and a party opposing has the burden of coming forward with significant evidence to oppose the point. When that's done, the party with the preponderance of evidence prevails. The hearings officer found that sufficient information was provided on both sides of the questions, so that it did not become an issue of who has the burden of initially coming forward to establish the facts. Commissioner Squier asked if counsel was comfortable with the phraseology in the hearings officer's proposed order. Mr. Knudsen responded that he was.

Commissioner Whipple noted that she agreed that it was necessary to separate the consideration into the two issues, but they are related from a practical standpoint, and she was not yet convinced that the fish growth issue had been settled. She stated that she was not convinced by the Department's arguments on fish growth and was concerned about that.

Commissioner Lorenzen stated his opinion that the Commission should give some weight to the results and conclusion of the hearings officer who had the opportunity to review all of the evidence. He stated that he was not persuaded that there would be a harmful impact upon the fishery and was ready to affirm the hearings officer's findings and proposed order on this point. He stated that he was not convinced that a one inch difference is three year old fish is significant.

Commissioner Castle stated that he had a hard time treating the issues in isolation. He suggested that the issue before the Commission is different from the issue that originally came before the Department. He stated that it is the Commission's standard, and the Commission has to exercise some judgment as to whether the project in total is in substantial compliance. He stated that he did not feel that exceedance of one standard at one time of the year was sufficient to reach a conclusion that the project is not in conformance with Commission rules. Commissioner Castle concluded that there was sufficient evidence to support the hearings officers conclusion.

Commissioner Lorenzen stated that he agreed with Dr. Castle. He further stated that he believed that the temperature standard, as expressed within the rule, simply does not apply in this situation. He noted that the Commission is bound to follow the rules unless they engage in the proper process to modify them. However, the temperature rule is incapable of being applied in this particular situation, and should not be followed. He suggested he

would modify the hearings officers order to find that the temperature standard does not apply for that reason, and that certification should be granted. He also suggested that it would be necessary to have the matter go back to the Department for an analysis of what conditions should be placed upon granting of the certification.

Commissioner Squier stated that she reaches a different conclusion than Commissioner Lorenzen. She stated that application of every standard requires some judgment calls including for instance, how to measure, where to measure, what to compare, etc., and that activities may be subject to more judgment calls than point source discharges. She noted that the Commission had decided that the appropriate way to deal with water quality was to set numeric standards that could be applied without the need for a balancing process as is being argued by the City. She stated that the choice of the Commission is to either apply the rule or to change the rule. She stated that to take a numeric standard that does not contain language requiring balancing (except with respect to temporary waivers) and interpret it as if balancing is appropriate would have broader implications for all standards and the relationship to federal requirements.

Director Hansen was then recognized by the Chair. Director Hansen advised the Commission of the Department's conclusions during its deliberations on the application relative to the issues being discussed. The Department concluded that the numeric temperature standard was significant, significant at all times of the year, and could not be ignored in this case. The Department also believes the Commission understood that temperature made a difference and could affect fish when the standard was adopted. The Department also concluded that if it were appropriate to look at the temperature standard, it should be done through the rule change process where all interested parties would have proper opportunity for input. The limited amount of information available in this case was not sufficient for that purpose. Director Hansen also noted that the Department considered how the standard was applied in light of the mixing zone language. The Department looked at it as if it were a fish coming up the river: if the project would cause the fish to experience an increase in temperature of more than half a degree, the standard would not be met. Finally, with respect to effect on fish, the Department deferred to the judgment of the agency of the state that is expert and responsible for dealing with fishery resources -- the Department of Fish and Wildlife. Their conclusion of adverse effect led DEQ to conclude that the antidegradation standard would be violated.

Commissioner Lorenzen clarified his earlier statement by noting that his interpretation would not read out the word activities in total. He noted that other standards set forth in the rules would apply to activities. He noted that when a conclusion does not make sense, as in this case, where the hearings officer concluded the project would not harm the fishery, the credibility of the Commission is affected by a denial that is based on a rule without a tie to harmful impact on the environment.

Chair Wessinger stated his view that the hearings officer had heard a great deal of information and came to the conclusions that the fishery is not going to be harmed, and that the Commission must stay with the temperature standard. He indicated his vote would be to uphold the hearings officer's proposed findings and order as written.

Commissioner Lorenzen stated that the hearings officer was particularly suited for reviewing the evidence and coming to a conclusion based on the evidence. However, the Commission is more suited to interpreting its own rules and determining whether they apply in this case. He suggested that deference to the hearings officer in this case may be displaced, and that court will give great deference to the Commission in how it interprets its own rules.

Commissioner Whipple stated that she did not have a problem with the hearings officer's conclusions on antidegradation. She noted she still was uncertain about the reasons why growth might be affected, but she didn't have a problem with the conclusion that the evidence as a whole did not lead to a conclusion that the project would have an adverse affect on the fishery. She expressed some discomfort with the notion of looking at the project as a whole from the perspective of environmental impact. She noted that there are other issues related to the project, but she was not convinced that the fishery would be negatively impacted by water quality. She noted that she had a little more trouble with the numeric standard because such standards suggest certainty. Numeric standards make it easy to make a decision. However, she was somewhat uncomfortable with a numeric standard that when violated, doesn't clearly show a negative impact. She also stated that she was uncomfortable with Commissioner Lorenzen's view that the rule doesn't apply in this case and would need confirmation that the Commission has discretionary authority around this numeric standard.

Commissioner Squier stated her view that the numeric standard is not modifiable by the Commission on an individual decision basis, rather it must be modified by rulemaking. She noted that the discretionary authority that exists with respect to the rule is with how measurements are made, and there is no quarrel with whether the temperature effect has been correctly measured. Therefore, she stated that the Commission must find a violation of the temperature standard. With respect to the antidegradation standard, she noted her view that the applicant seeking certification must demonstrate to the Department, and the Commission upon review, that their proposal meets standards. She noted that based on the discussion and the information before her, she would be unable to make a finding that there would be no adverse effect.

Larry Knudsen advised that if the Commission decides that the hearings officer's interpretation of the standard is not correct, then an alternative interpretation will have to arise from the Commission. He suggested at least three potential options based on the discussion that could be further developed: (1) the temperature standard does not apply at all; (2) the temperature standard has some sort of implicit narrative criteria of no adverse

effect built in; or (3) there is some discretion in measuring. On the issue of burden, he suggested that there is no law to direct a precise answer. The Arnold Irrigation case suggests that there is some burden on the agency, but it is not clear whether that burden is to prove that fish will not be harmed or merely to establish that it has made a reasoned decision. In another case (the Teledyne Wah Chang case), the court said the permit applicant had the responsibility of making this initial presentation that its activities would not violate the standards. He noted it is possible to pursue either interpretation.

Director Hansen was again recognized by the Chair. Director Hansen noted that if the Commission were going to modify the winter temperature standard, it would want substantially more information than is available in the record in this case.

Commissioner Lorenzen stated that if the rule is going to force a conclusion that he feels is absurd, and in this case he feels it would, then the rule should state with precision that such a result is a possible interpretation. He also stated that he feels the rule is broken and should be fixed regardless of the outcome of this proceeding.

Commissioner Lorenzen MOVED that the essence of the hearings officer's proposed order with respect to the issue of adverse impact on the fishery be adopted, namely that evidence indicates that there is no harmful impact on beneficial uses as a result of the project, and that the Commission find that the project will not violate OAR 340-41-965(2)(b)(A), namely the winter temperature standard, for the reason that the rule is not intended to apply to this particular situation. There was no second for the motion and the Chair declared it dead.

Commissioner Whipple asked Commissioner Squier if it was ever possible to operate in a discretionary area around a numeric standard. Commissioner Squier responded yes, suggesting that a rule could be written to instruct that the first step is to determine if a violation exists, and the second step is to determine whether it has an adverse effect. She noted that the existing temperature standard is written with a waiver provision for short term activities. She continued that once one has measured a violation, the violation exists without regard to whether the result is good or bad. She noted that fixed speed limits or fixed rules on discharging firearms in certain areas are not to be applied only when someone gets shot.

Commissioner Castle noted that he did not second Commissioner Lorenzen's motion even though he had some sympathy with it. He stated that he believes the temperature rule does apply in this case. He noted that standards are adopted to protect beneficial use, and in this case the conclusion is that no beneficial use is being damaged. Therefore the question is what to do about the rule. He noted that counsel had identified three options. He stated that he had trouble with the options of saying the rule doesn't apply or saying that there is discretion in the measurement. He preferred the option that there is an implicit argument that the rule doesn't apply because there is no adverse effect.

Mr. Knudsen clarified his earlier statement by noting that the Commission had an additional option -- that of amending the rule through a different proceeding which would allow for larger public participation and broader information to be considered. Commissioner Lorenzen asked if the rule could be simply amended to allow a discretionary out as opposed to rewriting the standard. Mr. Knudsen responded that it could be done and all that would be required would be notice and hearing.

Commissioner Lorenzen MOVED adoption of the hearings officer's proposed order with regard to the conclusions and ultimate finding that on balance the impacts of the Salt Caves project water quality changes on trout would not be adverse to the trout fishery. The motions was seconded by Commissioner Castle. The motion was approved with Commissioner Squier voting no and Commissioners Castle, Whipple, Lorenzen, and Chair Wessinger voting yes.

Commissioner Castle then suggested that application of the temperature standard at different times of the year could result in violation at one time but that could be offset by improvements with respect to other standards. He questioned whether such an outcome could be handled under the current rule. He suggested that looking at the problem as a whole rather than at every different point could lead to a different conclusion. He noted that if you improve performance in three time periods, and fail to improve in a forth time period, in total your performance may have improved.

Commissioner Lorenzen agreed, noting that he was viewing the matter by anticipating the scrutiny of a further appeal. He suggested that the rule, by its extremely unclear language, provides the opportunity for the Commission to find that the rule was not intended to apply in this situation to force an unintended result.

Director Hansen was again recognized by the Chair and reminded the Commission that they were discussing a broader issue than is within the record in the proceeding. He also noted that his instincts told him that if the Department were asked to bring a recommendation to the Commission regarding winter temperatures, that recommendation would be quite restrictive based on information that is not in the current record. In response to a question from Commissioner Castle, Director Hansen noted again his concern that the record in the current proceeding does not contain the information that would be appropriate as the basis for modifying the temperature standard.

Commissioner Whipple asked for further clarification regarding the rule and the potential to change it. Mr. Knudsen responded that the point of discussion was to make it clear that changing the rule is an option. However, the decision in this case should be based on the existing rule and the factual evidence in the record prepared by the hearings officer.

Commissioner Lorenzen reiterated his view that there is discretion on how the rule is applied in this case.

Commissioner Castle stated that the director made his decision based on the rules laid down by the Commission, and he came to a logical, reasonable conclusion based on those rules. However, he stated that the issue before the Commission is a different one -- how it interprets its own rules and whether the project is in substantial compliance with those rules.

Mr. Knudsen noted that the Director, the Commission, the Hearings Officer, and the Court all have the same charge -- to get the correct interpretation to the rule. He suggested that all look to the same issues. What does the standard say? What was the context the standard was developed in? If there is ambiguity, what does the legislative history say? In response to a question from Commissioner Castle, Mr. Knudsen also stated that the Commission, upon appeal, can disagree with the Director's legal analysis, or his interpretation of legislative history, or how he thinks the context affects rule interpretation. But he suggested that was different than essentially creating a new rule in the process.

It was MOVED by Commissioner Squier that the conclusions of the hearings officer on the temperature standard be affirmed. The motion was seconded by Chair Wessinger.

Commissioner Whipple asked again about the Commission's discretionary authority over the numeric standard and the ability to determine that it doesn't apply. Mr. Knudsen responded that the Commission has some discretion, but it needs to be careful in examining and specifying exactly what it is doing, and why the rule doesn't apply. Commissioner Whipple commented that she couldn't say she liked the result, but she recognized that the rule exists.

Upon roll call vote, the motion was approved with Commissioner Squier, Commissioner Whipple, and Chair Wessinger voting yes and Commissioner Castle and Commissioner Lorenzen voting no.

Mr. Knudsen stated that there were other portions of the hearings officer's proposed order that may require some action unless approval was implicit in the two motions approved.

Commissioner Lorenzen stated that he hoped the Commission would consider an expedited rulemaking process to analyze the issue. He noted that he was uncomfortable with the result and believes the rule should be modified as quickly as possible.

It was then MOVED by Commissioner Castle and seconded by Commissioner Whipple that the hearings officer's proposed order as presented be approved. Commissioner Squier stated she was uncomfortable with such a motion because it distorted the positions on the previous motions. Commissioner Castle withdrew the motion.

Chair Wessinger noted that people had signed up to comment on the matter. Mr. Knudsen advised that it would be inappropriate to receive public comments regarding the contested case proceeding.

It was MOVED by Commissioner Castle that all of the first page and the first word on the second page of the hearings officer's proposed order be approved. The motion was seconded by Commissioner Whipple and unanimously approved.

It was MOVED by Commissioner Castle that Findings of Fact numbers 1, 2, and 3 of the hearings officer's proposed order be approved. The motion was seconded by Commissioner Whipple and unanimously approved.

The Commission then adjourned for lunch.

C. Directions to Department and Delegation to Director

The meeting was reconvened with consideration of a portion of Agenda Item C. Chair Wessinger asked the Commission to specifically consider item 5 in the memo -- and authorize the Director to make the decision to initiate rulemaking by authorizing public hearings on proposed rules. The Director would be expected to (1) identify significant issues for Commission consideration in work session prior to drafting of rules, (2) forward copies of hearing notices and proposed rule packages to Commission members to allow members to be aware of actions in process, (3) flag for Commission members any rules expected to be controversial or result in personal contacts, and (4) report on the status of rulemaking actions as part of a Director's report at each meeting. The Department would also make an effort to reduce the volume of material in staff reports.

It was MOVED by Commissioner Castle that the recommendations in item 5 in the memo be approved. The motion was seconded by Commissioner Whipple and unanimously approved. Commissioner Lorenzen indicated his support but noted a concern over the potential difficulty in impacting a rule at the end of the process and therefore the need to effectively identify issues in the beginning. Commissioner Squier concurred in the concern.

The Commission was reminded that the next meeting would be on November 7 and 8 and was being scheduled for Medford. Commission members were to get back with staff to identify potential conflicts for purposes of establishing future meeting dates. Commissioner Castle then left the meeting.

D. Panel Discussion of Proposed Chemical Mining Rules

Lydia Taylor, Administrator of the Water Quality Division, introduced the discussion on the chemical mining rules. She noted that two representatives of the mining industry and two representatives of the environmental community had been asked to make a presentation to the Commission on their views of the proposed chemical mining rules. Each group was advised to limit their presentation to 30 minutes. She also noted that Kent Ashbaker and Jerry Turnbaugh of the Water Quality staff were available to answer questions. She provided the Commission a table summarizing issues as addressed in the original draft of the rules and as addressed in the current draft. Director Hansen noted that representative of the Department of Geology and Mineral Industries and Department of Fish and Wildlife were also present to respond to questions.

Debra Struhsaker, an independent consultant on environmental and regulatory issues for the mining industry and for the Oregon Mining Council, began the presentation to the Commission on behalf of the mining industry. She noted that they would address their concerns with the technical aspects of the proposed regulations. She acknowledged the substantial efforts that had gone into the development of the rules to date. She noted that her experience is quite diverse in terms of the issues she has addressed and the states she has worked in, thus leading to a broad perspective on the issues. She handed out copies of overhead slides that she was using in her presentation.

Ms. Struhsaker made the following points in her presentation:

1. The rules should be performance standards rather than design or "universal" criteria. Regulations must apply to both eastern and western Oregon where climate, terrain, habitat, and hydrologic conditions are different. Universally prescribed design and closure criteria cannot satisfy the needs of Oregon's diverse natural environment. The current rules contain design criteria that are extremely stringent and may be good in some settings but not in others. Clarification of "alternative environmental protective means" is required. Clear guidelines need to be established for evaluating site specific criteria.

2. Hazardous Waste philosophy was used to write the rules and that is not necessary to protect the environment. The rules are inconsistent regarding whether mine waste is hazardous. A technically incorrect approach has been specified on waste classification.

3. Closure requirements are too prescriptive and should be based on site specific conditions. Compliance with environmental performance standards is achievable without requiring low permeability covers in many cases.

4. Proposed wildlife protection measures are redundant. Both detoxification and positive exclusion are required when either will suffice on tailings. The requirements need to mesh with Fish and Wildlife rules. The mortality problems at mining sites has been solved.

5. The wetlands restrictions should be removed.

Bill Schafer, representing the Oregon Mining Council, continued the presentation:

6. Thirty year post closure monitoring is not necessary. The duration of monitoring should be determined on a site specific basis.

7. The limitation of 24 inch hydraulic head in the heap effectively bans valley leach systems.

8. The approach to classification of mine wastes is flawed. EPA says method 1311 is incorrect for mine waste classification; 1312 should be used instead.

9. The proposed acid-potential evaluation provisions are inconsistent with established practice. Mitigation measures should not be prescriptive.

Ms. Struhsaker closed by reiterating their desire to resolve the outstanding issues prior to rule adoption.

Larry Tuttle, representing Wilderness Society and other conservation organizations, summarized their involvement and concerns regarding mining wastes. He noted that they liked the first draft of the rules that were submitted to public hearing. Those rules were consistent with the governor's directive. He stated they were less happy with the second draft. They support development of the best standards to give certainty to the industry and to drive technology. He recommended that the Commission direct the Department to reopen the record and potentially hold added hearings. He suggested that the hearings be before the EQC.

Gary Brown, representing Citizens for Responsible Mining in Ontario, suggested that there will be many large scale mining operations in Oregon, not just a few. He provided a package of information for the record which recorded examples of problem mining operations. With respect to the present draft rules, he disagreed with the proposal to drop the triple liner requirement (one clay plus two synthetic) in favor of a double liner system (one clay and one synthetic in contact). He noted that the effects of leaks into the ground after closure was not known. He also noted that the heap retains large quantities of solution, and something is needed under the heaps to protect groundwater in the future. He also noted the need for long term protection through detoxification, that acid mine drainage is still a

problem, and that problems should be prevented now and into the future rather than counting on the potential ability to correct them later.

Chair Wessinger then asked for questions from the Commission.

Commissioner Lorenzen asked for identification of a western state that was considered a model of environmental protection for mining wastes. Ms. Struhsaker indicated that Nevada and California were considered to be models. Commissioner Lorenzen asked to be provided with the names of contacts later. He then asked why mining waste should not be treated as hazardous waste. Ms. Struhsaker indicated that the large volumes of low hazard materials makes it difficult. She stated that if a waste tests as hazardous under the 1312 test, then it is treated as hazardous waste.

Chair Wessinger noted that when things get tough economically, environmental costs are easy to cut. He asked if the proposed rules were adequate for monitoring. Larry Tuttle responded that the legislature required third party monitoring to be paid for by the mining operation. In addition, a bond is required for all costs.

Chair Wessinger thanked the panel and asked the Department to come forward and summarize the major changes to the rules and the reasons for the changes. Jerry Turnbaugh summarized as follows:

(1) Mill Tailings/End of Pipe Treatment -- The proposed rules do not set wildlife protection levels, but a 30 ppm WAD maximum technology based limit is specified.

