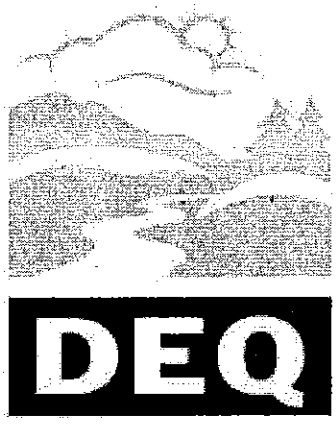
4/18/1980

OREGON
ENVIRONMENTAL QUALITY
COMMISSION MEETING
MATERIALS



State of Oregon
Department of Environmental Quality

OREGON ENVIRONMENTAL QUALITY COMMISSION MEETING

April 18, 1980

Eugene City Council Chambers
777 Pearl Street
Eugene, Oregon

A G E N D A

9:00 am CONSENT ITEMS

Items on the consent agenda are considered routine and generally will be acted on without public discussion. If a particular item is of specific interest to a Commission member, or sufficient public interest for public comment is indicated, the Chairman may hold any item over for discussion.

A. Minutes of March 21, 1980 Commission meeting.

B. Monthly Activity Report for March 1980.

C. Tax Credit Applications.

D. Request for approval of Stipulation and Final Order (WQ-WVR-80-22) between the Department and the City of Silverton.

E. Volatile Organic Compound (VOC) Rules - Request for authorization to conduct a public hearing to amend the State Implementation Plan (SIP) regarding VOC rules (OAR Chapter 340, Section 22); and permit rules OAR 340-20-155) to include certain VOC sources.

F. Motor Vehicle Emission Testing Rules - Request for authorization to conduct a public hearing for annual rules review and standards update to include 1980 model year motor vehicles (OAR 340-24-300 through 24-350).

9:10 am PUBLIC FORUM

G. Opportunity for any citizen to give a brief oral or written presentation on any environmental topic of concern. If appropriate, the Department will respond to issues in writing or at a subsequent meeting. The Commission reserves the right to discontinue this forum after a reasonable time if an unduly large number of speakers wish to appear.

ACTION ITEMS

The Commission may hear testimony on these items at the time designated, but may reserve action until the work session later in the meeting.

9:15 am H. Field Burning - Public hearing and proposed adoption of amendments to Oregon Agricultural Burning Rules (OAR 340-26-005 through 26-030); and to consider inclusion of the proposed amendments and technical support documentation as a revision to Oregon's State Implementation Plan (SIP).

(MORE)

I. Proposed Interim Groundwater Quality Policy.

10:00 am J. River Road/Santa Clara Septic Tank Moratorium - Public hearing to consider whether to continue, repeal or modify Oregon Administrative Rule (OAR) 340-71-020(9) as it relates to the current spetic tank moratorium in effect in the River Road/Santa Clara area of Lane County.

11:30 am K. Multnomah County Groundwater - Request for approval of Multnomah County Groundwater Protection Plan.

~~1:30 pm L. Request for issuance of hazardous waste disposal site license (number HW-1) to Chem-Security, Inc., for Arlington Hazardous Waste Disposal site.~~
POSTPONED

1:45 pm M. Hazardous Waste Treatment Site Licensing - Proposed adoption of amendments to Oregon Administrative Rules for licensing of hazardous waste treatment sites (OAR Chapter 340, Division 62) and hazardous waste management (OAR Chapter 340, Division 63).

THE FOLLOWING ITEMS WILL BE ADDRESSED BY THE COMMISSION AFTER 1:45 pm.

POSTPONED ~~N. Request for hearing on the denial of Land Reclamation, Inc. (Columbia Sand and Gravel Pit) application for a solid waste disposal facility permit.~~

O. Request for variance to subsurface sewage disposal rules - Illahee planned unit development, Douglas County.

P. Certification of plans for sewerage system as adequate to alleviate a health hazard (pursuant to ORS 222.898) for an area contiguous to the City of Portland (Southwest Lesser Road area).

INFORMATIONAL ITEM

Q. Grants Pass Air Quality - Status report per Commission request of August 25, 1978.

WORK SESSION

The Commission reserves this time if needed to further consider proposed action on any item on the agenda.

Because of the uncertain time span involved, the Commission reserves the right to deal with any item at any time in the meeting except those items with a designated time certain. Anyone wishing to be heard on an agenda item that doesn't have a designated time on the agenda should be at the meeting when it commences to be certain they don't miss the agenda item.

The Commission will breakfast (7:30 am) and lunch (12:15 pm) at the Eugene Hotel, 222 East Broadway, Eugene.

THESE MINUTES ARE NOT FINAL UNTIL APPROVED BY THE EQC

MINUTES OF THE HUNDRED TWENTIETH MEETING OF THE OREGON ENVIRONMENTAL QUALITY COMMISSION

April 18, 1980

On Friday, April 18, 1980, the one hundred twentieth meeting of the Oregon Environmental Quality Commission convened in the Eugene City Council Chambers, 777 Pearl Street, Eugene, Oregon.

Present were Commission members: Mr. Joe B. Richards, Chairman; Mr. Albert H. Densmore, Vice-Chairman; Mr. Fred J. Burgess; and Mrs. Mary V. Bishop. Commissioner Ronald M. Somers was absent. Present on behalf of the Department were its Director, Mr. William H. Young, and several members of the Department staff.

The staff reports presented at this meeting, which contain the Director's recommendations mentioned in these minutes, are on file in the Office of the Director of the Department of Environmental Quality, 522 Southwest Fifth Avenue, Portland, Oregon.

BREAKFAST MEETING

Mr. Ronald M. Somers was the only Commission member absent.

1. Evans Products Company--Status Report. Mr. John Borden, Willamette Valley Region Manager, presented a written status report to the Commission which is made a part of the Commission's record on this matter. He informed the Commission that there was a problem with the ambient air sampling study due to contamination of the measuring device.

2. Tillamook and Marion Counties subsurface program--Status Report. Regarding the problems in Tillamook County which were presented to the Commission at previous meetings, they were told that the notification letters had been sent to residents in the area. Mr. Jack Osborne, of the Department's Subsurface Section, said the Department had already received several requests for reevaluation of systems.

   Director Young informed the Commission that due to financial problems Marion County had laid off, among other employes, one of their two sanitarians. The Department informed Marion County that they didn't believe the County could operate the program adequately with only one sanitarian and offered Department assistance to back them up or to take over the program. Mr. Young said he expected to hear from Marion County within the next week.

3. Discussion of proposed adoption of Volatile Organic Compound (VOC) rules. Mr. Peter Bosserman, of the Department's Air Quality Division, reviewed some of the areas where industry had concerns about the proposed rules. Commissioner Densmore asked if it was true that the proposed rules would put more stringent requirements on industries inside nonattainment areas that want to expand than to industries located outside nonattainment areas. Mr. Bosserman replied that was true. In both instances the industry must meet RACT (Reasonably Available Control Technology) requirements, but industry inside nonattainment areas would have to find offsets if they wished to expand.