(2) Liners/Leak Detection/Closure -- The original proposal specified a triple liner system and the current draft proposes a double liner system. In response to a question about the reason for the change, Mr. Turnbaugh characterized the double liner system as low leakage and indicated that technical difficulties in effectively engineering and installing the triple liner system caused him to move to the double liner recommendation. In response to questions about leak detection, Mr. Turnbaugh stated that there is not a good leak detection system for use with the double liner system.

(3) A variance provision that was included in the initial draft was removed from the current draft. The Department now believed that variance type situations could be handled in permit drafting without adding the variance provision to the rules.

(4) Guidelines for tanks and vessels in the original draft were eliminated in the current draft. Such facilities were not expected to be extensively used, and could be handled adequately in the plan review process.

Chair Wessinger asked for suggestions on the next steps. Director Hansen suggested that the Commission could go step by step through the rules or it could give some direction to the Department and ask the Department to return. Among other issue that guidance would be welcomed on were whether the Commission wanted redundancy to be required in the level of protection provided, and whether the Department should defer to the Department of Fish and Wildlife on wildlife protection or make its own judgements.

Commissioner Lorenzen indicated that he wanted time to review the matter in light of the discussion before he voiced his reactions and recommendations. Commissioner Squier indicated that before she could form any judgments, she needed additional technical information on the state of the art in monitoring to detect leaks, and the ability to rapidly fix a leak once detected. This was necessary before she could form any judgments regarding the difference between double and triple liners and the need for redundancy.

Chair Wessinger stated that the Commission has expressed the desire for a very stringent rule. He noted that when they are done, they don't want an "Exxon". He suggested that the Department go back and evaluate the discussion and comments and return at the November meeting with a specific recommendation on the issues. At that time, the Commission would provide specific direction for developing the final rule draft. Commissioner Whipple noted that the Commission was not looking for a change in the approach.

Director's Report

Director Hansen noted that the Automobile Club of Oregon had filed suit challenging the assessment in SB 1215 for the underground tank financial assistance program, and the vehicle emission fee specified in HB 2175. This action puts the new underground tank financial assistance program on hold. The Supreme Court is expected to take 6 months to a year for review.

Northwest Environmental Advocates has filed suit in circuit court seeking review of the permit issued by the Department to the City of Portland.

The City of Portland is pursuing strong water conservation measures to preserve Bull Run water supplies. The City is under agreement with the Department to not pump their backup wells because the pumping could interfere with the Department's study of contaminated groundwater in the area of the wells.

There was no further business, and the meeting was adjourned.

and activities prior to the time she became a member of the EQC would constitute ex parte exposure to the facts that relate to this case such that it would appear that she could not make a fair assessment of those facts on the record now before the EQC.

Commissioner Squier went on to cite specific reasons why she did not believe she had such exposure. She noted that she had previously advised a different agency or agencies with respect to questions of law that pertained to a different application than the one before the EQC. The current proceeding and the prior proceedings in which she had advised other agencies had to do with different statutory schemes. She noted that there was a two level separation. First, her prior actions were not factual investigations, and second, the questions of law she was dealing with did not bear in any direct fashion on any of the issues before the EQC.

Commissioner Squier discussed citations in Mr. Glick's affidavit at some length. She specifically noted that her records indicated that her last day of service with the Department of Justice was July 7, 1989. This was prior to the date of filing of a court case on July 30, 1989, and prior to release of the draft environmental impact statement on the Salt Caves project in July 1989. She noted that she did not see how she could have much exposure to any kind of factual discussion with respect to the water quality certification proposal currently before the Commission because the ~~[issue]~~ proposal had not ripened to the point that anyone was looking at factual issues.

Commissioner Squier summarized that any exposure she had was in a different proceeding, before a different agency, and was confined to forming an opinion, which was her job, on legal questions about application of the statutory scheme. She did not believe she had any exposure prior to this case to the facts that are at issue before the EQC. She closed by stating that she believed she could decide the case in a neutral and fair fashion looking at the factual record. She then asked for brief comments from other counsel to point out anything she had forgotten or misperceived.

Chair Wessinger called upon Richard Glick, attorney representing the City of Klamath Falls.

Mr. Glick noted for the record that they did not question the integrity of Commissioner Squier, and did not have any direct information that she had personal bias against the project or the City of Klamath Falls. Rather, they believe that prior involvement in a case that is substantive and far reaching in a different capacity than as a member of the EQC is sufficient to disqualify participation. Specifically, objectivity is too much to ask of a person who has acted as an advocate for a state agency that has rendered substantive legal advise that was adverse to the project and has been involved in discussions on how the state will respond before the Federal Energy Regulatory Commission (FERC). He noted that as counsel to the Water Resources Department, Ms. Squier participated in decisions that were adverse to the proposed Salt Caves project. Mr. Glick also noted that state comments to FERC were filed through the Strategic Water Management Group and that Ms. Squier participated at that

State of Oregon

Department of Environmental Quality Memorandum

Date: December 9, 1991

To: Environmental Quality Commission

From: Harold Sawyer

Subject: Corrected page for October 10, 1991 EQC Minutes

Attached is a corrected copy of page 4 of the minutes for the October 10, 1991 meeting. The additions are underlined and the deletions are [~~lined through~~].

The changes are necessary to more accurately capture essential points in the summary of the discussion.

State of Oregon

Environmental Quality Commission Memorandum

Date: October 1, 1991

To: Environmental Quality Commission Members

From: Bill Wessinger

Subject: Agenda Item C, October 10, 1991, EQC Meeting

Directions to Department and Delegation to Director

I believe it is appropriate for us, as a "new" Commission, to begin a process of clarifying our desires and expectations for the Department. To this end, I would like to have us spend a few minutes at the October 10, 1991, meeting discussing and establishing any immediate changes we would like to see for Commission meetings and Department actions. Then, after we have a couple of meetings to settle in as a "new" Commission, I think we should consider a retreat with Department management staff to spend time fine tuning our expectations and internal procedural processes.

I would like to share with you some preliminary thoughts regarding Commission meetings and Commission/Department interaction. These ideas have developed through conversations with Commission members, the Director, and Department staff. They are not cast in stone, but are offered as a starting point for our discussions. I would like to have us consider these and any other items you may wish to raise and see if we can reach consensus on any immediate changes we would like to implement.

1. **Public Forum at Commission Meetings**

   I believe the public forum is an important and necessary agenda item. We need to make it a more effective part of the meeting and the process. I don't know what the best way to accomplish this is, but would like to rely on Carolyn Young to tell us what we should do and how. Commission meeting format could change somewhat to better accommodate the public forum.

2. **Director's Report at Commission Meetings**

   I would like to consider placing more emphasis on the Director's Report and moving it earlier in the meeting. Perhaps it could be just before or just after the public forum. This would provide an excellent opportunity to inform and educate those attending the meetings on a broader range of items of significance.

   I would also like a "bullet" style written document summarizing the Director's report to be available to Commission members after the meeting. This would be

helpful as a reference. I would then expect to call the Director after the meeting to follow up on any items that were of particular interest to us. I would also expect any member to call the appropriate Department staff if more information is desired on any item.

3. **Length and Starting Time for Commission Meetings**

We have been routinely holding two day meetings, with a work session one day, and a regular meeting the next. We have some difficulty in finding two day blocks when all Commission members can be present.

Perhaps we should consider trying to have one day meetings as the normal thing, with an occasional extra work session as needed for a special topic. If we opt for a shorter agenda (as discussed below), we could start with Breakfast with staff to give us some time for more informal discussion, and then proceed to the meeting. We could also invite Martha Pagel to join us for breakfast whenever her schedule would permit to give us an informal opportunity for an update from the Governor's office.

4. **What We Spend Our Time On**

The work of the Commission and Department is critical to Oregon and its future. Because our time is limited, we need to spend most of our time on the most significant of the many important issues facing the Department. During meetings, we tend to spend quite a bit of time on a few controversial items (quite properly), and spend almost no time on the rest (in some cases not enough). Controversial items certainly can be significant, but not all significant issues are or will become controversial. I believe we are not doing our job if we spend most of our time dealing with items defined by the public to be controversial, and spend too little time on those items we would determine to be important. In short, what I am asking is that we, as a Commission, establish priorities for our time.

My preference would be for the Commission to spend time on a smaller number of "truly significant" issues, and rely on the Department to handle the other, more routine items in a manner consistent with our direction, and keep us informed on things we need to know.

One of the most important tasks we as a Commission can accomplish is to perform our policy setting function by choosing what to spend and what not to spend scarce Department resources on; both dollars and personnel. By doing this, we can also serve the appropriate role as buffer for the Department when it

must tell particular interests that it is unable to devote time to an issue of their concern.

5. **Length of Commission Agenda**

I believe Commission agendas are too long. The amount of material to review and study prior to the meeting is substantial -- too much for volunteer Commission members to do justice to. By pursuing the course identified above, we can shorten and focus the time spent in Commission meetings.

I would propose that we consider the following immediately, and discuss this matter in more depth at a future retreat:

- Authorize the Director to make the decision to initiate rulemaking by authorizing public hearings on the proposed rules. This would be in lieu of placing the Hearing Authorizations on the agenda.

  The Director would be expected to:

  - Identify significant policy issues or potentially controversial rules for Commission Work Session discussion prior to the time the Department would complete a rule draft for public hearing (this is already being done). The mining rules are an example of a case where such work sessions have shaped the direction of proposed rules.

  - Forward to Commission members the hearing notices and the information packages provided to interested persons on the proposed rule. This will allow Commission members to be aware of actions in process, and follow up with staff if there are questions.

  - Flag for Commission members (by special memo or phone call) any items that would be expected to result in controversy or direct contacts from the public.

  - Report to the Commission on rulemaking actions initiated and in process, and issues that arise during the process. This could be part of the Director's report at the Commission meeting, or in the form of a periodic memorandum report.

- Ask the Department to make an effort to reduce the volume of material in the staff reports (without depriving us of significant information). My

preference would be to give the Department some freedom to experiment, with some thoughts as follows:

- Try a one (1) page summary that conveys what the agenda item is about, who is affected, who has been involved, what issues remain in dispute and what the recommendation is. This would be helpful to me in structuring my time in preparing for Commission meetings.

- The summary could be followed by whatever more detailed discussion and attachments would be essential to inform Commission members on the decision to be made. Existing documents should be used whenever possible (rather than preparing new materials).

- Provide a reference list of supporting documents available from the Department upon request rather than including all of them as attachments (just in case someone may want to refer to them).

- We should plan on spending a full day on those days when meetings are scheduled. When we begin to drift out in the afternoon, the essential business does not get our full attention.

- On those special occasions when work sessions are scheduled, we should plan on devoting our full attention to in-depth discussions.

- Perhaps we should leave time on the agenda right after lunch for emerging issues to be brought forward by the Department on an as needed basis. An example of what I mean would be the discussion on Agricultural Tax Credits. We do not do topics such as this justice when we leave them to last on the agenda.

6. **Schedule for Future Meetings**

- Meetings are currently scheduled through December. We should schedule meetings for at least the first six months of 1992 as soon as we can.

- I would like to see us schedule a retreat fairly soon after the December meeting to focus on internal issues.

Please feel free to add any items you would like to discuss to this list.

State of Oregon

Department of Environmental Quality Memorandum

Date: September 23, 1991

To: Environmental Quality Commission

From: Fred Hansen, Director

Subject: Agenda Item D, October 10, 1991, EQC Meeting

Panel Discussion of Proposed Chemical Mining Rules

On May 15, 17, and 20, 1991, the Department conducted three hearing(s) on proposed **Chemical Mining Rules** in accordance with Commission direction. Testimony was extensive. Since then, the Department has evaluated the testimony received, met with representatives of industry, environmental groups, federal agencies, and state agencies on numerous occasions, and proposed revisions to the rules originally presented for comment at the public hearings.

Attached are the following documents:

Attachment A	**Proposed Rules on Chemical Mining** (October 10, 1991 Draft).
Attachment B	**Abstract of Technical Comments Received** during the public comment process.
Attachment C	**Response to Public Comment** (significant issues).
Attachment D	Markup of the rule proposal originally presented for comment at public hearings to show proposed changes.

To facilitate discussion of the proposed rules, a panel consisting of mining industry spokespersons and environmental group spokespersons is being assembled. The Department is proposing that each group be given 30 minutes for a presentation of their concerns, followed by questions from the Commission. Representatives of other interested agencies and Department staff will also be available for questions from the Commission.

Following the panel discussion and questions, the Department recommends that the Commission discuss the matter and provide direction for revision of the proposed rules as deemed appropriate, with the matter to be returned to the Commission for final adoption at the meeting currently scheduled for December 12-13, 1991.

FH:1

RULES PROPOSAL:

OREGON ADMINISTRATIVE RULES

CHAPTER 340

DIVISION 43

CHEMICAL MINING

GUIDELINES FOR THE DESIGN, CONSTRUCTION, OPERATION AND CLOSURE OF OPERATIONS SUBJECT TO THESE RULES

OAR 340-43-070	**Guidelines for Design, Construction, and Operation of Heap-Leach Facilities**
OAR 340-43-075	**Guidelines for Disposal of Mill Tailings**
OAR 340-43-080	**Guidelines for Disposal or Storage of Wasterock, Low-Grade Ore and Other Mined Materials**
OAR 340-43-085	**Guidelines for Heap-Leach and Tailings Disposal Facility Closure**
OAR 340-43-090	**Post-Closure Monitoring**
OAR 340-43-095	**Land Disposal of Wastewater**
OAR 340-43-100	**Guidelines for Open-Pit Closure**

PURPOSE

340-43-005

The purpose of these rules and guidelines is to protect the quality of the environment and public health in Oregon by requiring application of "... all available and reasonable methods...", Oregon Revised Statutes (ORS) 468.710, for control of wastes and chemicals relative to design, construction, operation, and closure of mining operations which use cyanide or other toxic chemicals to extract metals or metal-bearing minerals from the ore or which produce wastes or wastewaters containing toxic materials.

SCOPE

~~340-43-010~~

These rules and guidelines apply to chemical process mining operations which use chemicals to extract metals from the ore.

DEFINITIONS

340-43-015

Unless the context requires otherwise, as used in these rules:

(1) "Chemical process mine" means a mining and

processing operation for metal-bearing ores that uses chemicals to dissolve metals from ores.

(2) "Department" means the Department of Environmental Quality.

(3) "Guidelines" means this body of rules contained in 340-43-050 through 340-43-120.

(4) "Positive exclusion of wildlife" means the use of such devices as tanks, pipes, fences, netting, covers and heap-leach drip-irrigation emitters or covered emitters.

(5) "Tailings" means the spent ore resulting from the milling and chemical extraction process.

PERMIT REQUIRED

340-43-020

(1) A person proposing to construct a new chemical mining operation, commencing to operate an existing non-permitted operation, or proposing to substantially modify or expand an existing operation shall first apply for, and receive, a permit from the Department. The permit may be an NPDES (National Pollutant Discharge Elimination System) permit if there is a point-source discharge to surface waters or a WPCF (Water Pollution Control Facility) permit if there is no discharge. Consideration may be given to site-specific conditions such as climate, proximity to water, and type of wastes to establish the final permit type and requirements for the facility.

(2) The permit application shall comply with the requirements of OAR Chapter 340, Divisions 14 and 45 and be accompanied by a report that fully addresses the requirements of this Chapter.

PERMIT APPLICATION

340-43-025

(1) The permit application shall fully describe the existing site and environmental conditions, with an analysis of how the proposed operation will affect the site and its environment. The Department shall, at a minimum, require the information required of an applicant for the DOGAMI

consolidated application as required under Section 13, Chapter 735, 1991 Oregon Laws. The Department will also use the information contained in NEPA (National Environmental Policy Act), EA (Environmental Assessment), or EIS (Environmental Impact Statement) documents, if they are required by the project, as partial fulfillment of the requirements of this paragraph.

(2) The permit application shall, in addition to the information described in Paragraph (1) above, include the following information, unless the information has been otherwise submitted:

(a) Climate/meteorology characterization, with supporting data;

(b) Soils characterization, with supporting data;

(c) Surface water hydrology study, with supporting data;

(g) Characterization of surface water and groundwater quality;

(h) Inventory of surface water and groundwater beneficial uses;

(i) Hydrogeologic characterization of groundwater, with supporting data;

(j) Geologic engineering, hazards and geotechnical study, with supporting data;

(k) Characterization of mine materials and wastes which include, for example, overburden, waste rock, stockpiled ore, leached ore and tailings. Characterization of mine materials and wastes shall include, but not be limited to the following:

(A) Chemical and mineral analysis related to toxicity;

(B) Determination of the potential for acid generation;

(C) Determination of the potential for long-term leaching of toxic materials from the wastes;

(l) Characterization of wastewater (quantity and chemical and physical quality) produced by the operation;

(m) Assessment of the potential for residual acid-water formation from waste disposal facilities, low-grade ore stockpiles, waste rock piles and surface water or groundwater accumulation in open pits that will remain after mining.

(3) Data submitted by the permit applicant should be based on analysis of the actual materials, when possible, or may be based on estimates from knowledge of similar operations, and professional judgment.

PLANS AND SPECIFICATIONS

340-43-030

(1) A person constructing or commencing to operate a chemical process mine or substantially modifying or expanding an existing chemical process mine shall first submit plans and specifications to the Department for construction, operation and maintenance of the facilities intended for treatment, control and disposal of wastes.

(2) The Department shall approve the plans, in writing, before construction of the facilities may be started. The plans shall address all applicable requirements of this Chapter and shall include, but not be limited to, the following:

(a) A description of the facilities to be constructed;

(b) A surface water management plan for control of surface water;

(c) A wastewater management plan for treatment and disposal of excess wastewater, including provisions for reuse and wastewater-minimization;

(d) A facility construction plan including, as applicable, the design of low-permeability soil barriers, the type of geosynthetics to be used and a description of their installation methods, the design of wastewater treatment facilities and processes, a quality assurance

plan for applicable phases of construction and a listing of construction certification reports to be provided to the Department;

(e) A preliminary closure plan;

(f) A preliminary post-closure monitoring and maintenance plan;

(g) A spill containment and control plan.

DESIGN, CONSTRUCTION, OPERATION AND CLOSURE REQUIREMENTS

340-43-035

(1) All chemical process and waste disposal facilities and facilities for mixing, distribution and application of chemicals associated with on-site mining operations; ore preparation and beneficiation facilities; and processed ore disposal facilities shall be designed, constructed, operated and closed in accordance with the guidelines contained in this Chapter.

(2) A groundwater monitoring plan shall be submitted to, and approved by, the Department. Monitoring wells shall be installed for detection of groundwater contamination as required by OAR Chapter 340, Division 40, unless the hydrogeology of the site or other technical information indicates that an adverse impact on groundwater quality is not likely to occur.

(3) The Department may approve alternate environmental protective means if the permit applicant can demonstrate that they provide equivalent protection.

(4) The Department may, in accordance with a written compliance schedule, grant reasonable time for existing facilities to comply with these rules.

EXEMPTION FROM STATE PERMIT FOR HAZARDOUS WASTE TREATMENT OR DISPOSAL FACILITIES

340-43-040

(1) The state hazardous waste program requires a permit for the "treatment", "storage" or "disposal" of any "hazardous waste" as identified or listed in OAR Chapter 340, Division 101 from the Department,

prior to the treatment and disposal of wastes. Permitting requirements can be found in OAR Chapter 340, Division 105, Hazardous Waste Management.

(2) However, any operation permitted under these rules, which would otherwise require the neutralization or treatment of hazardous waste and would require a permit pursuant to OAR Chapter 340, Division 105, shall be exempt from the requirement to obtain such hazardous waste treatment permit.

GUIDELINES FOR THE DESIGN, CONSTRUCTION, OPERATION AND CLOSURE OF OPERATIONS SUBJECT TO THESE RULES

PURPOSE

340-43-045

(1) The guidelines contained in these rules establish criteria for the design, construction, operation and closure of facilities subject to these rules and supplement the provisions of paragraphs 340-43-005 through 340-43-040 of this rule.

(2) Alternative methods of control of wastes may be acceptable if the permit applicant can demonstrate that the alternate methods will provide fully-equivalent environmental protection. The burden of proof of fully-equivalent protection lies with the permit applicant.

(3) Any disapproval of submitted plans or specifications, or imposition of requirements by the Department to improve existing facilities or their operation will be referenced when appropriate, to applicable guidelines or appropriate sections of these rules.

GENERAL PROVISIONS

340-43-050

(1) Facilities permitted under either a WPCF or NPDES permit shall not discharge wastewater or process solutions to surface water, groundwater or soils, except as expressly allowed by the permit.

(2) Facilities subject to these rules shall not be sited in 100-year floodplains or wetlands. A buffer zone (a minimum of 200 feet wide) shall be established between waste disposal facilities and surface waters.

(3) All chemical conveyances (ditches, troughs, pipes, etc.) shall be equipped with secondary containment and leak detection means for preventing and detecting the release of chemicals to surface water, groundwater or soils.

(4) Acid water accumulation in open pits resulting from the mining operation must be prevented by appropriate mining practices, by measures taken in the closure process, or be treated to control pH and toxicity, for the life of the pit.

(5) Construction of surface impoundment liner systems shall conform generally to the principles and practices described in EPA/600/2-88/052, Lining of Waste Containment and Other Impoundment Facilities, September 1988.

CONTROL OF SURFACE WATER RUN-ON AND RUN-OFF

340-43-055

(1) Surface water run-on and run-off shall be controlled such that it will not endanger the facility or become contaminated by contact with process materials or loaded with sediment. The control systems shall be designed to accommodate a 100-year, 24-hour storm event, or any other defined climatic event that is more appropriate to the site, and be placed so as to allow for restoration of the natural drainage network, to the maximum extent practicable, upon facility closure.

(2) All mine materials shall be properly placed and protected from erosion by surface water and precipitation so as to not contribute sediment to site stormwater run-off or to otherwise contaminate surface water.

PHYSICAL STABILITY OF WASTEWATER TREATMENT FACILITIES, WASTE DISPOSAL FACILITIES AND EMPLACED MINE MATERIALS

340-43-060

(1) Permit applicants must demonstrate to the Department that the design of chemical processing facilities and waste disposal facilities is adequate to ensure the stability of all structural components of the facilities during operation, closure and post-closure.

(2) Retaining structures, foundations and mine materials emplacements shall be designed by a qualified, registered professional and be constructed for long-term stability under anticipated loading and seismic conditions.

(3) Temporary structures and materials emplacements may, with written approval from the Department, be constructed to a lesser standard if it can be shown that they pose no or minimal threat to public safety or the environment.

PROTECTION OF WILDLIFE

340-43-065

(1) Wildlife shall be positively excluded from contact with chemical processing solutions and wastewaters containing chemicals unless the processing solutions and wastewaters can be shown not to pose a threat to wildlife under the rules of the ODF&W (Oregon Department of Fish and Wildlife).

(2) Hazing or other non-positive protective measures may be used in addition to positive exclusion measures but they are not acceptable as a substitute for positive exclusion.

GUIDELINES FOR DESIGN, CONSTRUCTION, AND OPERATION OF HEAP-LEACH FACILITIES

340-43-070

(1) These guidelines apply to heap-leach facilities using dedicated, or expanding, pads. Heap-leach facilities using on-off, reusable pads may require variations from these rules. They shall be approved on a case-by-case basis by the Department.

(2) The heap-leach facility (pad and associated ponds, pipes and tanks) shall be sized to prevent flooding of any of its components. A limited-use, emergency overflow pond constructed to lesser requirements as described in this paragraph may be used in addition to the pregnant-solution pond to reduce the required design capacity of the pregnant-solution pond.

(3) TABLE 1 of this Division establishes minimum capacity-sizing criteria for the leach-pad and ponds. The pad and ponds may be designed to act separately or in conjunction with each other to obtain the required storage volumes. Other design criteria may be used, with Department approval, if local conditions warrant. The best available climatic data shall be used to confirm the most appropriate critical design storm event and estimate the liquid levels in the system over a full seasonal cycle. The liquid mass balance may include provision for evaporation.

(4) The heap-leach pad liner system shall be of double liner construction with between-liner leak detection consisting of:

(a) An engineered, stable, low permeability soil/clay bottom liner (maximum coefficient of permeability of 10^{-7} cm/sec) with a minimum thickness of 18 inches;

(b) A continuous full-membrane liner of suitable synthetic material in contact with the soil/clay bottom liner;

(c) A leak-collection system between the synthetic top liner and the soil/clay bottom liner.

The thickness of the bottom soil/clay liner may be reduced and/or the coefficient of permeability of the soil/clay liner may be increased if an additional synthetic liner is used. When two synthetic liners are used, the leak collection system shall be installed between the two synthetic liners.

(5) The processing-chemical pond liners shall be of triple liner construction with between-liner leak detection consisting of:

(a) An engineered, stable, low permeability soil/clay bottom liner (maximum coefficient of

permeability of 10^{-7} cm/sec) with a minimum thickness of 12 inches;

(b) Continuous full-membrane middle and top liners of synthetic material separated by a permeable material (minimum coefficient of permeability of 10^{-2} cm/sec);

(c) A leak collection system between the synthetic liners.

(6) Emergency ponds may be constructed as an alternative to larger pregnant and barren ponds. The emergency pond may be constructed to a lesser standard, with the limitation that it is to be used only infrequently and for short periods of time. A between-liner leak detection system is not required for the emergency pond.

(7) The emergency-pond liner shall consist of:

(a) An engineered, stable, low permeability soil/clay bottom liner (maximum coefficient of permeability of 10^{-6} cm/sec) with a minimum thickness of 12 inches, and

(b) A single full-membrane synthetic top liner of suitable material.

(8) The heap-leach pad shall be provided with a process chemical collection system above the liner that will prevent an accumulation of process chemical within the heap greater than 24 inches in depth.

(9) The permittee shall prepare a written operating plan for safe temporary shut-down of the heap-leach facility and train employees in its implementation.

(10) The permittee shall respond to leakage collected by the heap-leach and processing-chemical storage pond leak-collection systems according to the process defined in TABLE 2.

(11) The permit applicant shall determine the acid-generating potential of the spent ore by acid\base accounting and other appropriate static and dynamic laboratory tests. If the spent ore is shown to be potentially acid generating under the conditions expected in the heap at closure, the permittee shall submit a plan for acid correction for Department approval prior to loading the heap.

GUIDELINES FOR DISPOSAL OF MILL TAILINGS

340-43-075

(1) Mill tailings shall be treated by cyanide removal, chemical oxidation, or other means prior to disposal to reduce the WAD cyanide level in the liquid fraction. The permittee shall conduct laboratory column tests on mill tailings to determine the lowest practicable concentration to which the WAD cyanide (weak-acid dissociable cyanide as measured by ASTM Method D2036-82 C) can be reduced. In no event, shall the permitted WAD cyanide concentration in the liquid fraction of the tailings be greater than 30 ppm.

(2) Mill tailings shall pass the EPA TCLP (toxicity characteristic leach procedure), Method 1311, otherwise they will be considered a state hazardous waste.

(3) The permittee shall determine the potential for acid-water formation from the tailings by means of acid-base accounting and other suitable laboratory static and dynamic tests. If the tailings can produce acid water, basic materials shall be added to the tailings in sufficient quantity to make the ANP (acid neutralization potential) equal to at least three (3) times the APP (acid producing potential) prior to placement of tailings in the disposal facility.

(4) The disposal facility shall be lined with a composite double liner consisting of a full-membrane synthetic top liner in tight contact with an engineered, stable, soil/clay bottom liner (maximum coefficient of permeability of 10^{-7} cm/sec) having a minimum thickness of 12 inches.

Construction of the liner shall generally follow the principles and practices contained in <u>EPA/600/2-88/052, "Lining of Waste Containment and Other Impoundment Facilities," September, 1988.</u>

(5) The disposal facility shall be provided with a leachate collection system above the liner suitable for monitoring, collection and treatment of potential acid drainage.

GUIDELINES FOR DISPOSAL OR STORAGE OF WASTEROCK, LOW-GRADE ORE AND OTHER MINED MATERIALS

340-43-080

(1) The permittee shall determine the acid-generating potential of the wasterock, low-grade ore or other mined materials by acid/base accounting and other appropriate static and dynamic laboratory tests. If the mined materials are shown to be potentially acid generating, the permittee shall submit a plan for acid correction for Department approval prior to permanently placing the materials.

(2) The mined materials shall be tested with EPA Method 1312 and the test results shall meet the criteria specified in the EPA TCLP (toxicity characteristic leach procedure), Method 1311 test prior to permanently placing the mined materials.

GUIDELINES FOR HEAP-LEACH AND TAILINGS DISPOSAL FACILITY CLOSURE

340-43-085

(1) The waste disposal facilities shall be closed under these rules and in conjunction with the reclamation requirements of DOGAMI (Oregon Department of Geology and Mineral Industries).

(2) An up-dated closure plan and post-closure monitoring and maintenance plan shall be submitted to the Department by the permittee at least 180 days prior to beginning closure operations or making any substantial changes to the operation. The closure plan must be compatible with DOGAMI's reclamation plan and may be a part of it.

(3) Chemical conveyances (ditches, troughs, pipes, etc.) not necessary for post-closure monitoring shall be removed. The secondary containment systems shall be checked before closure for process-chemical contamination, and contaminated soil or other materials, if any, shall be removed to an acceptable disposal facility.

(4) Closure of the heap-leach facility.

(a) The heap shall be detoxified over a suitable period of time prior to closure, using rinse/rest cycles of rinsing and chemical oxidation treatment, if necessary. The WAD

cyanide concentration in the rinsate shall be no greater than 0.2 ppm.

(b) Spent heap-leach ore shall pass the EPA TCLP, Method 1311 test and criteria, otherwise it will be considered a state hazardous waste and must be disposed of under the state hazardous waste rules.

(c) Following detoxification as defined in (a) above, the heap shall be closed in place on the pad by covering the heap with a cover designed to prevent water and air infiltration. The cover should consist, at a minimum, of a low-permeability layer and suitable drainage and soil layers to prevent erosion and damage by animals and to sustain vegetation growth, in accordance with DOGAMI's reclamation rules.

(d) The ponds associated with the heap shall be closed by folding in the synthetic liners and filling and contouring the pits with inert material. Residual sludge may be disposed of in one of the on-site waste disposal facilities, provided it meets the criteria for such wastes in these guidelines. The process chemical collection system shall be maintained in operative condition so that it can be used to monitor the amount and quality of infiltrated water, if any, draining from the heap.

(5) Closure of the tailings disposal facility. The tailings disposal facility shall be closed by covering with a composite cover designed to prevent water and air infiltration and be environmentally stable for an indefinite period of time. Maximum effort shall be made to isolate the tailings from the environment. Construction of the cover shall generally follow the principles and practices contained in <u>EPA/530-SW-89-047, Technical Guidance Document -- Final Covers on Hazardous Waste Landfills and Surface Impoundments</u>.

POST-CLOSURE MONITORING

340-43-090

The Department may continue its permit in force for thirty (30) years after closure of the operation and

will include permit requirements for periodic monitoring to determine if release of pollutants is occurring.

Monitoring data will be reviewed regularly by the Department to determine the effectiveness of closure of the disposal facilities. The Department will consult with DOGAMI on release of security funds that would otherwise be needed to correct problems resulting from ineffective closure.

LAND DISPOSAL OF WASTEWATER

340-43-095

(1) To qualify for land disposal of excess wastewater, the permit applicant shall demonstrate to the Department that the process has been designed to minimize the amount of excess wastewater that is produced, through use of water-efficient processes, wastewater treatment and reuse, and reduction by natural evaporation. Excess wastewater that must be released shall be treated and disposed of to land under the conditions specified in the permit.

(2) A disposal plan shall be submitted as part of the permit application that, at a minimum, includes:

(a) Wastewater quantity and quality characterization;

(b) Soils characterization and suitability analysis;

(c) Drainage and run-off characteristics of the site relative to land application of wastewater;

(d) Proximity of the disposal site to groundwater and surface water and potential impact;

(e) Wastewater application schedule and water balance;

(f) Disposal site assimilative capacity determination;

(g) Soils, surface water and groundwater monitoring plan;

(h) Potential impact on wildlife or sensitive plant species.

(3) The Department will evaluate the disposal plan and set site-specific permit conditions for the wastewater discharge.

GUIDELINES FOR OPEN-PIT CLOSURE

340-43-100

(1) Open pits that will be left as a result of the mining operation shall be assessed prior to, and following, mining operations for the potential to contaminate water that might not meet water-quality standards due to build-up of acid or toxic metals.

(2) If the Department finds that the potential for water accumulation in the pit(s) exists, the permit applicant shall submit a closure plan for the pit that will address contamination prevention and possible remedial treatment of the water. The closure plan shall, at a minimum, examine the following alternatives:

(a) Avoidance, during mining, of acid-generating materials that can be left in place, rather than being exposed to oxidation and weathering;

(b) Removal from the pit and disposal, during or after the mining operation, of residual acid-generating materials that would otherwise be left exposed to oxidation and weathering;

(c) Protective capping in-situ of residual acid-generating materials;

(d) Treatment methods for correcting acidity and toxicity of accumulated water;

(e) Installation of an impermeable liner under ponded water to prevent groundwater contamination;

(f) Backfilling of the pit(s) above the water table to reduce oxidation of residual acid-generating materials.

TABLE 1

Heap-Leach Liquid Storage Criteria

Component	Pregnant-Solution Pond	Barren-Solution Pond
Operating Volume	Minimum necessary to maintain recirculation	Minimum necessary to maintain recirculation
Operational Surge	Anticipated draindown and rinse volume	Anticipated draindown and rinse volume
Climatic Surge	100-yr, 24-hr storm plus 10-yr snowmelt	100-yr, 24-hr storm plus 10-yr snowmelt
Safety Factor	2-ft dry freeboard	2-ft dry freeboard

TABLE 2

Required Responses to Leakage Detected from the Leach Pad

Leakage Category	Response
Zero leakage to expected leakage based on quality installation and known operating conditions.	Pump from monitoring sump.
As above to leakage sufficient to fill the collection sump during the prescribed monitoring period.	Notify the Department; increase pumping and monitoring.
As above to leakage sufficient to fill the leak detection system during the prescribed monitoring period.	Change operating practices reduce leakage.
Leakage in excess of that above (pressurized leak detection system).	Repair leaks under Department schedule.

ABSTRACT OF TECHNICAL COMMENTS RECEIVED REGARDING PROPOSED RULES FOR CHEMICAL MINING (OAR Chapter 340, Division 43)

Foreword

Extensive written and oral comment was received before, during, and after the thirty-day period that the rules were open for public comment. The following is the author's attempt to abstract the significant technical comments that were received and to note at least one source for the comment. Much of the comment was duplicative but no attempt was made to tally the number of commentators since the comment process focusses on the content of issues rather than their popularity.

The comment abstracts are the author's paraphrasing of the comments and are intended to be essentially correct but it should be understood that they may not exactly portray what the commentator intended.

The number(s) following each comment abstract refer to a commentator listed in the attached List of Referenced Commentators. The list does not identify all the commentators; it is intended only to refer to at least one commentator who raised a particular issue.

General Comments

ORS 468.710, under which DEQ is authorized, establishes a policy for water pollution control. While water law is appropriate for waste waters, it does not appear to provide sufficient basis for regulating mine processing and mine wastes beyond a potential to release contaminants to the environment. These DEQ rules are not supported by the Oregon water pollution control laws (which focus on point-source control). 10

DEQ should require further bonding for environmental damage, beyond DOGAMI's reclamation bonding. 1

Use the rules of other states, instead of trying to reinvent the rules. 28

Add a section prohibiting liquid cyanide transport to the site. 26

Add a section on fees--all fees should come from the miners for DEQ to monitor the sites. 26

Add a section on disposal of operational garbage. Burying on site should not be allowed. 26

Add a provision to require DEQ to check the past compliance record of the company requesting the permit. Companies with unresolved or ongoing problems in other states should not be allowed to operate in Oregon. 26

Add a section regulating transportation of chemicals. 1

DEQ should devise a strict air quality control program to protect against the hazards of dust and toxics raised by hauling and blasting. 6

Safe Drinking Water Act provisions which allow aquifers to be exempt from Safe Drinking Water standards should not apply to chemical process mines. 6

Facility construction should be monitored, inspected and approved by DEQ or a third party contractor. 6

340-43-005

Define "reasonable" as found in ORS 468.715

In order to exercise its authority under ORS 468.715(b), the department must show that (1) the technology required is necessary for the prevention of the new pollution and the abatement of existing pollution and (2) that the technology is both available and reasonable. The department has failed to meet these standards with its proposed regulations of mining activities. The rule-making process should follow the policies in ORS 468.710 and .715. The standard should be developed under 468.735(3) and .694. Rules should allow for site specific conditions. 12

The rules do not seem to recognize the regulations and standards enforced by federal land management agencies, which is not in keeping with 468.710(5) which calls for cooperation with federal agencies. 12

The department is charged with fostering the cooperation of people, industry, cities and counties in order to prevent, control and reduce pollution of the waters of the state. (ORS 468.715(a). 12

ORS 183.335 (2)(b)(D) imposes on the DEQ a requirement that it prepare a statement of fiscal impact and economic effect of the proposed action on the local government and the public and project any significant economic effect of the regulations on industry. 12

ORS 183.545 requires an agency to periodically review its rules to minimize economic effect on businesses. 12

ORS 468.735(h) requires the DEQ to consider the impact of its regulations on the development of industry when setting standards of quality and purity. The DEQ must show that the methods described by the rules are reasonable. 12

ORS 183.335 (2)(b)(D) A determination of reasonableness involves not only a determination that the method is effective but that it does not have any unreasonable negative economic impact on the regulated industry. 12

DEQ has decided to regulate mining wastes as a solid waste under subtitle D of RCRA rather than as hazardous waste under subtitle C, without clearly stating the policies or scientific evidence which justifies this more stringent treatment of mining waste. 12

340-43-010

Define "small...operations" as those with a production level of (less than) 1000 tons per day. 12