4. Update on Goals and Objectives. Mr. Michael Downs, Administrator of the Management Services Division, gave the Commission a status report on the Department's Goals and Objectives process. Chairman Richards requested that budget decision packages be brought to the EQC in June for their input on priorities.

5. Legislative Concepts. Director Young said the Department's legislative concepts would be reviewed with the Governor's office and the Department would report back to the Commission as soon as feedback was received from the Governor.

6. Federal funding cutbacks. Director Young told the Commission that he met with Mr. Douglas Costle, Administrator of the U.S. Environmental Protection Agency. The Department requested the Governor to ask the Oregon Congressional delegation to urge Congress to extend deadlines on use of FY 79 monies. Mr. Young said Mr. Costle didn't seem to have a problem with this approach.

7. Field burning air quality analysis for SIP submittal. Director Young said new analysis predicted a much greater consumption of available PSD (prevention of significant deterioration) increment than the original analysis. Because of this some local governments, particularly the City of Lebanon, were raising concern.

AGENDA ITEM A - MINUTES OF THE MARCH 21, 1980, EQC MEETING

It was MOVED by Commissioner Bishop, seconded by Commissioner Burgess and carried unanimously that the Minutes of the March 21, 1980, Commission meeting be approved as presented.

AGENDA ITEM B - MONTHLY ACTIVITY REPORT FOR MARCH 1980

AGENDA ITEM C - TAX CREDIT APPLICATIONS

It was MOVED by Commissioner Densmore, seconded by Commissioner Bishop and carried unanimously that: (1) the Monthly Activity Report for March 1980 be approved as presented; and (2) the following tax credit applications be approved:

T-1166	Timber Products Company
T-1174	Bohemia, Inc.

T-1176	Bohemia, Inc.
T-1179	Boise Cascade Corporation
T-1093	Warrenton Lumber Company
T-1184	Boise Cascade Corporation
T-1190	International Paper Company

AGENDA ITEM D - REQUEST FOR APPROVAL OF STIPULATION AND FINAL ORDER (WQ-WVR-80-22) BETWEEN THE DEPARTMENT AND THE CITY OF SILVERTON

It was MOVED by Commissioner Burgess, seconded by Commissioner Bishop and carried unanimously that the Stipulation and Final Order between the Department and the City of Silverton be approved.

AGENDA ITEM E - VOLATILE ORGANIC COMPOUND (VOC) RULES - REQUEST FOR AUTHORIZATION TO CONDUCT A PUBLIC HEARING TO AMEND THE STATE IMPLEMENTATION PLAN (SIP) REGARDING VOC RULES (OAR CHAPTER 340, SECTION 22); AND PERMIT RULES (OAR 340-20-155) TO INCLUDE CERTAIN VOC SOURCES

AGENDA ITEM F - MOTOR VEHICLE EMISSION TESTING RULES - REQUEST FOR AUTHORIZATION TO CONDUCT A PUBLIC HEARING FOR ANNUAL RULES REVIEW AND STANDARDS UPDATE TO INCLUDE 1980 MODEL YEAR MOTOR VEHICLES (OAR 340-24-300 THROUGH 24-350)

It was MOVED by Commissioner Densmore, seconded by Commissioner Burgess and carried unanimously that public hearings be authorized for the proposed volatile organic compound rules and the motor vehicle emission testing rules annual update.

AGENDA ITEM G - PUBLIC FORUM

Mr. Charles P. McCormick, McCormick's Backhoe and Tractor Service, Westlake, Oregon, appeared before the Commission requesting that septic tank installers be certified to approve their own systems. He said in Florence, Oregon, where he does business, they only have a sanitarian available to them two days a week which causes a hardship. He said the establishment of a certification program would relieve some of the burden on the already overworked sanitarians in his area and would also help installers to run their business far more economically. Mr. McCormick's written statement is made a part of the Commission's record on this matter.

Mr. T. J. Osborne, DEQ Subsurface Section, replied that he was in the process of completely rewriting the subsurface rules in response to recent legislation and instructions from the Director. He said the new rules would not deal with septic tank installers being able to approve their own work, but it would be up to the local agency responsible to make the decision on whether or not a system would be inspected.

The Commission asked that the staff return to them as soon as possible with a response to Mr. McCormick's proposal on certification of septic tank installers to inspect their own systems.

AGENDA ITEM H - FIELD BURNING - PUBLIC HEARING AND PROPOSED ADOPTION OF AMENDMENTS TO OREGON AGRICULTURAL BURNING RULES (OAR 340-26-005 THROUGH 26-030); AND TO CONSIDER INCLUSION OF THE PROPOSED AMENDMENTS AND TECHNICAL SUPPORT DOCUMENTATION AS A REVISION TO OREGON'S STATE IMPLEMENTATION PLAN (SIP)

Mr. Scott Freeburn, Air Quality Division, presented a correction page to the proposed rules. This page is made a part of the Commission's record in this matter. Mr. Freeburn indicated that the Department had consulted with Oregon State University and that OSU had no comment.

This public hearing was to allow comments on proposed changes to field burning regulations as well as the technical documents supporting those changes. The proposed rule revisions would allow up to 250,000 acres to be burned in the Willamette Valley each year and comply with state and federal air quality regulations. It is proposed to submit all documents to EPA for approval as a revision to the Oregon State Implementation Plan. EPA has already indicated its general satisfaction with the proposed revision.

It is important to note that the analysis of the additional impact of field burning particulate shows substantial usage (approximately 80 percent) of the allowable 24 hour gross increment in the Lebanon area. Without further study new large sources of particulate matter may not be allowed in the area; however, the analysis used is conservative and based upon a generalization of general activities. The Department is therefore prepared to reanalyze increment usage on a case by case basis for proposed new sources. It is believed this reanalysis, based upon the latest air monitoring data, methodology, and site specific information will likely show less increment usage than the current analysis. In addition, the Department is pursuing means to improve its analytical capability.

Summation

EPA has reviewed the Department's January 23, 1980, State Implementation Plan (SIP) revision submittal and found it unacceptable. In rejecting the submittal EPA identified an extensive list of deficiencies in the submitted documents and indicated that the proposed revision would be disapproved if not withdrawn by the Department.

The Oregon Seed Council, the City of Eugene, and the DEQ collaborated on extensive revisions to the January 23 impact analysis smoke management operational guidelines and rules. EPA has expressed preliminary general satisfaction with the proposed replacement package.

The revised impact analysis addresses many concerns of EPA by resolving previously projected standards violations. However, the revised analysis also identifies considerable consumption of Prevention of Significant Deterioration (PSD) increment in the Lebanon area. Since this analysis is based upon generalized burning scenarios, the Department is prepared to make specific case-by-case reanalysis of PSD increment consumption for new sources based upon the most recent information and air quality data.

The Department seeks adoption of the proposed revised rules and approval of technical support documents after public hearing. The revised rules and technical support documents would then be submitted as a replacement for the previously submitted, January 23, 1980, SIP revision.

Submitting the reworked documents as a replacement for the January 23, 1980, submittal would:

a) Allow previous public notices regarding the January 23, 1980, field burning SIP revision to remain effective.

b) Allow EPA up to four months, from date of receipt of the replacement submittal, for processing of the revision.

Since EPA approval of the proposed SIP revision is expected after June 1, 1980 (statutory deadline for issuance of first-phase permits), the staff proposes, unless otherwise instructed by the Commission, to issue first-phase permits based upon 250,000 acres to individual growers but limit burning, through fire district allocations, to 180,000 acres until such time as the proposed SIP revision is approved. Staff further proposes to operate the smoke management program under the proposed 1980 rules, if adopted. Should the SIP revision be disapproved the Department would immediately reissue allocations to growers based upon 180,000 acres.

Director's Recommendation

Based upon the information set forth in pages 1 through 9 of the Director's April 18, 1980, staff report to the Commission, the testimony in the record of the December 14, 1979, and April 18, 1980, public hearings, and the January 18, 1980, EQC meeting, it is recommended that the Environmental Quality Commission act as follows:

a) Designate as its final Statement of Need for Rule Making the Statement Need set forth in Attachment I to the Director's staff report.

b) Adopt as permanent rules the proposed rules set forth in Attachment II to the Director's staff report, such rules to become effective upon their prompt filing with the Secretary of State.

c) Approve as supporting technical documentation to the proposed rule revision the smoke management operational guidelines set forth in Attachment III and the field burning particulate impact analysis set forth in Attachment IV to the Director's staff report.

d) Instruct the staff to submit, as a replacement for the January 23, 1980, SIP submittal, the revised rules set forth in Attachment II and the additional supporting documentation set forth in Attachments III and IV for approval by the Environmental Protection Agency as a revision to the Oregon State Implementation Plan.

Mr. Terry Smith, City of Eugene, appeared in support of the Director's Recommendation.

Mr. Dave Nelson, Oregon Seed Council, said his group also supported the proposed rule adoption.

Mr. Edwin R. Ivey, City of Lebanon, presented a letter from the Mayor of Lebanon (this letter is made a part of the Commission's record in this matter) which expressed concern about the airshed use. He urged support for the balancing of the uses of the airshed and indicated that the City of Lebanon would become more involved in the field burning issue in the future.

Ms. Jane Newton, Philomath, said she benefited as a consumer from the production offered by field burning.

It was MOVED by Commissioner Densmore, seconded by Commissioner Bishop and carried unanimously that the Director's recommendation, and the amendments offered by Mr. Freeburn, be approved.

AGENDA ITEM I - PROPOSED INTERIM GROUNDWATER QUALITY POLICY

The Commission has previously dealt with a few groundwater problems as they have arisen. Since awareness of groundwater problems is increasing, and since this is a relatively new area of activity for the Commission, the Department prepared this agenda item. The Department recommended approval of the proposed Groundwater Quality Protection Policy as an interim statement of Commission policy.

Director's Recommendation

Based upon the conclusions presented in the report entitled "Groundwater Quality Protection--Background Discussion and Proposed Policy," it is recommended that the Commission:

1. Approve the recommendations presented in Section X, page 52 to 56 of the report, as an interim Statement of Policy.

2. Instruct the staff to accomplish the following tasks:

    a. Print and distribute the report to local governments and interested citizens for review and input.

    b. Schedule public meetings to discuss the report and invite input.

    c. Summarize and evaluate the input from the public and present recommendations to the Commission for further action as follows:

        (1) Present final recommended groundwater protection policy statement based upon public input.

        (2) Seek authorization for formal adoption (rulemaking) of the final recommended policy statements in late fall of this year.

Mr. Scott Lieuallen, Eugene City Council, testified that in addition to the policy statement the Commission needed to consider the cost to property owners, affected land use policies, and what local government would have the responsibility for dealing with problems. He said the Commission needed to recognize the problems of local governments in implementing the proposed policy statement. He was concerned that the policy would force the issue of the local government dealing with the River Road/Santa Clara matter (scheduled for later in the agenda) before they were ready.

Mr. Kent Mathiot, representing Oregon/Washington Task Force on Beaches and Dunes, testified in support of the adoption of the policy.

Mr. Gerritt Rosenthal, Lane Council of Governments, asked for additional time to review the policy and make recommendations. They supported a statewide groundwater policy and asked for additional consideration for nonpoint source control and hazardous waste control.

It was MOVED by Commissioner Burgess, seconded by Commissioner Bishop and carried unanimously that the Director's recommendation be approved.

AGENDA ITEM J - RIVER ROAD/SANTA CLARA SEPTIC TANK MORATORIUM - PUBLIC HEARING TO CONSIDER WHETHER TO CONTINUE, REPEAL OR MODIFY OREGON ADMINISTRATIVE RULE (OAR 340-71-020(9)) AS IT RELATES TO THE CURRENT SEPTIC TANK MORATORIUM IN EFFECT IN THE RIVER ROAD/SANTA CLARA AREA OF LANE COUNTY

This item concerned the River Road/Santa Clara septic tank moratorium. The Commission had considerable involvement with this matter first by authorizing the moratorium in 1978 in response to a request from the Lane County Board of Commissioners, and later by modifying it in 1979.

Director's Recommend

Based upon the findings in the Summation:

1. It is recommended that the Commission act to repeal the current moratorium, OAR 340-71-020(9).

2. It is further recommended that the Commission adopt a temporary regional rule to prevent further groundwater degradation by nitrate-nitrogen in the River Road/Santa Clara area from new development.

3. It is further recommended that the Department be empowered to approve a groundwater protection and remedial action plan for the River Road/Santa Clara area which could allow temporary incremental loads in excess of the 16.7 pounds nitrate-nitrogen per acre per year provided that said plan:

   A. Encompasses all the regional rule area; and

   B. Includes adopted timetables for construction of interim and/or permanent sewage collection, treatment, and disposal facilities.

4. It is further recommended that Department staff be directed to draft a Stipulated Agreement in cooperation with the Lane County Board of Commissioners. Said Agreement shall have as its goal the production by Lane County of a groundwater protection and remedial action plan for the River Road/Santa Clara area.

5. It is further recommended that staff return to the Commission within four (4) months with the signed Stipulated Agreement.

Mr. Harold Rutherford, Lane County Commissioner, took exception to some items in the report. He reminded the Commission that they were not just dealing with the groundwater problem and building lots, but with people. Mr. Rutherford said Lane County realized there was a need for the residents in the River Road/Santa Clara area to develop their property. Mr. Rutherford was in favor of lifting the moratorium as the residents of the area had not experienced any symptoms of excess nitrates.