Clarify reference to the exclusion of small-scale froth-flotation operations. 37

Define "small" mineral extraction operations or establish a procedure for excluding small operations. 17

Limit scope to toxic chemicals and wastewaters containing toxic materials. 10

340-43-015

Does not correspond to the purpose section because it appears to apply to all operations using chemicals. Also, define "small" for the froth-flotation exemption. 39

Define "acid mine drainage" as "low pH water which contains high levels of sulphate and dissolved solids and which may also contain various levels of heavy metals". 25

Define "toxic chemicals" as those substances so listed by EPA (40 CFR Part 261). 10, 24

Define "toxic" (includes chlorine, bromine, lime, acids, etc.?)--rules should address only cyanide. 39

340-43-020

Consideration should be given to special areas of concern; e.g., State Parks, Research Natural Areas, BLM areas of Critical Environmental Concern, Endangered Species habitat, State Natural Heritage Conservation Areas, etc. 37

Should specify time frame for DEQ to respond to permittee and the fees to be charged. 35

Streamline the amount of redundant information required of permittees by committing to accepting the information submitted to other agencies. 27

340-43-025

(2) Soils characterization not necessary unless agency is prepared to consider soil attenuation capacities, otherwise soil information bears no relationship to water quality. 10

(2) Need a process for verifying submitted data to prevent falsification. 16

(2h) Specify what will be an adequate characterization of hydrogeology. 8

(2)(l) Delete because there should be no open pits; they should be refilled and reclaimed. 16

(3) This section is too weak; would allow applicant to falsify data under the guise of error. 16

(3) Add, "Site map <u>including floodplain information, if appropriate;</u> 14

(3) Add, "Data submitted...and professional judgement. <u>All data submitted shall be according to collection methodologies approved by department staff, and shall be reviewed for adequacy by department staff before the permit application is processed.</u> 14

(3) add after "...professional judgement <u>on the part of an engineer or geologist registered with the State of Oregon.</u> 8

Require information on special areas of concern and relationship to land use plans and, in coastal zones, consistency with Oregon Coastal Zone Management Plan. 37

Proposed rule gives little incentive for consideration of site-specific conditions. 10

Permit application info should be reviewed by a reputable

qualified firm with appropriate quality assurance included in the report. 1

Require applicant to identify "areas of special concern" in the application that are critical to the existence of endangered or threatened animal or plant species. Areas should include Areas of Critical Environmental Concern (ACEC), Research Natural Areas (RNA), Outstanding Areas (ONA) and areas designated by the Oregon Natural Heritage Plan. There should be protection for these areas from adjacent mining. 4

All baseline data and plans should be approved by DEQ or a third party contractor hired by DEQ, with no input from the applicant. 6

Registrations of professionals should be verified and stamps required. 8

Specify what is an adequate characterization of the hydrogeology. 8

340-43-030

(1) define "substantial" 37

(1) leaves "toxic" open to subjective judgement by DEQ. 18

(1) Define "toxic wastes" 8

(2) Should include requirements for a preliminary clean up, detoxification and restoration plan, with evidence of adequate financial ability to carry out the plan. 16

(2) Should specify time frame for DEQ response. 35
Water quality monitoring should begin <u>before</u> construction in order to establish baseline water quality data. 13

(2c) Add ...of excess wastewater, <u>control of acid mine drainage,</u>...8

(2d) Scope of DEQs review of construction plans should be limited to assessing whether or not the design will adequately protect the waters of the state. The guidelines essentially design the facility. ORS 468.735 (3) specifically assigns the design opportunity to the project proponent, not the DEQ and requires DEQ to review those designs for compliance with established water standards. 10

Allow preliminary design plans to be sufficient to start the application process. Allow applicants to prepare final plans during permitting. 39

Add provision to allow applicant to meet with Department to determine the scope of information the applicant must submit. "This would provide an excellent opportunity to obtain confidentially agreements on certain portions of the operation or flowsheet which may be proprietary or patentable."12

340-43-035

(1) Include a "grandfathering" provision for existing facilities which may be successfully operating with a lesser degree of design containment. 10

(2) List what the groundwater monitoring plan should include. 8

(2) Specify that wells must meet construction, use, maintenance and abandonment standards of Water Resources Department. 8

(2) Specify what happens if the monitoring program finds something. 8

(2) eliminate "unless hydrogeology ..."--do not allow this loophole. 26, 33

(2) define phrase "is not likely to occur"--too vague. 23

(2) eliminate "unless the...likely to occur" This is a possible loophole. 20, 31

(2) Paragraph should end at line 5, following "40"; paragraph as-is invites falsification of data. 16

(3) doesn't make sense. 17, 8

(3) Change wording in "...indicates that [an] no adverse impact on groundwater quality [is not likely to] will occur." 14

(3) Should include text to the effect: "The Department may approve protective means other than those required by parts (1) and (2) of this section if the permit applicant can demonstrate..." 10

(3) Missing text. 8

Local site characteristics may provide protection without the added requirement of redundant lining systems. Operator who will use best available technology should not have to prove that he will not affect the environment outside the isolated system. 18

340-43-040

(1) Clarify criteria DEQ will use to grant variations from the rules. 9

(1) Provide for state-wide public input on proposed variances to the rules. 29

(1) Rule does not clearly provide for a variance procedure based on a case-by-case evaluation. 22

(1) Delete entire section--should be no waivers for these types of operations. 16, 23, 26, 33

(1) Add at end; <u>Any variances requested by the applicant must provide equivalent protection for human health and the environment.</u> 14

(1) Should specify which rule requirements are subject to granting of variance. Should not grant variances for -070 for protection of wildlife. 9

(2) Should grandfather existing facilities which have a history of non-degradation of surface and groundwaters. Changes to such facilities should require consideration under existing rules on a case-by-case basis. 10

(2) "reasonable time" is too vague; should be a maximum of 90 days for minor matters, 180 days for major compliance issues. Operation of mine should be halted until compliance occurs. 16

340-43-045

(1) Should require HW permits only when wastes exceed hazardous criteria. The hazardous waste criteria for cyanide are expected to be much higher than 0.2 mg/l. 39

(1) Proposed program is contemplated under the Oregon Water Pollution Control Laws - there is an erroneous correlation between water pollution control and solid/hazardous waste regulation. Solid wastes from the beneficiation of ores has been expressly excluded rom Oregon hazardous waste management rules. The proposed rules go far beyond the scope of the Oregon Water Pollution Control Laws to include mining wastes in their purview. 10

(1) OAR 340-101-004 expressly deletes the Bevill Exclusion by references and replaces it with the exclusion of "residues from the extraction and beneficiation of ores and minerals...", thus being more restrictive than the federal requirement by the elimination of processing in the state exclusion. Regardless, the term beneficiation is still

included, which is presumed to retain the definition provided in 40 CFR 261..4(b)(7) for lack of a state proposed definition. In nearly all applications of this definition, mining wastes will fail to meet the criteria for being characterized as hazardous under OAR 340-101-100 and 340-101-033. 10

(1) If intent is to allow an exemption to the criteria in the rules for processing wastes provided that a state hazardous waste permit is obtained, the criteria should be specified under which the DEQ would grant the exemption. 9

(3) Define "processing waste". 17

Intent is confusing. Rules should state that the Department retains authority to permit such operations under either OAR 340-105 or these rules. 14

340-43-050

(2) Use "applicant", rather than "permit applicant". 8

(2) Is an unconstitutional statement; the applicant should be presumed innocent until proven not to be in compliance. 18

(2) The procedure for getting approval of alternative techniques needs to be clearly spelled out. 17

(2) DEQ has not offered any relationship between the prescriptive standards suggested in these guidelines and an improvement in environmental protection. Reference to full-equivalent protection is meaningless absent some method of measuring environmental improvement. Liner redundancy does not equate to environmental improvement. "One effective liner system is equivalent to any number of [in?]effective liner systems in terms to [of?] environmental protection". 10

(2) Some cost-benefit justification should be considered when prescriptively requiring liner systems in excess of what is normally considered adequate minimum design redundancy. 10

(2) Allowing alternative control methods invites legal challenge to agency decisions. DEQ should accept suggestions, however the agency should be under no obligation to make a determination on these suggestions as they relate to a particular permit application. 6

(2) Use "applicant" for "permit applicant". 8

340-43-055

(1) Clarify "inadequately treated". 9

(2) Define "flood plain, wetlands and seismic instability". 39

(2) Define "surface waters" 35

(2) Should delete since leak detection and waste treatment are required. 12

(2) Increase to one mile because dams may break. 26, 33

(2) 200 feet seems arbitrary--dam failure a danger and should be on the order of a mile. 23

(2) Should have a buffer zone of at least 1,000 feet. 34

(2) Requirements in (2) may conflict with (3) 34, 37

(2) 200 feet should read, "one mile"--too many dams break at these operations" 20, 31

(2) 200 foot buffer is inadequate. A minimum 6000 foot buffer should be required, with a greater buffer if drainage configuration merits. 16

(2) A 100 foot buffer would be much more practical than 200 feet. 15

(2) Use "perennial surface waters" as the scientific term for waters that the regulations appear to refer to. 15, 39

(2) Clarify that a buffer is required for both sides of a river or stream, if necessary. and that each shall meet a minimum of 1250 feet. 14

(2) Minimum buffer zone between any chemical process water containment structure or conduit, any ore processing site or any chemical storage site and surface waters should be 500 feet. 6

(3) Contradiction between (2) and (3) needs clarification. 37

(3) Change the text to "...or otherwise geologically unstable areas are <u>structurally adequate to protect the waters of the State</u> during operation, closure and post-closure. 10

(3) Define "seismic impact zones". 8

(2,3) Clarify siting requirements in seismic areas; (2) and (3) seem at odds. 4

(3) Is an unreasonable demand by not being specific about post closure requirements. "Post closure" implies forever, which is longer than these sites will pose a true threat to the environment if measures toward long-term mitigation of toxics are taken. 18

(4) Requirement for secondary containment for all chemical conveyances is too broad--should be limited to cyanide solutions only. 39

(4) Secondary containment for pipes is beyond any industry standard. 7

(5) Should require appropriate bonding for perpetuity. 23

(5) Should require "lifetime bond" since it uses "lifetime of pit" term. 20, 31

(5) The need for a 200 foot buffer between surface water and a facility is questionable. Placement within 200 feet of a stream could be advantageous for other engineering design reasons. 17

(5) Define "acid" by an acceptable pH range related to adjacent springs, wells and groundwater. 15

(5) Add provisions for dealing with acid water accumulation in filled-in pits. 8

340-43-060

(1) Run-off from the site should be regulated under DEQ stormwater criteria. 10

(1) 100 year, 24 hour storm should be the minimum standard. Any other allowed event should be more stringent. 16

(1) Use "excessively or abnormally ladened with sediment". 15

(2) Clarify this requirement. 35

(2) Define "temporary" or delete; too much chance for abuse of this requirement. 16

(2) Use "the mine material be sloped to minimize erosion".

340-43-065

(1) Specify who bears clean-up responsibility if a containment fails. 35

(1) Should be able to use mine or other local professionals. 18

(1) Verify registrations and stamps of registered professionals. 8

(1) Requirement for an <u>independent</u> professional seems overly restrictive. The QA/QC should be independent. Perhaps another section should address a comprehensive QA/QC procedure with independent sign-off. 17

(1) Inappropriate for DEQ to require engineering designs by independent contractors. ORS 469.735(3) expressly states that "any person responsible for complying...shall determine the means, methods, processes....". The requirement for independent contractors is unwarranted and clearly inconsistent with the ORS. 10

(1) Define "registered professional". 7

(1) Option to "independent" professional would be to let the work be done by the mining company and then checked by the independent professional. 8

(2) Define "temporary structures and "materials emplacements". 14

340-43-070

(1) Define wildlife to include "non-game" animals. 37

(1) Provide alternate off-site source of clean water for wildlife, in addition to positive exclusion. 36

(1) Require positive exclusion from chemical sprayers on top of the heap. 34

(1) Allow fine-spray sprinklers which allow for evaporation of excess solution and do not necessarily create ponding. 27

(1) Do not allow netting--require "totally enclosed tanks and ponds" 26
Must use totally-enclosed tanks and ponds to protect wildlife. 20, 31, 33

(1) All tanks and ponds should be enclosed; the heap should be double netted. Fences should be adequate to keep out burrowing wildlife. 16

(1) add "closed containment" to positive exclusion devices 37

(1) Define "wildlife"; use "vertebrate wildlife". 15

(1) Rewrite this section to define positive exclusion more narrowly. The only positive exclusion is complete containment. Fences will not deter small mammals, reptiles or amphibians. Netting is more a deterrent than a positive exclusion, and drip-irrigation emitters do not necessarily eliminate puddling. 14

(1) Require pregnant and barren ponds be in tanks, that pipes replace open ditches, that drip emitters on the top of heaps be covered with loose gravel and that all tailings from milling operations be dewatered and buried in special lined landfill areas. 14

(1) Need complete description of "wildlife". ALL wildlife species must be protected. 13

(1) Wildlife protection is irrelevant with regards to Oregon Water Pollution Control Laws. It may be more appropriate for DEQ rules to include a requirement such as: "Permits issued pursuant to these rules do not release an operator from his obligations under the jurisdiction of applicable agencies, including but not limited to, the Oregon Department of Fish and Wildlife and U.S. Fish and Wildlife Service." 10

(1) Establish priority ranking for protective measures with impenetrable barriers as highest. Allow netting only upon demonstration that impenetrable barriers are impracticable. 9

(1) Move standards in 70 to 005, General Provisions. 9

(1) Plans and construction specifications for positive exclusion methods proposed by an applicant should be reviewed by a reputable, qualified individual or group. 1

(1) Exclusion devices should be monitored regularly for effectiveness. 1

(1) Clarify that non-game species are included in the wildlife definition. 4

(1) Make positive protection means more explicit; require that all process chemicals be totally enclosed in tanks or with synthetic covers. 6

(1) If netting is used, the ponds should be rectangular (3:1 aspect ratio) so they can be netted more easily. 6

(1) Netting should be polypropylene, solid strand and uv-resistant. 6

(1) Drip irrigation should be used instead of spraying and the emitters covered with gravel to prevent ponding. 6

(1) All chemical ponds and conveyances should be enclosed with an 8-foot high cyclone fence with hardware cloth extending two feet below and two feet above the surface. 6

(1) All tailings should be totally detoxified to remove processing chemicals, heavy metals and sulfide. 6

340-43-075

(1) Should specifically refer to type of professional as "engineer, hydrogeologist, etc.". 34, 35

(1) Do not need to require "independent"--company engineers have more in-depth experience and are equally qualified. 12, 39

(4) Requiring tank tightness testing before covering or enclosing is not appropriate because some tanks can be tested by pressurizing. 39
Specify third-part quality assurance in -035 since installation of each process component requires it. 27

Requirements are inappropriate unless they are required for all industries using chemicals in their processes. This section should be limited to exterior tanks where the tank bottoms directly contact soils. 39

340-43-080

(1) Secondary containment needed only for toxic chemicals--change "all". 12

(3)(a) Define "failure" or delete (thickness has no realistic correlation to liner performance. 11

(3c) Require electronic sensors for "immediate leak detection". 26

(3c) 24 hours too long--use electronic means to detect as soon as leak occurs. 23

(3)(c) Need detection sooner than 24 hours--use electronic rather than mechanical detection system. 20, 31, 33

(3)(c) 24 hours is too long for detection of leaks. BAT should be specified and a minimum time should be set; perhaps 8 hours. Applicant should show why 8 hours can't be met. 16

(3)(c) This implies a third containment system in order to be able to detect leaks in the secondary containment system. 11

(3)(d) Delete after "24 hours" in line 6. Operator may be

allowed to prove it was not possible to act or complete removal within 24 hours, but 24 hours should be standard. 16

(4a) Should read "liner". 11

(5a) Should require 110% of capacity, plus estimated amount of run-on from 25 year storm. 16

(5c) 24 hours too long--use electronic sensors. 26

(5c) Eliminate this section (see 3c). 23

(5c) Change section because 24 hours too long. 20, 31

(5c) 24 hours is too long for detection of leaks; require same as my comment in (3)(c). 16

(6) Use "inspected on a daily basis when in use. 15

Should be provisions for bringing existing mining operations into compliance with regard to secondary containment. 16

340-43-085

(3) Change wording "...of this section, and shall provide monthly summary reports to the department. 14

Require periodic inspections of structures, tanks and other facilities by an independent, registered consultant who makes written findings. 16

Inspection timing should be determined by the type of system rather than by regulation. 7

340-43-090

(1) Must specify requirements for on-off pads. 26

(1) "variations" is too open-ended and potentially useful to companies determined to bypass the rules. 23

(1) Should identify the possible "variations". 20, 31, 33

(1) Define "variations". 16

(2), (6) Do not allow lesser standards for temporary, overflow or emergency structures. 16

(2) Should not allow lesser requirements for cyanide containing structures. 26

(2) Should eliminate lesser requirements for emergency ponds. 20, 31, 33

(3) Table I--operating volume may be low since solution concentrations and slime precipitation must be considered. 12

(3) clarify Table I--to remove ambiguity that both ponds should have the required capacity. 38

(3) Impractical and unnecessary to design process water ponds for containment of rinse volumes. Process waters contained in solution ponds can be detoxified and recirculated as rinse water should it be necessary to rinse a heap prematurely. 10

(3) Should require containment volume for the anticipated operating volume, the design storm (100 year, 24 hour) and two feet of freeboard. Require excess capacity for drain-down, depending upon availability of back-up power sources. The rain on snow event should be required only when there is increased risk to human health or the environment. 10

(3) Delete rinse volume--assume it will be the operating volume. 39

(3) The projected draindown volume and the climatic surge volume should be determined by the applicant and only the largest volume required. 39

(4) Triple liner and 36" of clay are unnecessary--double liner and 12" works well. 28

(4) Change design requirements for pads to more closely reflect current standards and practice in neighboring states. 24

(4) Include provision for more flexibility in pad design if site conditions so warrant. 24

(4) Add a figure to describe the liner system. 8

(4) Prudent minimum design criteria should be a synthetic primary liner overlying an effective leak detection and removal system. The secondary liner should be equivalent to 12 inches of compacted soil with a maximum permeability of 10-6 cm/sec. 10

(4) The minimum synthetic liner thickness should be specified. 11

(4) Define "free flow", specify the head on the liner. 11

(4) Define the basis for the one-week requirement. 11

(4) The liner designs are too restrictive--should allow triple liner with 36" base or LDS as described or monitoring wells. 38

(4) Triple liner is unnecessary and excessive. NRC doesn't require this degree of caution. Double liner is more than adequate. 15

(4) "Maximum permeability" should read "coefficient of permeability". 11

(4) Leak detection system performance requirement appears to be unrealistically conservative. DEQ should provide the reasoning behind establishing this prescriptive requirement. 10

(4) 36 inches is excessive; 12 inches is protective. 14

(4) A 36" clay liner is excessive and probably unworkable. 7

(4) Triple liners are overkill--should allow soil attenuation of cyanide. 32

(4b) Minimum permeability of synthetic liners should be 10E-7 cm/sec. 26

(4)(b) drainage nets or other alternates to the specified 12 inches should be considered. 11