Mr. Scott Lieuallen, Eugene City Council, testified in support of lifting the moratorium.

Mr. Roy Burns, Lane County, submitted a written statement which supported the lifting of the moratorium. Mr. Burns' statement is made a part of the Commission's record in this matter.

Mr. Gary Chenkin, City of Eugene, submitted a written statement from the Eugene City Manager, Mr. Charles Henry. They urged the Commission consider a wider long-term approach obtainable by employing applicable provisions of the Statewide Planning Goals, as well as local plans, policies, and practices which comply with those goals. This written statement is made a part of the Commission's record in this matter.

Mr. Bob Coller, River Road/Santa Clara resident, asked that the moratorium be lifted. He was opposed to the minimum lot size of one and two-thirds acres, and said the residents didn't want to be committed to expensive sewers when not enough was known about the problem.

Mr. James Hale, River Road/Santa Clara resident, testified that the county's solution was a county service district to provide special services in the area and which would be governed by the county. He also said that the one and two-thirds lot size was not acceptable and would result in the moratorium remaining in effect even if it was lifted. Mr. Hale favored the City showing the RR/SC residents what it had to offer with annexation and then letting the residents decide. In response to a question from the Commission, Mr. Hale said the RR/SC area was too close to the city of Eugene to incorporate on its own, but they could with the approval of the City.

Commissioner Densmore declared a possible conflict of interest as the Mayor of the City of Medford. He said he didn't view this problem as a conflict between governments.

Ms. Melva Barnes, River Road/Santa Clara resident, testified that the area had been on wells for some years successfully. She said the Eugene sewer system was already leaking into the River Road/Santa Clara area and the contamination to their wells was not coming from their septic tanks but from the City of Eugene.

Mr. Gordon Elliot, Eugene, said he was the owner of the largest single parcel of land in the area where he wanted to build a retirement village. Mr. Elliott gave the Commission some background on the problems in the area.

Mr. Richard Klanecky, testified in favor of lifting the moratorium. He said he wanted to be able to sell his property for retirement income. He was in favor of the minimum lot size.

This concluded public testimony on this matter.

In response to Chairman Richards, Director Young said the effect of his recommendation would be that the staff would return to the Commission within four months with a signed Stipulated Agreement. If there were no agreement within that time than the moratorium would have been lifted and a temporary regional rule would be in effect which could describe the densities per acre. What the Department was proposing was that those could be modified. There were a variety of things that could be done in the event an agreement could not be reached.

It was MOVED by Commissioner Densmore, seconded by Commissioner Burgess and carried unanimously that the Director's Recommendation be approved.

AGENDA ITEM K - MULTNOMAH COUNTY GROUNDWATER - REQUEST FOR APPROVAL OF MULTNOMAH COUNTY GROUNDWATER PROTECTION PLAN

Previously the Commission instructed the staff to work with Multnomah County to develop a plan for protection of the east Multnomah County groundwater aquifer. The county has incorporated this groundwater plan as an element of its Comprehensive Land Use Plan.

The Department believes the goal and framework of the groundwater plan is a responsible program that would result in a long-term improvement of groundwater quality.

Director's Recommendation

It is recommended that the EQC approve the Multnomah County East County Groundwater Plan subject to the following provisions and/or courses of action to be pursued by Multnomah County and the Department:

1. Multnomah County is proposing to up-zone areas along the Burnside lightrail corridor. The County wishes to have some and/or all of these high density developments utilize cesspools as a temporary measure. The County will submit this high density report to the DEQ in the near future. The Department's staff will analyze their proposal and submit its findings and recommendations to the EQC for review and approval.

2. The Department believes the basic goal and framework of the Groundwater Plan is a responsible program to improve and protect the groundwater quality. The only real issue is the method of financing the needed improvements. Several statements in the Groundwater Plan indicate the County has assumed that federal financing will be available for all elements of the proposed sewage treatment and collection system, including laterals. The County should realize that sewerage works construction grant funds have been cut in recent years and that local sewerage facilities improvements might have to rely on local or state funding. In fact, sewerage service planning should be based on the assumption that federal funds will not be available. We believe the proposal to up-zone along the Burnside corridor provides an opportunity to construct the necessary interceptors and trunk sewers. Therefore, when Multnomah County submits its high density up-zone plan, the County shall also submit a financial plan on how to accomplish implementing the Groundwater Plan with local funds. We realize that utilizing this approach will probably lengthen the time to fully implement the Groundwater Plan. It is expected that the high density report and local financing plan would be submitted by January 1, 1981.

3. The interim expansion of the Multnomah County Inverness Sewage Treatment Plant may have to be authorized. This expansion would be funded utilizing local monies.

4. The DEQ will review its subsurface sewage disposal rules with regard to cesspools and recommend changes to the EQC this year. In addition, the staff will review the water quality and funding issues and may suggest either rule changes and/or legislative proposals.

Mr. Oliver J. Domreis, Multnomah County, stated that they concurred with the Director's Recommendation.

It was MOVED by Commissioner Densmore, seconded by Commissioner Bishop and carried unanimously that the Director's Recommendation be approved.

AGENDA ITEM M - HAZARDOUS WASTE TREATMENT SITE LICENSING - PROPOSED ADOPTION OF AMENDMENTS TO OREGON ADMINISTRATIVE RULES FOR LICENSING OF HAZARDOUS WASTE TREATMENT SITES (OAR CHAPTER 340, DIVISION 62) AND HAZARDOUS WASTE MANAGEMENT (OAR CHAPTER 340, DIVISION 63)

Due to a high potential for public health and environmental damage, it is necessary that hazardous wastes be controlled from their time of generation through transportation, storage, treatment, and disposal. Rules governing hazardous waste storage and disposal, including licensing, were enacted by the Commission in 1972, 78, and 79; and those governing transportation were enacted by the PUC in 1979. However, we still do not have rules to control hazardous wastes going to treatment facilities (which are generally recycle facilities).

Passage of SB76 by the 1979 Legislature was aimed at closing this void. The rules herein proposed for adoption (Division 62) are based upon this legislation and are primarily the rules which the Department would use to license hazardous waste treatment facilities. Specifically, they are intended to insure that companies which provide the service of hauling away hazardous wastes for recycle do, in fact, have the ability and intention to properly recycle them. The Department has endorsed recycling as the preferable alternative to disposal and intends to promote these treatment facilities to generators of hazardous wastes.

The proposed amendments to Division 63 are generally for the purpose of clarifying language or to reflect recent changes in federal hazard waste legislation.

Director's Recommendation

Based upon the findings in the Summation of the staff report, it is recommended that the Commission adopt the amendments to OAR Chapter 340, Divisions 62 and 63.

It was MOVED by Commissioner Bishop, seconded by Commissioner Burgess and carried unanimously that the Director's recommendation be approved.

AGENDA ITEM O - REQUEST FOR VARIANCE TO SUBSURFACE SEWAGE DISPOSAL RULES--ILLAHEE PLANNED UNIT DEVELOPMENT, DOUGLAS COUNTY

The developer of Illahee Planned Unit Development in Douglas County requested a variance from the subsurface rule that establishes disposal trench width at 24 inches. He requested a variance that would allow 8-inch wide trenches to be used with a pressure distribution system.

The developer and his consultant contend that due to excellent drainage qualities of the soil and pressure distribution system proposed it is unreasonable to require disposal trenches to be 24 inches in width. The variance, if granted, would conserve resources (washed drainfield rock), reduce system costs while providing a workable disposal system.

Director's Recommendation

Based upon the findings in the Summation of the staff report, it is recommended that the variance request be granted.

It was MOVED by Commissioner Bishop, seconded by Commissioner Burgess and carried unanimously that the Director's Recommendation be approved.

AGENDA ITEM P - CERTIFICATION OF PLANS FOR SEWERAGE SYSTEM AS ADEQUATE TO ALLEVIATE A HEALTH HAZARD (PURSUANT TO ORS 222.898) FOR AN AREA CONTIGUOUS TO THE CITY OF PORTLAND (SOUTHWEST LESSER ROAD AREA)

This item involved Commission approval or disapproval of the adequacy of the City of Portland's plan, specifications, and timetable to remove or alleviate conditions dangerous to public health within the Southwest Lesser Road area of the City.

Summation

1. Pursuant to the provisions of ORS 222.850 to 222.915, the State Health Division issued an order adopting findings and certifying a copy of Division's finding to the city of Portland.

2. The city has submitted preliminary plans and specifications together with a time schedule to the DEQ for review.

3. ORS 222.898(1) requires the Commission to review the preliminary plans and other documents submitted by the city within 60 days of receipt.

4. The sanitary facilities proposed by said plans and specifications will remove the conditions dangerous to public health within the area, and the proposed time schedule is reasonable.

5. ORS 222.898(2) requires the Commission to certify to the city its approval if it considers the proposed facilities and time schedule adequate to remove or alleviate the dangerous conditions.

Director's Recommendation

Based upon the findings in the Summation, it is recommended that the Commission approve the proposal of the city of Portland and certify said approval to the city.

It was MOVED by Commissioner Burgess, seconded by Commissioner Bishop and carried unanimously that the Director's recommendation be approved.

AGENDA ITEM Q - GRANTS PASS AIR QUALITY - STATUS REPORT PER COMMISSION REQUEST OF AUGUST 25, 1978

This report was in response to a directive from the Commission in August 1978 on the subject of Grants Pass air quality. An update of Department activities and Grants Pass air quality was presented for Commission discussion.

Summation

1. A petition was presented to the EQC by the Josephine County Medical Society Auxiliary and The Friends of Josephine, Inc. at the August 25, 1978, meeting of the Commission to have the Grants Pass area designated a nonattainment area and an Air Quality Maintenance Area.

2. The Commission denied the petition based on lack of evidence that the area should be designated nonattainment. The Commission asked for a future report to assess new information and data that was to be collected.

3. Monitoring sites for ozone and carbon monoxide were established in 1979. The one existing particulate monitor has continued in operation and an additional particulate monitor is still to be established. A report, Choices in Life and Breath was prepared by the city of Grants Pass.

4. Monitoring data for carbon monoxide showed no violations of air quality standards during the winter of 1979. Ozone concentrations exceeded the state standard on one day in 1979. The state standard and federal secondary standard for particulates were violated during 1979 and the three previous years. Preliminary reports indicate soil and road dust to be a major source contributing to the total particulate loading in Grants Pass.

5. Weather conditions during the 1979 summer ozone season were not conducive to ozone formation. Yearly rainfall and other weather conditions that could affect particulate concentrations were about average.

6. Continued monitoring during the 1980 summer ozone season is scheduled. Carbon monoxide monitoring during the 1980-81 winter season is scheduled.

7. The Choices in Life and Breath report indicated potential ozone and particulate air quality problems in the area through the year 2000. The particulate projections underpredicted ambient concentrations for 1979.

8. The Medford Aerosol Characterization Study includes provisions for special sampling at the existing Grants Pass particulate site. Analysis of the special sampling will provide information on the sources contributing to the particulate problem in Grants Pass. A draft interim report is due July 1, 1980, and the final report is due January 30, 1981.

9. Data from 1980-81 monitoring needs to be evaluated for a better assessment of ozone and carbon monoxide problems in Grants Pass.

Director's Recommendation

Based upon the Summation, the Commission should direct the Department to defer any change in attainment status designation until the Medford Aerosol Characterization Study results are available and sources contributing to the particulate problem are identified.

Mr. John L. Smith Southern Oregon Timber Industries Association, expressed concern about the designation of Grants Pass as a nonattainment area. He said they concurred with the staff recommendation on deferal of any change in Grants Pass's status until the Medford Aerosol Characterization Study was completed. Mr. Smith's written statement is made a part of the Commission's record on this matter.

It was MOVED by Commissioner Bishop, seconded by Commissioner Burgess and carried unanimously that the Director's recommendation be approved.

There being no further business, the formal meeting was adjourned.

LUNCH MEETING

1. Program Evaluation Study Status Report - Mr. Don Seuffert of the Program Evaluation Study Team informed the Commission that the report was proceeding on schedule.

2. Status Report on effect of EPA sludge disposal rules on Oregon practice of using sludge to fertilize food chain crops. Mr. John Vlastelicia, EPA Oregon Operation's Office, reported to the Commission on this matter.

Respectfully submitted,

Carol A. Splettstaszer

Carol A. Splettstaszer
Recording Secretary

CAS:f
MF1445

Environmental Quality Commission

522 S.W. 5th AVENUE, P.O. BOX 1760, PORTLAND, OREGON 97207 PHONE (503) 229-5696

MEMORANDUM

To: Environmental Quality Commission

From: Director

Subject: Agenda Item B, April 18, 1980, EQC Meeting

Air Quality Division Permits February, 1980 and March, 1980 Program Activity Reports

Discussion

Attached are the Air Quality Division Permits February, 1980, and March, 1980, Program Activity Reports for the Department. Air Quality Division's March permit section is unavailable.

ORS 468.325 provides for Commission approval or disapproval of plans and specifications for construction of air contaminant sources.

Water Quality and Solid Waste facility plans and specifications approvals or disapprovals and issuance, denials, modifications and revocations or permits are prescribed by statutes to be functions of the Department, subject to appeal to the Commission.