(4c) "one week" too long for detection of leaks. 23

(4c) Specify the head. 8

(4)(c) The intention of this regulation is to require a standard (single) composite liner. The work "double" should be deleted to prevent confusion with the term "double composite liner". 11

(4)(c) Specify the head. 8

(4) Triple liner is excessive--fails to take natural degradation processes in surrounding soil. 22

(5) Leak detection requirements excessively stringent and fails to set realistic points of compliance at a reasonable distance from the facility. 22

(5)(b) and (c) List the minimum thickness as is done in (4)(b). 8

(4)(c) & (5)(c) Should use two leak detection systems operating independently and simultaneously between the three pad liners. Electronic moisture sensors are far superior to mechanical devices. 19, 20, 26, 31, 33

(4,5) Leak detection sensors should be placed between both sets of liners, not just between middle and top liners. 16

(5a) 36" of 10D-7 clay is overkill 35

(5b) Specify the minimum thickness. 8

(4,5,7) Rules require more protection from puncture and leakage from the pad than the pond and the head is limited to 2 feet on the pad. Should be some trade-off in liner construction. 17

(5c) Specify the head. 8

(6) Do not allow emergency ponds--they would be used too often. 26, 33

(6) Time limit should be stated for allowable use of emergency ponds. 1

(6) Make "infrequently and for short periods of time" more specific. The ponds should be used only in emergency situations. 9

(6) Define "infrequently" and "short periods of time". 11

(6) Change wording; "...may be constructed as an [alternative] back-up to larger pregnant and barren ponds. The emergency pond may be constructed to a lesser standard which still ensures protection of human health and the environment,....and for time periods not to exceed 48 hours [short periods of time]. Add, All uses of the emergency pond shall be reported to the department immediately. 14

(7) Leak detection is just as important for emergency ponds. 14

(8) Should not limit depth to 24 inches since pond liners are the same and depth is not limited. 15

(9) Operator should conduct quarterly emergency drills which are observed by an independent observer making a written analysis of the drill; operators who fail to train should be shut down until they demonstrate capability to respond to emergencies. 16

(9) This rule needs more definitive standards regarding protection of human health and the environment during temporary closure and should define a limit so a permittee cannot walk away from a site for years.. Require prior notice of temporary closure and require ongoing maintenance, monitoring and reporting during closure. 14

(10) Requirement for leak repair "at first opportunity" too vague. Operation should immediately cease when leak is

detected and the fix should be inspected by DEQ prior to resumption of operations. 6

(10) Change wording; "...actual liquid depth shall [either be repaired at the first opportunity] be reported to the department immediately and repaired under department supervision and [or] ...below the specified rate until repair is certified by the department to be complete. [The Department shall set a time schedule for repair with the permittee, if necessary.] 14

(10) Use EPA guideline for acceptable leakage (Background Document on Proposed Liner & Leak Detection Rule) of 2500 gallons per day per acre which requires closure or repair. 39

(10) Operation of pad should be shut down while leak is being repaired. 16

(10) Should suspend operations at once until repairs are made. 23, 26

(10) Replace entire section with "Operations shall be discontinued while the pad is unloaded and the detectable leak is repaired" 20, 31, 33

(11) Clarify intent of last sentence. Suggest "If the spent ore is shown to be potentially acid generating, the permittee shall submit a plan to prevent acid generation after heap abandonment and reclamation." 17

(11) Should not be left to operator to determine if spent ore will be acid generating. Should be a timeline for submitting and implementing plan to deal with acid generating spent ore. 16

Coefficient of permeability and thickness are equivalent trade-offs with soil/clay liners. 11

No basis for the prescriptive liner system requirement, nor any relief from the prescriptive requirement based on site-specific conditions. 10

Allow lower design standards for smaller leach operations; e.g., a pad with 15' of ore does not need the same depth of underlayment as one with an ore height of 90'. Set requirements on tonnage/area basis. 24

A figure would be helpful to describe the liner system. 8

Level of containment is unreasonably high; the minimum prescriptive standard and evaluation of acid generating waste is inadequately addressed. 30

(1) Liners not needed if chemicals and metals are removed. 10

(1) Delete "second consideration". The process indicated by "first consideration" is the only acceptable process for detoxification. 16

(1) Unnecessary and excessive to detoxify since pond is lined. 15

(1) Should spell out why prefer removal over detoxification. 37

(1) Eliminate "second consideration"--should be no second consideration 20, 27, 31, 33

(2) Values for ANP/AGP should serve as "trigger values" to initiate kinetic testing. The results of the kinetic tests should determine whether or not acid generation is likely to occur. 10

(3) A test is needed to demonstrate that non-acid-generating tailings also are not toxic metal producers. Use TCLP 1311. 17

(3) EPA Method 1312 (Synthetic Precipitation Leaching Procedure more nearly simulates processes expected to occur with mine wastes and tailings than TCLP 1311. 10

(3) Should require 36 inches, not 12 inches. 16

(3) Specify the criteria DEQ will use to determine whether disposal of tailings in slurry form will be allowed. Allow only upon demonstration that disposal in de-watered form is impracticable. Amend (3) to require criteria of Table 2 and of 070 -- both must be met. 9

(3) Tables 2 and 3 are generic values. The limits should be determined on a site-specific basis. 7

(3) All values in Tables 2 and 3 correspond to the EPA recommended levels using either method except copper and zinc. The maximum EPA values for these two elements are 20 and 100 times higher that the values in Tables 2 and 3. There is no apparent basis for this selective discrimination on copper and zinc. 10

(3b) The criteria in Tables 2 and 3 will not prevent wildlife deaths with exposure to the slurry or dewatered solids. (data was provided) 14

(3b4b) Should use EPA Method 1312 instead of 1311. 12

(3b4b) Should use a multiplier of 100 for cyanide also--allow 20 mg/kg for WAD cyanide and 1000 mg/kg total cyanide. 12

(3b4b) Allow material passing 1311 (or 1312) to be placed in an unlined pond or a pond with a minimal 12 inch impervious clay liner. 12

(3b4b) Criteria for tailings impossible--because they are below the average crustal abundance for many of the metals. 22

(3)(c) Should read "minimum thickness of 36 inches" 20, 23, 26, 31

(3)(c) Liner not required under non-toxic, dewatered (or even wet) tailing structure. Should allow drainage; specify whether the collection system is a surface or subsurface structure. 17

(4) Soils in the area contain "trace elements" at levels greater than those proposed for tailings (e.g. arsenic at 100-500 ppm, background is 10-12 ppm) 21

(4) Clarify objective of this section. Alternative is to screen the tailings for sulfide and heavy metals. If neither are present, allow disposal under DOGAMI regulations with attention to long-term stability, re-vegetation, etc. 17

(4) If toxic metals were present in the liquid, must address protection of wildlife. The standards should address more than cyanide concentration in the tailings water and should be worked out with ODF&W. 17

(4) If the solid portion exceeds the TCLP limits or if acid generation is possible, a lined impoundment with long-term stability would be the appropriate control technology. 17

(4) The present draft implies that any rock with metal levels exceeding the TCLP criteria would fall under Oregon's hazardous waste rules. This should be very clearly stated if this is the intent. 17

(4) The screening method for acid and toxics needs careful evaluation. Total sulfur determinations should be done with LECO furnace methods; other methods fail to detect low levels of pyrite that can readily oxidize. 17

(4) For low levels of pyrite, a specific amount of $CaCO_3$ should be specified rather than the ratio; suggest somewhere between five and 20 tons of $CaCO_3$. 17

(4) Should use kinetic testing, especially for low levels of pyrite. 17

(4) Total sulfur (sulfide) of 1 g/kg is too low and doesn't measure the susceptibility of rocks to contribute acid; use another method. 15

(4) Sulfide or pyritic sulfur appropriate indicator of acid generating potential--determine by ASTM Method 02493 or difference between total and sulfate sulfur. 10

(4) Define "separate facility"--Arlington or on-site? 8

(4) Dry tailings are emphasized; good argument can be made for permanent storage of saturated tailings. 17, 22

(4a) Define "separate facility" (on-site or off-site?). 8

(4b) Zinc requirement is too low--secondary drinking-water standard is 5 mg/l. Operations using Merrill-Crowe zinc-dust precipitation may have 200 mg/l or higher zinc in the tailings. Delete zinc from Tables 2 and 3. 39

(4b) Tailings detoxification levels of Tables 2 & 3 are not technically or economically possible--Nevada considers 20-50 mg/l WAD as being detoxified. 39

(4b) This section seems to allow (a) to be violated--is that the intent? 8

(4b) Cyanide removal is a new and unproven technology compared with INCO SO2/air. SCN- and CNO- should be removed from Table 2 because there is no basis for regulating them and they are produced by the process. 40

(4b) Only known technology for removing SCN- and CNO- is chlorine which is discouraged in the rules. By products of chlorine are ammonia and possible chlorinated compounds, both of which can be more toxic than SCN- or CNO-. 40

340-43-100

(2) Change wording to: The closure plan must be compatible with the reclamation plan on file with DOGAMI. 8

(4) Allow pond liners to be buried in place rather than removing them to another disposal site. 28

(4) Should regulate mining under RCRA-D

(4)(b) Specify type of cover and that it will withstand seismic events and penetration by large roots. 20, 26, 31

(4)(b) Heap cover will prevent natural degradation of cyanide. Heaps also contain minerals, water and fertilizer

that help sustain vegetation better than an impermeable cover. 18

(4b) If spent ore is detoxified to the rule requirements, should not have to cover. Soil cover will deplete thin-soil areas of Oregon. 38, 39

(4)(b) and (4) should include the word "native" to specify vegetation to ensure that the species are adapted to the site. 34

(4)(c) Sludges should be left in heap ponds as an appropriate means of disposal. 18

(4)(b) Should allow some spent and detoxified ore to be pushed off the edge of the pad to facilitate re-contouring for reclamation. Clarify last sentence. 17

(4) Low-permeability and soil layers will not provide any erosion protection for the coarse material on the pad. 17

(4) The cover to prevent water infiltration should be specified. Should be designed to withstand penetration by roots, seismic events and other likely intrusive events. 16

(4) After a heap is detoxified to the criteria of Table 4, it should be considered to meet closure requirements. Unnecessary to require a low-permeability layer over the material unless there is a toxic-metal issue. The environment is not well served by "encapsulating" residual low-levels of cyanides unless such measures are necessary to contain other materials deleterious to the environment. 10

(4) Should the heap need a cover if it has been detoxified? 4

(4) Requirements are too vague; the heaps and mining waste products should be totally detoxified and backfilled, otherwise should require strict containment. 6

(4) How will water infiltration be monitored? 4

(4) Table 4 is generic values. The limits should be determined on a site-specific basis. 7

(4)(c) Why remove the liner and bury it someplace else? 7

(4c) Define "inert material". 8

(5) Tailings should not be covered for same reasons given in (4). 18

(5) Define the "low permeability layer" 20, 26, 31

(5) Requiring low-permeability covers on non-toxic materials could, in some locations, be counter productive. Letting water drain through could be preferable to having it flow over the edges. 17

(4)(a), (5) Should require analysis for heavy metals, not just for residual cyanides. 14

(6) Should require a "lifetime" bond. 20, 26, 31

(6) Should require a bond to make repairs if containment fails. 16

(4)(b), (5) and (6) Terminology is too vague. Requirement that the closed facility should be environmentally stable for "an indefinite period of time" is too broad to be able to develop a post-closure plan and to determine financial assurance requirements for post-closure monitoring. 11

340-43-110

30 years too long, given the other protective provisions of the rule. 38

Require monitoring for 30 years; if leakage occurs, monitor for 30 years from the date of last pollutant release. 34

Monitoring for 30 years is out of the question-unnecessarily expensive; why not 2 years? 28

Replace "may" with must. 23, 26

In line 1 should read permit must be continued. 20, 31

In line 1, delete "may" and insert "must"; all costs of monitoring should be borne by operator and guaranteed by an adequate bond. 16

Change wording: "...permit [may] shall be continued ...for a [nominal] period of at least thirty...and [would] shall include...monitoring by the permittee ..." 14

Define "periodic" monitoring. 13

If mining companies are allowed to monitor their own operations, DEQ should have the authority to conduct un-announced quality control reviews of monitoring methods and results. 13

A 30 year post-closure monitoring period is inconsistent with the non-hazardous nature of most mining waste. Require post-closure monitoring for a pre-determined period following

demonstrated site stabilization, perhaps consistent with a permit renewal term of five years. 10

Monitoring period should be based on the system and technology (rather than an arbitrary 30 years). 7

340-43-115

Limit "toxic" only to chemicals, materials and wastes identified as "hazardous" under 40 CFR Parts 260 and 261. 12

(1) Change wording; "...the permit and in a manner that will not adversely impact human health and the environment. 14

(2h) Add after word wildlife, including non-game species. 37

(2) Disposal plan should include analysis of potential impacts to Areas of Special Concern and to Fisheries, as well as to wildlife and sensitive plants. 13

(2) Require demonstration that disposal of wastewater will not adversely affect wildlife, sensitive plant species or aquatic life. 9

340-43-120

(1) Change to "pits must be backfilled". 23

(1) Eliminate present wording. Add requirement that pit must be refilled and aquifers must be restructured. 20, 31, 33

(1) Mining sites, aquifers and pits must be fully restored. 19

(1) Add requirement that pond be fenced for wildlife protection. 34

(1) Delete. This section must require the restoration of pits by filling in with detoxified wastes, reclamation of aquifers and surface areas. 16

(2e) Requirement of liner under the pond seems conditional and doesn't address site conditions. 18

(2)(b) This would leave even greater scar and would place more acid-generating material in a disposal facility. 14

(2c) Has potential for failure of the cap, especially on steep slopes. 14

(2d) Requires perpetual treatment with related costs and potential for failure. 14

(2e) Has potential for failure that requires perpetual monitoring and remedial action, as well as exclusion from wildlife access. 14

(2) Only (a) and (f) should be allowed. 14

(2f) Change wording; "...of the pit(s) [above the water table] to the level necessary to [reduce] prevent oxidation of residual acid-generating materials. 14

(2e) Omit possibility of a liner under the pond in a pit; it may prevent groundwater contamination but a toxic pond could endanger wildlife. 1

(2f) State criteria used to decide what materials will be suitable for backfill material. 4

(2f) Pit backfilling is necessary in all cases to protect wildlife and water quality and should be a condition of mining. 6

(2f) Requirements for backfilling should be spelled out with strict guidelines which will also help DEQ avert legal challenge for arbitrariness. 6

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9/18/91

LIST OF REFERENCED COMMENTATORS

1. U.S. Dept. of the Interior
   Fish and Wildlife Service
2. Bob Powne
3. Malheur Mining
4. Native Plant Society of Oregon
5. Cornelia DuBois
6. National Wildlife Federation
7. E. L. Hunsaker III
8. Oregon Water Resource Department
9. Oregon Department of Fish and Wildlife
10. Knight Piesold and Co.
11. Jim Coskey
12. Simplot Resources
13. The Wildlife Society
14. Oregon Environmental Council
15. Chris Broili, Marvin Niccum
16. David M. Johns
17. Oregon Department of Geology and Mineral Industries
18. Loren A. Lovejoy
19. Thea Weiss Tarbet
20. Fred Farrand, Pat Thomassen
21. Phelps Dodge Mining Company
22. Ernest K. Lehman & Associates
23. Michael A. Sequeira
24. John H. Cogswell
25. Teck Corporation

26. Concerned Citizens for Responsible Mining
27. U.S. Department of the Interior, Bureau of Mines
28. City of Nyssa
29. Orval R. Layton
30. Sunshine Mining Company
31. Ralph Steils
32. Horizon Gold Corporation
33. Willamette University
34. Valerie R. Elliot
35. Dan Maws
36. Grant County Conservationists
37. Sierra Club
38. Glenbrook Nickel Company
39. Merco Minerals Company
40. INCO Exploration and Technical Services, Inc.

RESPONSE TO PUBLIC COMMENT REGARDING PROPOSED DEQ CHEMICAL MINING RULES (OAR CHAPTER 340, DIVISION 43)

Comment: Public Policy Issues

Considerable testimony was received on issues that are essentially "public policy" issues; e.g. whether Oregon should allow chemical mining at all, what should be the trade-offs between the possible adverse environmental impacts of chemical mining or open-pit mines and economic development, etc.

Response: The Department has not made recommendations on these public policy issues. The following comments and responses are directed primarily toward the technical issues raised by the proposed rules.

Comment: Department's Regulatory Authority

Commentators questioned the Department's authority to regulate chemical mining under its water-quality rules, rather than its solid-waste rules. It was suggested that the Department wait until EPA (the US Environmental Protection Agency) promulgates rules to govern chemical mining. It was also suggested that DOGAMI (Oregon Department of Geology and Mineral Industries) or the federal agencies should regulate mining, rather than the Department.

Response: The EQC (Environmental Quality Commission) has reviewed its regulatory responsibilities relative to mining and environmental protection and has concluded that the potential for adverse environmental impact resulting from large-scale chemical mining, especially mining of the open-pit type, is great enough that the Department should be regulating such mining.

The EQC requested that the Department propose rules to regulate chemical mining. The Department believes it is inappropriate to wait for EPA to promulgate rules, since it is not certain when, or if, EPA will do so. Further, the Department considers that the greatest potential adverse environmental impact from chemical mining is to waters of the state and has, therefore, chosen to propose regulation of mining under its water quality protection authority.

The proposed rules exempt chemical mining operations that would otherwise need one, from obtaining a state hazardous waste treatment or disposal permit if process wastes are treated to the criteria contained in the proposed rules.

The Department understands that it has environmental protection responsibility on federal lands as well as state and private lands and recommends the exercise of that responsibility in the case of mining rather than relying on the federal agencies involved to provide the necessary environmental protection regulation.

Comment: Recognition of Environmentally-Sensitive Special Areas

Some commentators felt that the proposed rules should give consideration to special areas of concern; e.g., State Parks, Research Natural Areas, BLM areas of Critical Environmental Concern, Endangered Species habitat, State Natural Heritage Conservation Areas, etc.

Response: The proposed rules do not single out any one type of environmental situation. The proposed rules attempt to adequately address all environmental concerns, regardless of their particular setting.

Comment: Permit Application Information and Baseline Data Collection

Some commentators were concerned that the requirements for baseline data and environmental characterization were too extensive and duplicated the data required by DOGAMI and the federal EA (Environmental Assessment), EIS (Environmental Impact Statement) process.

Other commentators recommended that all environmental data be collected and verified by the Department or a third-party contractor to ensure the validity of the data.

Response: The proposed rules are not intended to require unnecessary duplication of data and other information required in its permitting process. The rules provide that the Department will accept applicable data that permit applicants have gathered to fulfill their other permitting requirements.

The Department proposes to continue to rely on its basic system of permittee self-reporting of data and information and will assume the data and information are correct unless proven otherwise.

Comment: Plans Review by the Department

There was some comment regarding the purpose, scope, and timing of the Departmental plan review process referred to in the proposed rules.

Response: The Department believes that its plan review process and responsibilities are effective and adequately described elsewhere in its rules and has not proposed to change them in this set of rules.

Comment: Grandfathering Provision

It was suggested that the rules include a "grandfathering" provision for existing facilities which may be successfully operating with a lesser degree of design containment.