The purposes of this report are:

1) to provide information to the Commission regarding the status of reported program activities and an historical record of project plan and permit actions;

2) to obtain confirming approval from the Commission on actions taken by the Department relative to air contamination source plans and specifications; and

3) to provide logs of civil penalties assessed and status of DEQ/EQC contested cases.

Recommendation

It is the Director's Recommendation that the Commission take notice of the reported program activities and contested cases, giving confirming approval to the air contaminant source plans and specifications listed on pages 3 and 4 of this report.

Bill

WILLIAM H. YOUNG

M.Downs:ahe
229-6485
04-04-80

Contains Recycled Materials

DEQ-46

DEPARTMENT OF ENVIRONMENTAL QUALITY

Monthly Activity Report

February, 1980

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DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Air Quality Division (Reporting Unit) — February, 1980 (Month and Year)

SUMMARY OF AIR PERMIT ACTIONS

	Permit Actions Received Month	Permit Actions Received FY	Permit Actions Completed Month	Permit Actions Completed FY	Permit Actions Pending	Sources Under Permits	Sources Reqr'g Permits
Direct Sources							
New							
Existing	INFORMATION NOT AVAILABLE DUE TO						
Renewals							
Modifications	COMPUTER BREAKDOWN						
Total							
Indirect Sources							
New	4	18	0	25	12		
Existing							
Renewals							
Modifications	0	2	0	2	0		
Total	4	20	0	27	12	63	

GRAND TOTALS

Number of Pending Permits

Comments

INFORMATION NOT AVAILABLE DUE TO COMPUTER BREAKDOWN

15 Technical Assistances
8 A-95's

DEPARTMENT OF ENVIRONMENTAL QUALITY

Monthly Activity Report

March, 1980

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DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

AQ, WQ, SW Divisions (Reporting Unit) — March, 1980 (Month and Year)

SUMMARY OF PLAN ACTIONS

	Plans Received		Plans Approved		Plans Disapproved		Plans
	Month	Fis.Yr.	Month	Fis.Yr.	Month	Fis.Yr.	Pending
Air							
Direct Sources	12	140	13	148	1	1	54
Water							
Municipal	62	653	55	654	0	0	29
Industrial	8	91	4	83	0	0	32
Solid Waste							
General Refuse	1	20	1	15	0	3	7
Demolition	0	4	0	4	0	1	0
Industrial	1	15	0	5	0	0	13
Sludge	0	4	1	3	0	0	0
Hazardous Wastes	0	0	0	0	0	0	0
GRAND TOTAL	84	927	74	912	1	1	135

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Air Quality Division (Reporting Unit) — March, 1980 (Month and Year)

PLAN ACTIONS COMPLETED

County	Name of Source/Project /Site and Type of Same	Date of Action	Action
Direct Stationary Sources			
Multnomah (NC 1407)	Time Oil Co. Bottom loading and vapor recovery	03/12/80	Approved.
Multnomah (NC 1408)	Portland Terminals Co., Inc. Vapor Recovery Unit	03/12/80	Approved.
Multnomah (NC 1524)	Time Oil Company One internal floating roof	03/12/80	Approved.
Multnomah (NC 1539)	Mobil Oil Corp. Vapor recovery & roof seals	03/14/80	Approved.
Multnomah (NC 1543)	Gilsonite, Inc. $CaCO_3$ & asbestos baghouse	03/13/80	Approved.
Multnomah (NC 1549)	Port of Portland Rehabilitation of Terminal No. 4	03/14/80	Approved.
Jackson (NC 1559)	Reichhold Chemicals Methanol tank emission control	03/25/80	Approved.
Hood River (NC 1563)	Glacier Ranch One orchard fan	02/22/80	Approved.
Deschutes (NC 1569)	Willamette Industries, Inc. Baghouse on No. 1 reclaim mill	03/14/80	Approved.
Linn (NC 1571)	Duraflake Modification to paint line	03/14/80	Approved.

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Air Quality Division (Reporting Unit) — March, 1980 (Month and Year)

PLAN ACTIONS COMPLETED

County	Name of Source/Project /Site and Type of Same	Date of Action	Action
Direct Stationary Sources (cont.)			
Linn (NC 1572)	Southwest Forest Industries Plant No. 1, Mill No. 1 veneer dryer	03/07/80	Approved.
Multnomah (NC 1575)	Time Oil Co. Floating roof	03/12/80	Approved.
Multnomah (NC 1582)	Aeroquip Corp. Cyclone	03/13/80	Approved.

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Water Quality Division (Reporting Unit) — March, 1980 (Month and Year)

PLAN ACTIONS COMPLETED

County	Name of Source/Project /Site and Type of Same	Date of Action	Action
Municipal Waste Sources - 55			
Lane	E. Bank Interceptor Contract C-31 MWMC Eugene/Springfield	03/18/80	PA
Lane	E. Bank Interceptor Contract M-31, MWMC Eugene/Springfield	03/18/80	PA
Lane	E. Bank Interceptor Contract M-32, MWMC Eugene/Springfield	03/18/80	PA
Lane	E. Bank Interceptor Contract M-33, MWMC Eugene/Springfield	03/18/80	PA
Clackamas	Welches Sewers & Pumping Stations, Hoodland Service District	03/04/80	PA
Lane	E. Bank Interceptor Contract C-33, Sch. A & B MWMC - Eugene/Springfield	03/18/80	PA
Lane	E. Bank Interceptor Contract C-34, Sch. A & B MWMC - Eugene/Springfield	03/18/80	PA
Linn	Hidden Gardens Subdivision Lebanon	03/21/80	PA
Douglas	Brinkerhoff & Peters Canyonville	03/11/80	PA

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Water Quality Division (Reporting Unit) — March, 1980 (Month and Year)

PLAN ACTIONS COMPLETED

County	Name of Source/Project /Site and Type of Same	Date of Action	Action
Municipal Waste Sources - Continued			
Washington	S.W. Kimberly Street & Lynz Court - Tigard USA - Durham	03/04/80	PA
Yamhill	Paul F. Little Partition Newberg	03/06/80	PA
Clatsop	Singing Sands Village Cannon Beach	03/10/80	PA
Lincoln	Collection System Imp Phase 2 Roads End S.D.	03/13/80	PA
Multnomah	N. Lombard Waste Water Pumping Station Portland - Columbia Blvd.	03/10/80	PA
Multnomah	Cinnamon Ridge No. 2 Gresham	03/26/80	PA
Washington	Rimington Sanitary Sewer USA - Rock Creek	03/11/80	PA
Douglas	Forest Hills Trunk Replacement - Reedsport	03/12/80	PA
Marion	Community Development Block Grant - Salem	03/19/80	PA
Washington	Sills No. 12 Local Improvement District Forest Grove	03/12/80	PA

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Water Quality Division (Reporting Unit) — March, 1980 (Month and Year)