Response: The proposed rules provide that the Department may, in accordance with a written compliance schedule, grant reasonable time for existing facilities to comply with the proposed rules.

Comment: Site-Specific Flexibility and Formal Variance from the Proposed Rules

A significant part of the comment related to the desirability on the part of potential permit applicants for site-specific flexibility in applying general performance-based rules and the desirability on the part of others in rigidly applying very prescriptive rules.

Response: The Department has attempted to strike a compromise in its proposed rules between rules that are performance-based and those that specification-based. The rules contain design, operation and closure guidelines that provide a relatively high degree of specificity. On the other hand, the Department recognizes that each site can differ significantly from the next and has acknowledged this in the proposed rules by allowing alternate environmental protective means if the permit applicant can demonstrate that they provide equivalent protection.

The Department has deleted the variance provision in this version of the proposed rules because it feels there is sufficient flexibility in the rules to allow it to fit the requirements of the rules to the situation. The Department is regularly called upon to make decisions regarding permits that are based on its best professional judgment since it is impossible to write rules that are sufficiently complete and explicit to address every situation.

Comment: Siting Prohibitions

Considerable comment was made on the prohibitions against siting mine-waste facilities in areas of seismic instability and on the appropriate width of the buffer zone between facilities and surface waters. Suggestions on the appropriate buffer zone width ranged from the proposed 200 feet up to a mile or more.

Response: The Department has deleted prohibitions against siting mine-waste disposal facilities in areas of seismic instability in the present proposed rules because such areas are hard to define and because dams and other retaining structures must be designed to accommodate anticipated seismic loadings anyway. The general prohibitions against siting facilities within 200 feet of surface water and in wetlands are retained.

The Department has retained the 200-foot minimum width as being sufficient to provide at least some margin of safety from readily-identifiable spills or leaks.

Comment: Requirement for Design by Independent Professionals

Considerable comment was directed at whether an "independent" professional person should be required for designing retaining structures, foundations, and materials emplacements. Some mining companies regard their registered professionals as being competent and qualified by experience to perform such design work. On the other hand, considerable comment urged the added "safety factor" of a qualified professional who is independent of the permittee.

Response: The Department recommendation proposes to delete the "independent" requirement on the belief that professional registration and experience are more important than whether the person is "independent" of the permittee.

Comment: Wildlife Protection

Appropriate means of protecting wildlife against the toxic effects of chemical processing solutions was a topic of major comment. The proposed rules required positive exclusion of wildlife from chemical processing solutions and wastes as the only sure means of preventing wildlife mortality. Commentators asked for a definition of wildlife, and variously objected to or approved the positive exclusion requirement.

Response: The Department has not proposed to define "wildlife" but to continue to use the word in its broadest sense. The Department has modified its positive exclusion provision by requiring exclusion only from those solutions and wastewaters that pose a threat to wildlife under the rules of ODF&W (Oregon Department of Fish and Wildlife). Passage of HB 2244 by the 1991 Oregon Legislature required ODF&W to establish standards by rule for wildlife protection.

The Department has defined "positive exclusion" in the present proposed rules as the use of pipes, fences, netting covers and heap-leach drip-irrigation emitters or covered emitters. Hazing was originally prohibited but the

Department modified the wording in the rules to allow hazing as an acceptable means of wildlife protection, in addition to positive exclusion.

Comment: Requirements for Containment Tanks

The earlier proposed rules contained a section on requirements for tanks used for containment of chemicals. Little comment was received regarding tanks except that tanks were generally regarded as being more protective than lined ponds.

Response: The Department has deleted the entire section on tanks from the present proposed rules. The Department feels it has adequate authority through its design and specification review process to ensure the proper installation and operations of tanks containing chemicals. It was also felt that inclusion of the rather extensive section on tanks tended to confuse the proposed rules and make them more difficult to understand.

Comment: Lesser Design Standards for Emergency Ponds

A number of commentators were concerned that emergency overflow ponds should not be allowed or should be designed to as strict a standard as the working ponds.

Response: The Department has retained provision for emergency ponds to be used in a temporary fashion and designed to a lesser liner standard than the working ponds. Emergency ponds provide an important margin of safety against accidental flooding and the Department is confident that it can prevent abuse of the intended temporary use of the ponds.

Comment: Heap-Leach Facility Liner Requirements

Extensive comment was received on the proposed design criteria for heap-leach pad liners. Commentators generally took the position that the proposed "triple liner" configuration consisting of a low-permeability soil/clay bottom liner and two full-membrane synthetic liners with a leak collection system in between was barely adequate or grossly overprotective.

Response: The Department has modified its original requirement by allowing a double-liner configuration consisting of a single synthetic liner in contact with a low-permeability soil/clay bottom liner. A leak collection system is still being required between the synthetic liner and the bottom liner. It is believed that the structural instability of the triple liner system is a greater liability than the added leak protection is an asset.

Comment: Repair of Heap-Leach Leaks

Considerable comment was received on the difficulty of determining the acceptable leak rate that the Department specified.

Response: The Department has continued the repair requirement and has included in the proposed rules the graduated response program suggested by the Oregon Mining Council.

Comment: End-of-Pipe Treatment of Mill Tailings

The proposed detoxification requirement and accompanying numeric detoxification criteria for mill tailings caused extensive comment. Comment ranged from rejection of the requirement as being impractical and unnecessary to full approval.

Response: The Department has retained the requirement for end-of-pipe detoxification but has taken a more flexible approach in the present proposed rules on how and to what degree the tailings must be detoxified. The permittee is required under the present proposed rules to conduct tests on their tailings to determine the lowest practicable concentration of WAD (weak-acid dissociable) cyanide attainable. The Department has, however, proposed a maximum allowable concentration of WAD cyanide of 30 ppm (parts per million) as a technology-based criterion.

The 30 ppm WAD cyanide criterion is not intended to be protective of wildlife. The Department will rely on ODF&W to determine the appropriate wildlife protection criteria for chemical mining processing solutions and wastes.

The proposed rules specify that mill tailings shall pass the EPA TCLP (toxicity characteristic leach procedure) Method 1311 test or else they will be considered a state hazardous waste and must be regulated under the state hazardous waste program.

Comment: Mill Tailings Pond Liner Requirement

Some commentators objected to the proposed liner requirements on the basis that they were over-protective and expensive. Other commentators supported the liners as being appropriate for protection against leakage.

Response: The Department has retained the proposed double liner system for tailings, with no distinction as to whether the tailings are potentially acid-generating or are deposited as a slurry or as dewatered solids. The thickness requirement for soil/clay liners has been reduced from 36

inches to 12 inches. The Department considers the reduced soil/clay thickness to be adequately protective when considered in conjunction with the closure requirements.

Comment: Heap-Leach Facility Closure

Some commentators objected to the separate detoxification criteria for spent ore on the heap and the rinsate. The criteria were considered to be too stringent and too difficult to measure since generally-accepted standard analytical methods are not available. Other commentators supported the requirements as being appropriate.

Other objections related to the requirement for cover layers on the heap. The argument was made that cyanide detoxification could better take place if the heap were left open to the elements.

Response: The Department has simplified the heap detoxification requirement by specifying only a maximum allowable WAD cyanide rinsate concentration of 0.2 ppm. It is assumed that once the rinsate reaches 0.2 ppm, only the relatively stable cyanide compounds will be left in the heap.

The spent ore is required to pass the EPA TCLP Method 1311 test or it will be considered a state hazardous waste.

The Department has also retained the cover requirement as an appropriate means of preventing possible long-term acid-water generation and release of cyanide and toxic metals by water and oxygen infiltration.

Comment: Mill Tailings Disposal Facility Closure

Comments regarding closure requirements for the tailings facility were generally the same as those for closure of the leach heap.

Response: The Department continues to assume that the best means of preventing long-term release of toxic materials from a closed tailings facility is end-of-pipe detoxification prior to disposal, addition of acid-neutralizing materials to the tailings, if necessary, and installation of a composite cap that will exclude infiltration of water and oxygen. These requirements have been continued in the present proposed rules.

Comment: Post-Closure Monitoring

Comments on the period for post-closure monitoring of potential releases from the disposal facilities ranged from nothing to 30 years and more.

Response: The Department will require post-closure monitoring in its permit with regular review of the data to determine the effectiveness closure. If toxic leakage problems arise, the Department has the authority to modify the permit to include remedial action to solve the problem. The present proposed rules specify that the Department may continue its permit in effect for up to 30 years.

The Department will also coordinate closure monitoring with DOGAMI and consult with them on retention of security funds that may be needed for remedial action to correct problems from ineffective closure.

Once closure is considered to be effective, the permit may be terminated.

Comment: Open-Pit Closure Requirements

Considerable interest was shown by commentators on the guidelines for closure of the open pit. Most of the comment was directed at additional requirements, especially backfilling of the pits and restructuring of affected aquifers.

Response: The Department has generally addressed the potential problems of acid-water formation and collection in residual open pits in the draft rules by requiring the permittee to estimate from the site data what the potential for problems is and to address several specific strategies for possible alleviation of the problem.

Complete backfilling of open pits is not necessarily a water-pollution prevention method and thus the Department has not included backfilling as a requirement per se. Other protective regulations exist (DEQ groundwater protection rules) and WRD's (Oregon Water Resources Department rules) that also relate to potential water pollution problems arising from residual mining pits.

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Key:
Added Text
~~Deleted Text~~

Attachment D

RULES PROPOSAL:

OREGON ADMINISTRATIVE RULES

CHAPTER 340

DIVISION 43

CHEMICAL MINING

~~**MINING OPERATIONS WHICH USE CYANIDE OR OTHER TOXIC CHEMICALS TO EXTRACT METALS OR METAL-BEARING MINERALS FROM ORES**~~

OAR 340-43-005	Purpose
OAR 340-43-010	Scope
OAR 340-43-015	Definitions
OAR 340-43-020	Permit Required
OAR 340-43-025	Permit Application ~~Information~~
OAR 340-43-030	Plans and Specifications
OAR 340-43-035	Design, Construction, Operation and Closure Requirements
~~OAR 340-43-040~~	~~Granting of Variances from Specified Requirements~~
OAR 340-43-040~~045~~	Exemption from Permits for Hazardous Waste Treatment or Disposal Facilities

GUIDELINES FOR THE DESIGN, CONSTRUCTION, OPERATION AND CLOSURE OF OPERATIONS SUBJECT TO THESE RULES

OAR 340-43-045~~050~~	Purpose

OAR 340-43-~~050~~055	General Provisions
OAR 340-43-~~055~~060	Control of Surface Water Run-On and Run-Off
OAR 340-43-~~060~~065	Physical Stability of Retaining Structures and Emplaced Mine Materials
OAR 340-43-~~065~~070	Protection of Wildlife
~~OAR 340-43-075~~	~~Guidelines for Design and Installation of Vat Leach Tanks, Vessels and Secondary Containment Systems~~
~~OAR 340-43-080~~	~~Guidelines for Containment and Detection of Releases from Vat Leach Tanks, Vessels and Secondary Containment Systems~~
~~OAR 340-43-085~~	~~Guidelines for Inspection of Vat Leach Tanks, Vessels and Secondary Containment Systems~~
OAR 340-43-~~070~~090	Guidelines for Design, Construction, and Operation of Heap-Leach Facilities
OAR 340-43-~~075~~095	Guidelines for Disposal of Mill Tailings
OAR 340-43-080	Guidelines for Disposal or Storage of Wasterock, Low-Grade Ore and Other Mined Materials
OAR 340-43-~~085~~100	Guidelines for Heap-Leach and Tailings Disposal Facility Closure
OAR 340-43-~~090~~110	Post-Closure Monitoring
OAR 340-43-~~095~~115	Land Disposal of Wastewater
OAR 340-43-~~100~~120	Guidelines for Open-Pit Closure

PURPOSE

340-43-005

The purpose of these rules and guidelines is to protect the quality of the environment and public health in Oregon by requiring application of "... all available and reasonable methods...", Oregon Revised Statutes (ORS) 468.710, for control of wastes and chemicals relative to design, construction, operation, and closure of mining operations which use

cyanide or other toxic chemicals to extract metals or metal-bearing minerals from the ore or which produce wastes or wastewaters containing toxic materials.

SCOPE

340-43-010

These rules and guidelines apply to chemical process mining operations which use chemicals to extract metals from the ore. ~~These rules and guidelines apply to mining operations which use chemicals to extract metals or metal-bearing minerals from the ore except for small mineral extraction operations using froth flotation.~~

~~The rules do not apply to mining and mineral extraction operations which do not use chemical extraction methods. Examples of mining activities to which the rules do not apply are aggregate mines and those placer mines which use only gravity separation methods. Any mining operation, however, that produces waste rock or spent ore that has the potential for forming acidic leachate may be covered by one or more of the provisions of these rules.~~

~~Non-mining operations, such as smelters, are not covered by these rules.~~

DEFINITIONS

340-43-015

Unless the context requires otherwise, as used in these rules:

(1) "Chemical process mine" means a mining and processing operation for metal-bearing ores that uses chemicals to dissolve metals from ores.

(2)~~(1)~~ "Department" means the Department of Environmental Quality.

(3)~~(2)~~ "Guidelines" means this body of rules contained in 340-43-050 through 340-43-120.

(4) "Positive exclusion of wildlife" means the use of such devices as tanks, pipes, fences, netting, covers and heap-leach drip-irrigation emitters or covered emitters.

~~(3) "Slurry" means a suspension of ore or waste materials in water.~~

(5)~~(4)~~ "Tailings" means the spent ore resulting from the milling and chemical extraction process.

PERMIT REQUIRED

340-43-020

(1) A person proposing to construct a new chemical mining operation, commencing to operate an existing non-permitted operation, or proposing to substantially modify or expand an existing operation shall first apply for, and receive, a permit from the Department. The permit may be an NPDES (National Pollutant Discharge Elimination System) permit if there is a point-source discharge to surface waters or a WPCF (Water Pollution Control Facility) permit if there is no discharge. Consideration may be given to site-specific conditions such as climate, proximity to water, and type of wastes to establish the final permit type and requirements for the facility.

(2) The permit application shall comply with the requirements of OAR Chapter 340, Divisions 14 and 45 and be accompanied by a report that fully addresses the requirements of this Chapter ~~OAR 340, Division 43~~.

PERMIT APPLICATION ~~INFORMATION~~

340-43-025

(1) The permit application shall fully describe the existing site and environmental conditions, with an analysis of how the proposed operation will affect the site and its environment. The Department shall, at a minimum, require the information required of an applicant for the DOGAMI consolidated application as required under Section 13, Chapter 735, 1991 Oregon Laws. The Department will also use the information contained in NEPA (National Environmental Policy Act), EA (Environmental Assessment), or EIS (Environmental Impact Statement) documents, if they are required by the project, as partial fulfillment of the requirements of this paragraph. ~~The Department may accept the information and operating plan required by DOGAMI (Department of Geology and Mineral Industries) under OAR 632, Division 35, or the information contained in a NEPA (National Environmental Protection Act), EA (Environmental Assessment), or EIS (Environmental Impact Study) document as partial fulfillment of the requirements of this paragraph.~~

(2) The permit application shall, in addition to the information ~~required by the application forms,~~ described in Paragraph (1) above, include the following information, unless the information has been otherwise submitted:

~~(a) Site description;~~

~~(b) Site map;~~

(a)~~(c)~~ Climate/meteorology characterization, with supporting data;

(b)~~(d)~~ Soils characterization, with supporting data;

(c)~~(e)~~ Surface water hydrology study, with supporting data;

(g)~~(f)~~ ~~Surface~~ Characterization of surface water and groundwater quality;

(h)~~(g)~~ Inventory of surface water and groundwater beneficial uses;

(i)~~(h)~~ Hydrogeologic characterization of groundwater, with supporting data;

(j)~~(i)~~ Geologic engineering, hazards and geotechnical study, with supporting data;

(k)~~(j)~~ Characterization of mine materials and wastes which include, for example, overburden, waste rock, stockpiled ore, leached ore and tailings. Characterization of mine materials and wastes shall include, but not be limited to the following:

(A) Chemical and mineral analysis related to toxicity;

(B) Determination of the potential for acid generation;

(C) Determination of the potential for long-term leaching of toxic materials from the wastes;

(l)~~(k)~~ Characterization of wastewater (quantity and chemical and physical quality) produced by the operation;

(m)~~(l)~~ Assessment of the potential for residual acid-water formation from waste disposal facilities, low-grade ore stockpiles, waste rock piles and surface water or groundwater accumulation in open pits that will remain after mining. ~~and accumulation in open pits remaining after mining;~~

~~(m) Any other relevant baseline data.~~

(3) Data submitted by the permit applicant should be based on analysis of the actual materials, when possible, or may be based on estimates from knowledge of similar operations, and professional judgment.

PLANS AND SPECIFICATIONS

340-43-030

(1) A person constructing or commencing to operate a chemical process mine or substantially modifying or expanding an existing chemical process mine ~~mining operation which will use cyanide or other toxic chemicals to extract metals or metal-bearing minerals from the ore or which will produce wastes or wastewaters containing toxic materials or substantially modifying or expanding an existing such operation~~ shall first submit plans and specifications to the Department for construction, operation and maintenance of the facilities intended for treatment, control and disposal of ~~potentially toxic~~ wastes.

(2) The Department shall approve the plans, in writing, before construction of the facilities may be started. The plans shall address all applicable requirements of this Chapter ~~these rules~~ and shall include, but not be limited to, the following:

(a) A description of the facilities to be constructed;

(b) A surface water management plan for control of surface water;

(c) A wastewater management plan for treatment and disposal of excess wastewater, including provisions for reuse and wastewater-minimization;

(d) A facility construction plan including, as applicable, the design of low-permeability soil barriers, ~~the installation method for geosynthetics,~~ the type of geosynthetics to be used and a description of their installation methods, the design of wastewater treatment facilities and processes, a quality assurance plan for applicable phases of construction and a listing of construction certification reports to be provided to the Department;

(e) A preliminary closure plan;

(f) A preliminary post-closure monitoring and maintenance plan;

(g) A spill containment and control plan.

DESIGN, CONSTRUCTION, OPERATION AND CLOSURE REQUIREMENTS

340-43-035

(1) All chemical process and waste disposal facilities~~, including~~ and facilities for mixing, distribution, and application of chemicals associated with on-site mining operations; ore preparation and beneficiation facilities; and processed ~~waste~~ ore disposal facilities~~; and tailings disposal facilities~~ shall be designed, constructed, operated and closed in accordance with the guidelines contained in ~~these rules~~ this Chapter.

(2) A groundwater monitoring plan shall be submitted to, and approved by the Department. Monitoring wells shall be installed for detection of groundwater contamination as required by ~~OAR 340-40~~ OAR Chapter 340, Division 43, unless the hydrogeology of the site or other technical information indicates that an adverse impact on groundwater quality is not likely to occur.

(3) The Department may approve ~~other~~ alternate environmental protective means if the permit applicant can demonstrate that they provide equivalent protection~~, or the Department may grant a variance from the requirement as provided in OAR 340-43-040~~.

(4) The Department may, in accordance with a written compliance shcedule, grant reasonable time for existing facilities to comply with these rules.

~~**GRANTING OF VARIANCES FROM SPECIFIED REQUIREMENTS**~~

~~**340-32-040**~~

~~(1) The Department may, by written variance, waive certain requirements of these rules when size of operation, location, topography, operational procedures, or other site specific conditions indicate that the purpose of these rules can be achieved without strict adherence to the requirements.~~

~~(2) The Department may, in accordance with a written compliance schedule, grant reasonable time for existing facilities to comply with these rules.~~

EXEMPTION FROM STATE PERMITS FOR HAZARDOUS WASTE TREATMENT OR DISPOSAL FACILITIES

340-43-045040

(1) The state hazardous waste program requires a permit for the "treatment", "storage" or "disposal" of any "hazardous waste" as identified or listed in OAR Chapter 340, Division 101 from the Department, prior to the treatment and disposal of wastes. Permitting requirements can be found in OAR Chapter 340, Division 105, Hazardous Waste Management. ~~The Department may, by written variance, waive certain requirements of these rules when size of operation, location, topography, operational procedures, or other site specific conditions indicate that the purpose of these rules can be achieved without strict adherence to the requirements.~~

(2) However, any operation permitted under these rules, which would otherwise require the neutralization or treatment of hazardous waste and would require a permit pursuant to OAR ~~340-105~~ Chapter 340, Division 105, shall be exempt from the requirement to obtain such hazardous waste treatment permit.

~~(3) If processing wastes are not treated to the criteria contained in these rules, the permit applicant shall obtain a state hazardous waste treatment and disposal permit.~~

GUIDELINES FOR THE DESIGN, CONSTRUCTION, OPERATION AND CLOSURE OF OPERATIONS SUBJECT TO THESE RULES

PURPOSE

340-43-045~~050~~

(1) The guidelines contained in these rules establish criteria for the design, construction, operation and closure of facilities subject to these rules and supplement the provisions of paragraphs 340-43-005 through 340-43-045~~040~~ of this rule.

(2) Alternative methods of control of wastes may be acceptable if the permit applicant can demonstrate that the alternate methods will provide fully-equivalent environmental protection. The burden of proof of fully-equivalent protection lies with the permit applicant.

(3) Any disapproval of submitted plans or specifications, or imposition of requirements by the Department to improve existing facilities or their operation will be referenced when appropriate, to applicable guidelines or appropriate sections of these rules.

GENERAL PROVISIONS

340-43-050~~055~~

(1) Facilities permitted under either a WPCF or NPDES permit shall not discharge ~~inadequately treated~~ wastewater or process solutions to surface water, groundwater or soils, except as expressly allowed by the permit.

(2) Facilities subject to these rules shall not be sited in 100-year floodplains ~~or, in~~ wetlands~~, or on geological features of demonstrated seismic instability~~. A buffer zone (a minimum of 200 feet wide ~~at a minimum~~) shall be established between waste disposal facilities and surface waters.

~~(3) Permit applicants must demonstrate to the Department that the design of ore treatment facilities or waste disposal facilities sited in seismic impact zones or otherwise geologically unstable areas is adequate to ensure the integrity of all structural components of the facilities during operation, closure and post closure.~~

~~(4)~~(3) All chemical conveyances (ditches, troughs, pipes, etc.) shall be equipped with secondary containment and leak detection means for preventing and detecting release of chemicals to surface water, groundwater or soils.

~~(5)~~(4) Acid water accumulation in open pits resulting from the mining operation must be prevented by appropriate mining practices, by measures taken in the closure process, or be treated to contol pH and toxicity, for the life of the pit.

~~(6)~~(5) Construction of surface impoundment liner systems shall conform generally to the principles and practices described in **EPA/600/2-88/052, Lining of Waste Containment and Other Impoundment Facilities, September 1988**.

CONTROL OF SURFACE WATER RUN-ON AND RUN-OFF

340-43-055~~060~~

(1) Surface water run-on and run-off shall be controlled such that it will not endanger the facility or become contaminated by contact with process ~~toxic~~ materials or loaded with sediment. The control systems shall be designed to accommodate a 100-year, 24-hour storm event, or any other defined climatic event that is more appropriate to the site, and be placed so as to allow for restoration of the natural drainage network, to the maximum extent practicable, upon facility closure.

(2) All mine materials shall be properly placed and protected from surface water and precipitation so as not to be eroded and contribute sediment to site stormwater run-off or to otherwise contaminate surface water.

PHYSICAL STABILITY OF RETAINING STRUCTURES AND EMPLACED MINE MATERIALS

340-43-060065

(1) Permit applicants must demonstrate to the Department that the design of chemical processing facilities and waste disposal facilities is adequate to ensure the stability of all structural components of the facilities during operation, closure and post closure.

~~(1)~~(2) Retaining structures, foundations and mine materials emplacements shall be designed by a~~n independent,~~ qualified, registered professional and be constructed for long-term stability under anticipated loading and seismic conditions.

~~(2)~~(3) Temporary structures and materials emplacements may, with written approval from the Department, be constructed to a lesser standard if it can be shown that they pose no or minimal threat to public safety or the environment.

PROTECTION OF WILDLIFE

340-43-065070

(1) Wildlife shall be positively excluded from contact with chemical processing solutions and wastewaters containing chemicals unless the processing solutions and wastewaters can be shown not to pose a threat to wildlife under the rules of the ODF&W (Oregon Department of Fish and Wildlife).

(2) Hazing or other non-positive protective measures may be used in addition to positive exclusion measures but they are not acceptable as a substitute for positive exclusion.

~~(1) Provision shall be made for positive exclusion of wildlife from contact with processing chemicals, contaminated surface waters or wastewaters which are toxic to wildlife. Positive exclusion requires the use of such devices as pipes, fences, netting, covers and heap leach drip irrigation emitters.~~

(2) Hazing or other non-positive protective measures are not acceptable.

GUIDELINES FOR DESIGN AND INSTALLATION OF VAT-LEACH TANKS, VESSELS AND SECONDARY CONTAINMENT SYSTEMS

340-43-075

(1) Owners or operators of new tank, vessel and secondary containment systems or components must ensure that the foundation, structural support, seams, connections, and pressure controls (if applicable) are adequately designed and that the system has sufficient structural strength, compatibility with the materials to be stored or treated, and corrosion protection so that it will not collapse, rupture, or fail. The owner or operator must obtain a written assessment reviewed and certified by an independent, qualified, registered professional attesting that the system has sufficient structural integrity and is acceptable for the storing and treating of materials. This assessment shall include, at a minimum, the following information:

(a) Design standard(s) according to which the tank(s), vessel(s) and ancillary equipment is or will be constructed;

(b) Hazardous characteristics of the materials to be handled;

(c) For new tank systems or components in which the external shell of a metal tank or any external metal component of the tank system is or will be in contact with the soil or with water, a determination by a corrosion expert of:

(A) Factors affecting the potential for corrosion, including but not limited to:

(i) Soil moisture content;

(ii) Soil pH;

(iii) Soil sulfides level;

(iv) Soil resistivity;

(v) Structure to soil potential;

(vi) Influence of nearby underground metal structures (e.g., piping);

~~(vii) Stray electric current;~~

~~(viii) Existing corrosion protection measures (e.g., coating, cathodic protection);~~

~~(B) The type and degree of external corrosion protection that is needed to ensure the integrity of the tank or vessel system during the use of the system or component, consisting of one or more of the following:~~

~~(i) Corrosion resistant materials of construction such as special alloys or fiberglass reinforced plastic;~~

~~(ii) Corrosion resistant coating (such as epoxy or fiberglass) with cathodic protection (e.g., impressed current or sacrificial anodes);~~

~~(iii) Electrical isolation devices such as insulating joints and flanges.~~

~~(d) For underground tank system components that are likely to be affected by vehicular traffic, a determination of design or operational measures that will protect the tank system against potential damage;~~

~~(e) Design consideration to ensure that:~~

~~(A) Tank and vessel foundations will maintain the load of a full tank or vessel;~~

~~(B) Tank and vessel systems will be anchored to prevent flotation or dislodgement where the system is placed in a saturated zone, or is located within a seismic fault zone;~~

~~(C) Tank and vessel systems will withstand the effect of frost heave.~~

~~(2) The owner or operator of a new tank or vessel system must ensure that proper handling procedures are adhered to in order to prevent damage to the system during installation. Prior to covering, enclosing, or placing a new tank or vessel system or component in use, an independent, qualified professional who is trained and experienced in the proper installation of such systems, shall inspect the system or component for the presence of any of the following items:~~

~~(a) Weld breaks;~~

~~(b) Punctures;~~

~~(c) Scrapes of protective coatings;~~

~~(d) Cracks;~~

~~(e) Corrosion;~~

~~(f) Other structural damage or inadequate construction or installation.~~

~~All discrepancies shall be remedied before the system is covered, enclosed or placed in use.~~

~~(3) New tank or vessel systems or components and piping that are placed underground and backfilled shall be provided with a backfill material that is a noncorrosive, porous, homogenous substance and is carefully installed so that the backfill is placed completely around the system and compacted to ensure that the tank and piping are fully and uniformly supported.~~

~~(4) All new tanks, vessels and ancillary equipment shall be tested for tightness prior to being covered, enclosed or placed in use. If a tank or vessel system is found not to be tight, all repairs necessary to remedy the leak(s) in the system shall be performed prior to the tank or vessel system being covered, enclosed or placed in use.~~

~~(5) Ancillary equipment shall be supported and protected against physical damage and excessive stress due to settlement, vibration, expansion or contraction.~~

~~(6) The owner or operator shall provide the type and degree of corrosion protection necessary, to ensure the integrity of the tank or vessel system during use of the system. The installation of a corrosion protection system that is field fabricated shall be supervised by an independent corrosion expert to ensure proper installation.~~

~~(7) The owner or operator shall obtain and keep on file at the facility written statements by those persons required to certify the design of the tank or vessel system and supervise the installation of the system to attest that the system was properly designed and installed and that repairs, if necessary, were properly performed.~~

~~GUIDELINES FOR CONTAINMENT AND DETECTION OF RELEASES FROM VAT-LEACH TANKS, VESSELS AND SECONDARY CONTAINMENT SYSTEMS~~

~~340-43-080~~

~~(1) In order to prevent the release of toxic materials or wastes to the environment, secondary containment that meets the requirements of this section shall be provided for all new tank or vessel systems or components, prior to their being put into service.~~

~~(2) Secondary containment systems shall be:~~

~~(a) Designed, installed, and operated to prevent any migration of toxic materials or accumulated liquid out of the system to the soil, groundwater, or surface water at any time during the use of the system;~~

~~(b) Capable of detecting and collecting releases and accumulated liquids until the collected material is removed.~~

~~(3) Secondary containment systems shall be at a minimum:~~

~~(a) Constructed or lined with materials that are compatible with the materials to be placed in the system and of sufficient thickness to prevent failure due to pressure gradients (including static head and external hydrological forces), physical contact with the materials to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation (including stresses from nearby vehicular traffic);~~

~~(b) Placed on a foundation or base capable of providing support to the secondary containment system and resistance to pressure gradients above and below the system and capable of preventing failure due to settlement, compression, or uplift;~~

~~(c) Provided with a leak detection system that is designed and operated so that it will detect the failure of either the primary and secondary containment structure or any release of hazardous materials or accumulated liquid in the secondary containment system within 24 hours, or at the earliest practicable time if the existing detection technology or site conditions will not allow detection of a release within 24 hours;~~

~~(d) Sloped or otherwise designed or operated to drain and remove liquids resulting from leaks, spills, or precipitation. Spilled or leaked~~

~~materials and accumulated precipitation shall be removed from the secondary containment system within 24 hours, or in as timely a manner as is possible to prevent harm to human health or the environment, if removal of the released waste or accumulated precipitation cannot be accomplished within 24 hours.~~

~~(4) Secondary containment for tanks or vessels shall include one or more of the following:~~

~~(a) A line (external to the tank);~~

~~(b) A vault;~~

~~(c) A double walled tank; or~~

~~(d) An equivalent device as approved by the Department.~~

~~(5) In addition to the requirements of paragraphs (2), (3), and (4) of this section, secondary containment systems shall satisfy the following requirements:~~

~~(a) External liner systems shall be:~~

~~(A) Designed or operated to contain 100 percent of the capacity of the largest tank within its boundary;~~

~~(B) Designed or operated to prevent run-on or infiltration of precipitation into the secondary containment system unless the collection system has sufficient excess capacity to contain run-on or infiltration. Such additional capacity shall be sufficient to contain precipitation from a 25 year, 24 hour rainfall event;~~

~~(C) Free of cracks or gaps; and~~

~~(D) Designed and installed to completely surround the tank or vessel and to cover all surrounding earth likely to come into contact with the waste if released from the tank(s) (i.e., capable of preventing lateral as well as vertical migration of the waste).~~

~~(b) Vault systems shall be:~~

~~(A) Designed or operated to contain 100 percent of the capacity of the largest tank or vessel within its boundary;~~

~~(B) Designed or operated to prevent run-on or infiltration of precipitation into the secondary containment system unless the collection system has sufficient excess capacity to contain run-on or infiltration. Such additional capacity shall be sufficient to contain precipitation from a 25-year, 24-hour rainfall event;~~

~~(C) Constructed with chemical-resistant water stops in place at all joints (if any);~~

~~(D) Provided with an impermeable interior coating or lining that is compatible with the stored materials and that will prevent migration of material into the concrete;~~

~~(E) Provided with an exterior moisture barrier or be otherwise designed or operated to prevent migration of moisture into the vault if the vault is subject to hydraulic pressure.~~

~~(c) Double-walled tanks shall be:~~

~~(A) Designed as an integral structure (i.e., an inner tank within an outer shell) so that any release from the inner tank is contained by the outer shell;~~

~~(B) Protected, if constructed of metal, from both corrosion of the primary tank interior and the external surface of the outer shell; and~~

~~(C) Provided with a built-in continuous leak detection system capable of detecting a release within 24 hours or at the earliest practicable time, if the owner or operator can demonstrate to the Department and the Department concurs, that the existing leak detection technology or site conditions will not allow detection of a release within 24 hours.~~

~~(6) Ancillary equipment shall be provided with full secondary containment (e.g., trench, jacketing, double-walled piping) except for:~~

~~(a) Above ground piping (exclusive of flanges, joints, valves, and connections) that are visually inspected for leaks on a daily basis;~~

~~(b) Welded flanges, welded joints, and welded connections that are visually inspected for leaks on a daily basis;~~

(c) Sealless or magnetic coupling pumps and sealless valves, that are visually inspected for leaks on a daily basis; and

(d) Pressurized above ground piping systems with automatic shut off devices (e.g., excess flow check valves, flow metering shutdown devices, loss of pressure actuated shut off devices) that are visually inspected for leaks on a daily basis.

GUIDELINES FOR INSPECTION OF VAT-LEACH TANKS, VESSELS AND SECONDARY CONTAINMENT SYSTEMS

340-43-085

(1) The owner or operator shall inspect, at least once each operating day:

(A) Overfill/spill control equipment (e.g., waste feed cutoff systems, bypass systems, and drainage systems) to ensure that it is in good working order;

(B) The above ground portions of the tank or vessel system, if any, to detect corrosion or releases of waste;

(C) Data gathered from monitoring equipment and leak detection equipment (e.g., pressure and temperature gauges, monitoring wells) to ensure that the tank or vessel system is being operated according to its design; and

(D) The construction materials and the area immediately surrounding the externally accessible portion of the tank system including secondary containment structures (e.g., dikes) to detect erosion or signs of releases of materials (e.g., wet spots, dead vegetation).

(2) The owner or operator shall inspect cathodic protection systems, if present, according to, at a minimum, the following schedule to ensure that they are functioning properly:

(a) The proper operation of the cathodic protection system shall be confirmed within six months after initial installation, and annually thereafter;

(b) All sources of impressed current shall be inspected and/or tested, as appropriate, at least bimonthly (i.e., every other month).

~~(3) The owner or operator shall document in the operating record of the facility an inspection of those items in paragraphs (1) and (2) of this section.~~

GUIDELINES FOR DESIGN, CONSTRUCTION, AND OPERATION OF HEAP-LEACH FACILITIES

340-43-~~070~~090

(1) These guidelines apply ~~generally~~ to heap-leach facilities using dedicated, or expanding, pads. Heap-leach facilities using on-off, reusable pads may require variations from these rules. They ~~that~~ shall be approved on a case-by-case basis by the Department.

(2) The heap-leach facility (pad and associated ponds, pipes and tanks) shall be sized to prevent flooding of any of its components. A limited-use, emergency overflow pond ~~(or tank)~~ constructed to lesser requirements as described in this paragraph may be used in addition to the pregnant-solution pond ~~(or tank)~~ to reduce the required design capacity of the pregnant-solution pond~~(or tank)~~.

(3) TABLE 1 of this Division establishes minimum capacity-sizing criteria for the leach-pad and ponds. The pad and ponds~~, pond and tank components~~ may be designed to act separately or in conjunction with each other to obtain the required storage volumes. Other design criteria may be used, with Department approval, if local conditions warrant. The best available climatic data shall be used to confirm the most appropriate critical design storm event and estimate the liquid levels in the system over a full seasonal cycle. The liquid mass balance may include provision for evaporation.

(4) The heap-leach pad liner system shall be of ~~triple~~ double liner construction with between-liner leak detection consisting of:

(a) An engineered, stable, low permeability soil/clay bottom liner (maximum coefficient of permeability of 10^{-7} cm/sec) with a minimum thickness of ~~36~~ 18 inches;

(b) A continuous ~~Continuous~~ full-membrane liner ~~middle and top liners~~ of suitable synthetic material in contact with the soil/clay liner ~~separated by a minimum of 12 inches of permeable material (minimum permeability of 10^{-2} cm/sec)~~;

(c) A leak-detection system between the synthetic top liner and the soil/clay bottom liner ~~liners capable of detecting leakage equivalent to~~

~~free flow from a total hole area of 0.05 square inches per acre of liner within one week of leak initiation~~.

The thickness of the bottom soil/clay liner may be reduced and/or the coefficient of permeability of the soil/clay liner may be increased if an additional synthetic liner is used. When two synthetic liners are used, the leak collection system shall be installed between the two synthetic liners.

(5) The processing-chemical pond liners shall be of triple liner construction with between-liner leak detection consisting of:

(a) An engineered, stable, low permeability soil/clay bottom liner (maximum permeability of 10^{-7} cm/sec) with a minimum thickness of ~~36~~ 12 inches;

(b) Continuous full-membrane middle and top liners of suitable synthetic material separated by a ~~suitable~~ permeable material (minimum coefficient of permeability of 10^{-2} cm/sec);

(c) A leak collection ~~detection~~ system between the synthetic liners ~~capable of detecting leakage equivalent to free flow from a total hole area of 0.05 square inches per acre of liner, within one week of leak initiation~~.

(6) Emergency ponds may be constructed as an alternative to larger pregnant and barren ponds. The emergency pond may be constructed to a lesser standard, with the limitation that it is to be used only infrequently and for short periods of time. A between-liner leak detection system is not required for the emergency pond.