PLAN ACTIONS COMPLETED

County	Name of Source/Project /Site and Type of Same	Date of Action	Action
Municipal Waste Sources - Continued			
Clackamas	Utility Vault System Wilsonville	03/25/80	PA
Clackamas	J. Charles Downs Clackamas Co. Service District No. 1	03/24/80	PA
Josephine	William Groves Harbeck-Fruitdale S.D.	03/12/80	PA
Lane	Contract C-32 MWMC	03/18/80	PA
Clackamas	Christy Addition Subdivision West Linn	03/18/80	PA
Marion	Bracken Field Salem	03/20/80	PA
Wahington	130th Ave. Sanitary Sewer Plan USA - Durham	03/21/80	PA
Linn	Hidden Gardens Lebanon	03/10/80	PA
Marion	Sewerage Improve Gervais	03/10/80	PA
Washington	Maslen Park USA - Rock Creek	03/21/80	PA
Lane	Birdnest Subdivision Eugene	03/25/80	PA

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Water Quality Division (Reporting Unit) — March, 1980 (Month and Year)

PLAN ACTIONS COMPLETED

County	Name of Source/Project /Site and Type of Same	Date of Action	Action
Municipal Waste Sources - Continued			
Multnomah	Rolling Hills - Phase 1 Portland-Columbia Blvd.	03/24/80	PA
Lincoln	Union Oil Station Northeast Hwy. 101 Lincoln City	03/24/80	PA
Multnomah	Flood Oak Industrial Park Revised - Multnomah Co.	03/24/80	PA
Washington	Frease Extension USA - Rock Creek	03/24/80	PA
Multnomah	Dove Park Project SW 29th & SW Lauradell Place/Portland-Tryon Cr.	03/20/80	PA
Marion	1979-80 Manhole Construction Salem	03/25/80	PA
Linn	Triple H Investments Diamond Hill Linn County	03/20/80	PA
Multnomah	Cinnamon Ridge Gresham	03/25/80	PA
Clackamas	Valley View Terrace (Mt. Talbert System) Clackamas Co. Service District No. 1	03/25/80	PA
Douglas	Lane-Fullerton Extension Roseburg	03/17/80	PA

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Water Quality Division (Reporting Unit) — March, 1980 (Month and Year)

PLAN ACTIONS COMPLETED

County	Name of Source/Project /Site and Type of Same	Date of Action	Action
Municipal Waste Sources - Continued			
Marion	Ferry St. Between Front & Liberty - Salem	03/25/80	PA
Umatilla	Rice Addition, Phase B Pendleton	03/26/80	PA
Umatilla	Schwab LID Pendleton	03/26/80	PA
Umatilla	Interceptor Sewers, Phase 2 Hermiston	03/26/80	PA
Marion	Ames Addition & Vicinity Silverton	03/27/80	PA
Jackson	Theron Stiehl Sanitary Sewer - Rogue River	03/27/80	PA
Marion	Royalann Estates Salem	03/26/80	PA
Benton	N.W. 17th Street Ext. Corvallis	03/26/80	PA
Benton	Van Buren to Harrison Replacement - Corvallis	03/26/80	PA
Jackson	Heritage Estates Medford	03/27/80	PA
Jackson	Greenbrae Estates No. 5 Medford	03/27/80	PA

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Water Quality Division (Reporting Unit) — March, 1980 (Month and Year)

PLAN ACTIONS COMPLETED

County	Name of Source/Project /Site and Type of Same	Date of Action	Action
Municipal Waste Sources - Continued			
Polk	S. E. Uglow Street Dallas	03/27/80	PA
Polk	S. E. Walnut Dallas	03/27/80	PA
Multnomah	Cinnamon Ridge Offsite Gresham	03/10/80	PA
Union	Island City Sewer System Island City	03/24/80	PA

PA=Provisional Approval

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Water Quality Division (Reporting Unit) — March 1980 (Month and Year)

PLAN ACTIONS COMPLETED

County	Name of Source/Project /Site and Type of Same	Date of Action	Action
Industrial Waste Sources (4)			
Lane	Hemenway Farms, Cottage Grove, Screen and Holding Lagoon	3/1/80	Approved
Marion	Clyde Bauman Woodburn, Manure Tank & Honey Wagon	3/1/80	Approved
Yamhill	Dayton Sand & Gravel Dayton, New Crusher and Screening	3/14/80	Approved
Multnomah	Boeing Company Portland, Waste-Water Lagoon and Laboratory	3/26/80	Approved

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Solid Waste Division (Reporting Unit) — March, 1980 (Month and Year)

PLAN ACTIONS COMPLETED

County	Name of Source/Project /Site and Type of Same	Date of Action	Action
Linn	Cox Lagoon Existing Sludge Lagoon Operational Plan	2-29-80	Approved
Lane	Marcola Transfer Station Existing Transfer Station Operational Plan Amendment	3-13-80	Approved

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Water Quality Division (Reporting Unit) — March , 1980 (Month and Year)

SUMMARY OF WATER PERMIT ACTIONS

	Permit Actions Received				Permit Actions Completed				Permit Actions Pending		Sources Under Permits	Sources Reqr'g Permits
	Month		Fis.Yr.		Month		Fis.Yr.					
	*	/**	*	/**	*	/**	*	/**	*	/**	* /**	* /**
Municipal												
New	0	/1	1	/ 7	0	/3	1	/11	1	/ 7		
Existing	0	/0	0	/ 2	0	/0	0	/ 0	6	/ 1		
Renewals	2	/0	26	/ 4	0	/1	28	/ 1	36	/ 6		
Modifications	0	/0	3	/ 0	0	/0	2	/ 0	4	/ 0		
Total	2	/1	30	/13	0	/3	31	/12	47	/14	246/95	252/103
Industrial												
New	0	/4	5	/18	0	/1	4	/ 6	5	/11		
Existing	0	/0	0	/ 2	0	/0	5	/ 3	1	/ 1		
Renewals	6	/3	75	/18	3 1/	/5 2/	47	/ 6	77	/14		
Modifications	0	/0	4	/ 0	2	/0	4	/ 0	5	/ 0		
Total	6	/7	84	/38	5	/6	60	/15	88	/26	402/133	407/147
Agricultural (Hatcheries, Dairies, etc.)												
New	0	/0	3	/ 3	0	/1 3/	1	/ 5	4	/ 0		
Existing	0	/0	0	/ 2	0	/0	0	/ 1	0	/ 0		
Renewals	0	/0	35	/ 0	0	/0	0	/ 1	35	/ 0		
Modifications	0	/0	0	/ 0	0	/0	0	/ 0	0	/ 0		
Total	0	/0	38	/ 5	0	/1	1	/ 7	39	/ 0	64/25	68/25
GRAND TOTALS	8	/8	152	/56	5	/10	92	/34	174	/40	712/253	727/275

* NPDES Permits
** State Permits

1/ Includes 1 permit cancelled and 2 dropped for lack of renewal application.
2/ Includes 1 permit cancelled and 1 dropped for lack of renewal application.
3/ Permit cancelled.