(7) The emergency-pond liner shall consist of: ~~be of composite construction consisting of:~~

(a) An engineered, stable, low permeability soil/clay bottom liner (maximum permeability of 10^{-7} cm/sec) with a minimum thickness of 12 inches, and

(b) A single full-membrane synthetic top liner of suitable material.

(8) The heap-leach pad shall be provided with a process chemical collection system above the ~~upper-most~~ liner that will prevent an accumulation of process chemical within the heap greater than 24 inches in depth.

(9) The permittee shall prepare a written operating plan for safe temporary shut-down of the heap-leach facility and train employees in its implementation.

(10) The permittee shall respond to leakage collected by the heap-leach and processing-chemical storage pond leak-collection systems according to the process defined in TABLE 2.

~~(10) Leaks detected by the heap-leach and processing-chemical pond leak-detection systems with leak rates in excess of the rate for free flow through 0.05 square inches of hole per acre of liner at the actual liquid depth shall either be repaired at the first opportunity or operations shall be modified such that the leakage is reduced below the specified rate. The Department will set a time schedule for repair with the permittee, if necessary.~~

(11) The permit applicant shall determine the acid-generating potential of the spent ore by acid\base accounting and other appropriate static and dynamic laboratory tests. If the spent ore is shown to be potentially acid generating under the conditions expected in the heap at closure, the permittee shall submit a plan for acid correction for Department approval prior to loading the heap.

GUIDELINES FOR DISPOSAL OF MILL TAILINGS

340-43-075~~095~~

(1) Mill tailings shall be treated by cyanide removal, chemical oxidation, or other means prior to disposal to reduce the WAD cyanide level in the liquid fraction. The permittee shall conduct laboratory column tests on mill tailings to determine the lowest practicable concentration to which the WAD cyanide (weak-acid dissociable cyanide as measured by ASTM Method D2036-82 C) can be reduced. In no event, shall the permitted WAD cyanide concentration in the liquid fraction of the tailings be greater than 30 ppm. ~~Mill tailings shall be treated prior to disposal to remove or detoxify process chemicals and available toxic metals, and minimize potential formation of acid leachate in the waste disposal facility. The Department places first consideration on use of treatment technologies which will remove toxic metals, cyanide or other process chemicals and acid-generating minerals from the wastestream and use them in a beneficial manner. Second consideration will be given to cyanide oxidation or other "detoxification" treatments which will convert or remove toxic metals and cyanide complexes to reduce overall toxicity.~~

(2) Mill tailings shall pass the EPA TCLP (toxicity characteristic leach procedure), Method 1311, otherwise they will be considered a state hazardous waste. ~~The liquid retention capacity of tailings disposal facilities which receive tailings as a slurry shall be designed to the (applicable) criteria of TABLE 1 to prevent overflow.~~

(3) The permittee shall determine the potential for acid-water formation from the tailings by means of acid-base accounting and other suitable laboratory static and dynamic tests. If the tailings can produce acid water, basic materials shall be added to the tailings in sufficient quantity to make the ANP (acid neutralization potential) equal to at least three (3) times the APP (acid producing potential) prior to placement of tailings in the disposal facility. ~~Disposal of non-acid generating tailings.~~

~~(a) Non-acid generating tailings should be disposed of as de-watered solids and the disposal area progressively covered; but disposal as a slurry will be considered.~~

~~(b) Tailings disposed of either as a slurry or as de-watered solids, shall meet the criteria of TABLE 2 or 3 of this Division, respectively.~~

~~(c) The disposal facility shall be lined with an engineered, stable, soil/clay liner with a maximum permeability of 10^{-6} cm/sec, having a minimum thickness of 12 inches and shall be provided with a collection system to remove stormwater.~~

(4) The disposal facility shall be lined with a composite double liner consisting of a full-membrane synthetic top liner in tight contact with an engineered, stable, soil/clay bottom liner (maximum coefficient of permeability of 10^{-7} cm/sec) having a minimum thickness of 12 inches.

Construction of the liner shall generally follow the principles and practices contained in Construction of the liner shall follow the principles and practices contained in EPA/600/2-88/052, "Lining of Waste Containment and Other Impoundment Facilities, September, 1988.

~~Disposal of acid generating tailings.~~

~~(a) Tailings, or waste materials that have been separated from tailings, which contain more than 1.0 g/kg of total sulfide sulfur and are acid generating, shall be disposed of in a separate disposal facility.~~

~~(b) Tailings or waste materials disposed of as a slurry or as de-watered solids shall meet the treatment criteria of TABLE 2 or 3, respectively, except that the sulfur criterion may be exceeded.~~

~~(c) The disposal facility shall be lined with a composite double liner consisting of a full membrane synthetic top liner in tight contact with an engineered, stable, soil/clay bottom liner (maximum permeability of 10^{-7} cm/sec) having a minimum thickness of 36 inches.~~

~~Construction of the liner shall follow the principles and practices contained in EPA/600/2-88/052, "Lining of Waste Containment and Other Impoundment Facilities, September, 1988.~~

~~(d) The disposal facility shall be provided with a leachate collection system above the liner suitable for monitoring, collection and treatment of potential acid drainage.~~

~~(e) The permittee shall segregate and place acid-generating and acid-neutralizing tailings in such a manner as to minimize acid generation by maximizing neutralization and exclusion of water and oxygen, according to a Department-approved plan.~~

(5) The disposal facility shall be provided with a leachate collection system above the liner suitable for monitoring, collection and treatment of potential acid drainage.

GUIDELINES FOR DISPOSAL OR STORAGE OF WASTEROCK, LOW-GRADE ORE AND OTHER MINED MATERIALS

340-43-080

(1) The permittee shall determine the acid-generating potential of the wasterock, low-grade ore or other mined materials by acid/base accounting and other appropriate static and dynamic laboratory tests. If the mined materials are shown to be potentially acid generating, the permittee shall submit a plan for acid correction for Department approval prior to permanently placing the materials.

(2) The mined materials shall be tested with EPA Method 1312 and the test results shall meet the criteria specified in the EPA TCLP (toxicity characteristic leach procedure), Method 1311 test prior to permanently placing the mined materials.

GUIDELINES FOR HEAP-LEACH AND TAILINGS DISPOSAL FACILITY CLOSURE

340-43-085~~100~~

(1) The waste disposal facilities shall be closed under these rules in conjunction with the reclamation requirements of DOGAMI (Oregon Department of Geology and Mineral Industries).

(2) An up-dated closure plan and post-closure monitoring and maintenance plan shall be submitted to the Department by the permittee at least 180 days prior to beginning closure operations or making any substantial changes to the operation. The closure plan must be compatible with DOGAMI's reclamation plan and may be part of it.

(3) Chemical conveyances (ditches, troughs, pipes, etc.) not necessary for post-closure monitoring shall be removed. The secondary containment systems shall be checked before closure for process-chemical contamination, and contaminated soil or other materials, if any, shall be removed to an acceptable disposal facility.

(4) Closure of the heap-leach facility.

(a) The heap shall be detoxified over a suitable period of time prior to closure, using rinse/rest cycles of rinsing and chemical oxidation, if necessary. The WAD cyanide concentration in the rinsate shall be no greater than 0.2 ppm. ~~, prior to closure by a combination of rinsing and chemical treatment as, for example, with hydrogen peroxide. Chlorine compounds shall not be used. Statistically representative samples of the spent ore and the rinse water shall be taken and analyzed for the parameters listed in TABLE 4 of this Division. Residual cyanide levels shall meet the criteria of TABLE 4.~~

(b) Spent heap-leach ore shall pass the EPA TCLP, Method 1311 test and criteria, otherwise it will be considered a state hazardous waste and must be disposed of under the state hazardous waste rules.

(c)~~(b)~~ Following detoxification as defined in (a) above, the heap shall be closed in place on the pad by covering the heap with a cover designed to prevent water and air infiltration. ~~Following detoxification and correction for acid generation potential, if any, the heap shall be closed in place on the pad by covering the heap with a cover designed to prevent water infiltration.~~ The cover should consist, at a minimum, of a low-permeability layer ~~to prevent water infiltration~~ and suitable drainage and soil layers to prevent erosion and damage by animals and to sustain vegetation growth, in accordance with DOGAMI's reclamation rules.

(d)~~(c)~~ The ponds associated with the heap shall be closed by folding in the synthetic liners and filling and contouring the pits with inert material. Residual sludge may be disposed of in one of the on-site waste disposal facilities, provided it meets the criteria for such wastes in these guidelines. ~~removing the residual solid sludge and the synthetic liners~~

~~and filling in and contouring the pits with inert material. The sludge may be disposed of in one of the on-site waste disposal facilities, provided it meets the criteria for wastes in these guidelines.~~ The process chemical collection system shall be maintained in operative condition so that it can be used to monitor the amount and quality of infiltrated water, if any, draining from the heap.

(5) Closure of the tailings disposal facility. The tailings disposal facility shall be closed by covering with a composite cover designed to prevent water and air infiltration and be environmentally stable for an indefinite period of time. ~~Closure of the non-acid-generating tailings disposal facility. The facility shall be closed in place by covering the tailings with a composite cover consisting, at a minimum, of a low-permeability layer to minimize water infiltration and suitable soil layers to prevent erosion and damage by animals and to sustain vegetation growth, in accordance with DOGAMI's reclamation rules.~~

~~(6) Closure of the acid-generating tailings disposal facility. The acid-generating tailings disposal facility shall be closed by covering with a composite cover designed to prevent water infiltration and be environmentally stable for an indefinite period of time.~~ Maximum effort shall be made to isolate the tailings from the environment. Construction of the cover shall generally follow the principles and practices contained in EPA/530-SW-89-047, Technical Guidance Document -- Final Covers on Hazardous Waste Landfills and Surface Impoundments.

POST-CLOSURE MONITORING

340-43-090~~110~~

The Department may continue its permit in force for thirty (30) years after closure of the operation and will include permit requirements for periodic monitoring to determine if release of pollutants is occurring.

~~The facility water quality permit may be continued in force for a nominal period of thirty years after closure of the operation and would include appropriate requirements for periodic monitoring to determine if release of pollutants is occurring.~~ Monitoring data will ~~would~~ be reviewed regularly by the Department ~~with DOGAMI regularly~~ to determine the effectiveness of closure of the disposal facilities. The Department will consult with DOGAMI on release of security funds ~~before DOGAMI releases bond funds~~ that would otherwise be needed to correct problems resulting from ineffective closure.

LAND DISPOSAL OF WASTEWATER

340-43-095~~115~~

(1) To qualify for land disposal of excess wastewater, the permit applicant shall demonstrate to the Department that the process has been designed to minimize the amount of excess wastewater that is produced, through use of water-efficient processes, wastewater treatment and reuse, and reduction by natural evaporation. Excess wastewater that must be released shall be treated and disposed of to land under the conditions specified in the permit.

(2) A disposal plan shall be submitted as part of the permit application that, at a minimum, includes:

(a) Wastewater quantity and quality characterization;

(b) Soils characterization and suitability analysis;

(c) Drainage and run-off characteristics of the site relative to land application of wastewater;

(d) Proximity of the disposal site to groundwater and surface water and potential impact;

(e) Wastewater application schedule and water balance;

(f) Disposal site assimilative capacity determination;

(g) Soils, surface water and groundwater monitoring plan;

(h) Potential impact on wildlife or sensitive plant species.

(3) The Department will evaluate the disposal plan and set site-specific permit conditions for the wastewater discharge.

GUIDELINES FOR OPEN-PIT CLOSURE

340-43-100~~120~~

(1) Open pits that will be left as a result of the mining operation shall be assessed prior to, and following, mining operations for the potential to contaminate ~~accumulation of~~ water that might not meet water-quality standards due to build-up of acid or toxic metals.

(2) If the Department finds ~~judges~~ that the potential for water accumulation in the pit(s) exists, the permit applicant shall submit a closure plan for the pit that will address contamination prevention and possible remedial treatment of the water. The closure plan shall, at a minimum, examine the following alternatives:

(a) Avoidance, during mining, of acid-generating materials that can be left in place, rather than being exposed to oxidation and weathering;

(b) Removal from the pit and disposal, during or after the mining operation, of residual acid-generating materials that would otherwise be left exposed to oxidation and weathering;

(c) Protective capping in-situ of residual acid-generating materials;

(d) Treatment methods for correcting acidity and toxicity of accumulated water;

~~(d)~~ Treatment methods for correcting acidity and toxicity of accumulated water ~~for correcting acidity and toxicity~~;

(e) Installation of an impermeable liner under ponded water to prevent groundwater contamination;

(f) Backfilling of the pit(s) above the water table to reduce oxidation of residual acid-generating materials.

TABLE 1

Heap-Leach Liquid Storage Criteria

Component	Pregnant-Solution Pond	Barren-Solution Pond
Operating Volume	Minimum necessary to maintain recirculation	Minimum necessary to maintain recirculation
Operational Surge	Anticipated draindown and rinse volume	Anticipated draindown and rinse volume
Climatic Surge	100-yr, 24-hr storm plus 10-yr snowmelt	100-yr, 24-hr storm plus 10-yr snowmelt
Safety Factor	2-ft dry freeboard	2-ft dry freeboard

TABLE 2

Required Responses to Leakage Detected from the Leach Pad

Leakage Category	Response
Zero leakage to expected leakage based on quality installation and known operating conditions.	Pump from monitoring sump.
As above to leakage sufficient to fill the collection sump during the prescribed monitoring period.	Notify the Department; increase pumping and monitoring.
As above to leakage sufficient to leak detection system during the prescribed monitoring period.	Change operating practices fill the reduce leakage.
Leakage in excess of that above (pressurized leak detection system).	Repair leaks under Department schedule.

~~Tailings Slurry Treatment Criteria~~

~~Parameter~~	~~Allowable Concentration~~
~~Filtered Liquid Fraction:~~	
~~Cyanide (Total)~~	~~10 mg/l~~
~~Cyanide (Wad)~~	~~0.2 mg/l~~
~~Thiocyanate ion~~	~~75 mg/l~~
~~Cyanate ion~~	~~50 mg/l~~
~~Filtered Solid Fraction:~~	
~~Total Sulfur (Sulfide)~~	~~1.0 g/kg~~
~~ANP > 3 APP~~	~~(See Notes)~~
~~Both Liquid and Solid Fractions By EPA TCLP Method 1311:~~	
~~Arsenic~~	~~5 mg/l~~
~~Barium~~	~~100 mg/l~~
~~Cadmium~~	~~1 mg/l~~

~~Chromium~~	~~5 mg/l~~
~~Copper~~	~~1 mg/l~~
~~Lead~~	~~5 mg/l~~
~~Mercury~~	~~0.2 mg/l~~
~~Selenium~~	~~1 mg/l~~
~~Silver~~	~~5 mg/l~~
~~Zinc~~	~~1 mg/l~~

~~**Notes:**~~

~~1. Liquid fraction defined as filtered slurry liquid combined with distilled water rinsate of solid fraction; concentrations calculated on original liquid fraction volume.~~

~~2. Cyanide (Total) and (Wad) to be determined by ASTM D2036-82 A and C.~~

~~3. ANP = Acid neutralization potential in terms of the mass of equivalent $CaCO_3$, available, expressed in mass units per thousand mass units.~~

~~APP = Acid producing potential in terms of the mass of equivalent $CaCO_3$, required for neutralization, expressed in mass units per thousand mass units.~~

~~TABLE 3~~

~~De-Watered Tailings Solids Treatment Criteria~~

~~Parameter~~	~~Allowable Concentration~~
~~Soluble Cyanide (Wad)~~	~~0.5 mg/kg~~
~~Soluble Cyanide (Total)~~	~~2.5 mg/kg~~
~~Cyanide (Total) after extraction of Soluble (Wad) and Soluble (Total) Cyanide~~	~~10.0 mg/kg~~
~~Total Sulfur (Sulfide)~~	~~1.0 g/kg~~
~~ANP > 3 APP~~	~~(See notes)~~
~~By EPA TCLP Method 1311:~~	
~~Arsenic~~	~~5 mg/l~~
~~Barium~~	~~100 mg/l~~
~~Cadmium~~	~~1 mg/l~~
~~Chromium~~	~~5 mg/l~~
~~Copper~~	~~1 mg/l~~
~~Lead~~	~~5 mg/l~~
~~Mercury~~	~~0.2 mg/l~~
~~Selenium~~	~~1 mg/l~~
~~Silver~~	~~5 mg/l~~
~~Zinc~~	~~1 mg/l~~

~~Notes:~~

~~1. See Appendix A for cyanide analysis method.~~

~~2. "De-watered" means no free liquid.~~

~~3. ANP = Acid neutralization potential in terms of the mass of equivalent $CaCO_3$ available, expressed in mass units per thousand mass units.~~

~~APP = Acid producing potential in terms of the mass of equivalent $CaCO_3$ required for neutralization, expressed in mass units per thousand mass units.~~

~~TABLE 4~~

~~Heap-Leach Closure Criteria for Cyanide~~

~~Waste Fraction~~	~~Parameter~~	~~Concentration~~
~~Heap Rinsate (Liquid)~~	~~Cyanide (Wad)~~	~~0.2 mg/l~~
	~~Cyanide (Total)~~	~~10.0 mg/l~~
~~Spent Ore (Solids)~~	~~Soluble Cyanide (Wad)~~	~~0.2 mg/kg~~
	~~Soluble Cyanide (Total)~~	~~2.5 mg/kg~~
	~~Cyanide (Total) after extraction of Soluble (Wad) and Soluble (Total) Cyanide~~	~~10.0 mg/kg~~

~~Note:~~

~~See Appendix A for the cyanide analysis method applicable to the spent ore.~~

APPENDIX A

ANALYSES OF SPENT ORE AND TAILINGS

Analysis of the spent ore and tailings shall be performed with the following procedure:

1. For extraction of Soluble Cyanide (Wad):

   a. Place 500 grams of dry spent ore or tailings in 2.5 liters of de-ionized water at neutral pH in an air-tight, capped container. Select the container size to minimize head space.

   b. Stir mildly for 24 hours at room temperature.

   c. Filter entire slurry from Step (1.b) through No. 42 Whatman paper and immediately analyze an aliquot for Wad cyanide.

   d. Calculate Soluble Cyanide (Wad) as in Step (2.d).

2. For extraction of Soluble Cyanide (Total):

   a. Place 500 grams of dry spent ore or tailings in 2.5 liters of distilled water; adjust to pH 5 with H_2SO_4.

   b. Stir mildly for 24 hours at room temperature in an air tight, capped container with no head space.

   c. Filter the entire slurry from Step (2.b) through a No. 42 Whatman filter paper and analyze an aliquot of filtrate for Soluble Cyanide (Total). Use the remaining solid fraction of the slurry for Cyanide (Total) in Step (3.).

   d. Calculate Soluble Cyanide (Total) as mg CN/Kg of solids:

$$\text{mg CN/Kg} = \frac{\text{(mg/L CNT in filtrate) x 2.5}}{0.5}$$

3. For determination of Soluble Cyanide (Wad), use ASTM D2036-82 C.

4. For determination of Cyanide (Total) after extraction of Soluble Cyanide (Wad) and Soluble Cyanide (Total) in the solid fraction, use ASTM D2036-82 A, with a

~~minimum of 5 grams of the solid fraction remaining from Step (2.).~~