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Water Quality Division (Reporting Unit) — March, 1980 (Month and Year)

PERMIT ACTIONS COMPLETED

County	Name of Source/Project /Site and Type of Same	Date of Action	Action
NPDES PERMITS			
Jackson	Nikkel Lumber Company	1/18/80	NPDES Permit Cancelled
Clackamas	South Fork Water Board	3/13/80	Discharge Eliminated
Lane	Northside Inc.	3/13/80	No Longer Active
STATE PERMITS			
Union	Byron W. Hawkins	1/18/890	State Permit Cancelled
Lane	U.S. Army Corps of Engr. Cottage Grove Lake	3/7/800	State Permit Issued
Multnomah	Ross Island Sand & Gravel Co.	3/7/80	State Permit Issued
Columbia	Multnomah Plywood Corp.	3/11/80	State Permit Issued
Lane	Ford Motor Co.	3/24/80	State Permit Issued
Deschutes	Seventh Mountain County S.D.	3/24/80	State Permit Issued
Lane	Cone Lumber Company	3/24/80	State Permit Renewed
Jackson	U.S. Army Corps of Engr. Grouse Creek Park	3/28/80	State Permit Issued
Coos	Harrison Floyd	3/80	State Permit Cancelled
Union	North Star Mining	3/80	State Permit Cancelled

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Water Quality Division (Reporting Unit) — March, 1980 (Month and Year)

PERMIT ACTIONS COMPLETED

County	Name of Source/Project /Site and Type of Same	Date of Action	Action
MODIFICATIONS			
Polk	Oregon Fruit Products	3/24/80	Addendum No. 1 Issued
Lane	Murphy Co. - Florence Green Veneer	3/24/80	Addendum No. 1 Issued

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Solid Waste Division (Reporting Unit) — March, 1980 (Month and Year)

SUMMARY OF SOLID AND HAZARDOUS WASTE PERMIT ACTIONS

	Permit Actions Received		Permit Actions Completed		Permit Actions Pending	Sites Under Permits	Sites Reqr'g Permits
	Month	FY	Month	FY			
General Refuse							
New	-	3	-	5	1		
Existing	-	-	-	1	10		
Renewals	3	23	3	19	21		
Modifications	-	16	3	25	3		
Total	3	42	6	50	35	164	166
Demolition							
New	-	-	-	-	1		
Existing	-	1	-	2	-		
Renewals	-	4	1	2	2		
Modifications	-	-	-	5	-		
Total	0	5	1	9	3	20	20
Industrial							
New	2	4	-	2	5		
Existing	-	-	-	-	-		
Renewals	4	22	2	7	18		
Modifications	-	2	-	1	1		
Total	6	28	2	10	24	98	98
Sludge Disposal							
New	-	-	-	1	-		
Existing	-	1	1	1	-		
Renewals	-	1	-	1	-		
Modifications	-	-	-	-	-		
Total	0	2	1	3	0	14	14
Hazardous Waste							
New	-	-	-	-	-		
Authorizations	16	108	13	118	7		
Renewals	-	-	-	-	-		
Modifications	-	-	-	-	-		
Total	16	108	13	118	7	1	1
GRAND TOTALS	25	185	23	190	69	297	299

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Solid Waste Division (Reporting Unit) — March, 1980 (Month and Year)

PERMIT ACTIONS COMPLETED

County	Name of Source/Project /Site and Type of Same	Date of Action	Action
Domestic Refuse Facilities (6)			
Tillamook	Manzanita Disposal Site Existing Landfill	03/03/80	Permit Amended
Tillamook	Pacific City Disposal Site Existing Landfill	03/03/80	Permit Amended
Tillamook	Tillamook Disposal Site Existing Landfill	03/03/80	Permit Amended
Columbia	Mickey's Landfill Existing Facility	03/18/80	Permit Renewed
Columbia	Vernonia Landfill Existing Facility	03/18/80	Permit Renewed
Lake	Lakeview Disposal Site Existing Landfill	03/18/80	Permit Renewed
Demolition Waste Facilities (1)			
Benton	Tremaine Demolition Site Existing Landfill	03/03/80	Permit Renewed
Industrial Waste Facilities (2)			
Linn	Geil's Pond Landfill Existing Wood Waste Site	03/21/80	Permit Renewed
Douglas	Roseburg Lumber Co. Existing Wood Waste Site	03/17/80	Letter Authorization Renewed
Sludge Disposal Facilities (1)			
Lincoln	Clark Sludge Site Existing Facility	03/20/80	Permit Issued

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Solid Waste Division (Reporting Unit) — March, 1980 (Month and Year)

HAZARDOUS WASTE DISPOSAL REQUESTS

CHEM-NUCLEAR SYSTEMS, GILLIAM CO.

WASTE DESCRIPTION

Date	Type	Source	Quantity Present	Quantity Future
Disposal Requests Granted (13)				
Oregon (7)				
6	Pesticides	Mushroom Farm	6,220 lb.	5,000 lb/yr
6	Paint Waste and Waste Solvent	Can Manufac. Plant	16 drums	72 drums/yr
10	Waste Solvent and Chromic Acid	Electronic	11,400 gal.	17,000 gal/mo
11	Spent 5% HCl Solution	Electric Equipment	5,000 gal.	250,000 gal/yr
13	Spent H_2SO_4 Solution	Car Wash Equipment	4,500 gal.	9,000 gal/yr
14	PCB Transformers and Capacitors	Paper Mill	600 cu. ft.	0
25	Waste From Staining Wood	Building Supply	800 gal.	800 gal/yr
Washington (6)				
6	Laboratory Chemicals	Hospital	11 drums	0
12	Waste Water Containing Hydrosulfite	Chemical Plant	30,000 gal.	120,000 gal/yr
14	PCB Wastes	Utility	600 cu. ft.	600 cu. ft/yr

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Solid Waste Division (Reporting Unit) — March, 1980 (Month and Year)

HAZARDOUS WASTE DISPOSAL REQUESTS

CHEM-NUCLEAR SYSTEMS, GILLIAM CO.

WASTE DESCRIPTION

Date	Type	Source	Quantity Present	Quantity Future
Disposal Requests Granted (13)				
Washington (continued)				
18	Aqueous Caustic Cleaning Solution	Industrial Cleaning Service	4,000 gal.	4,000 gal/yr
25	Paint Booth Waste	Aerospace	30,000 gal.	150,000 gal/yr
25	Monoethanolamine Reclaimer Bottoms	Chemical Plant	14 drums	28 drums/yr

CIVIL PENALTY ASSESSMENTS

Department of Environmental Quality
1980

CIVIL PENALTIES ASSESSED DURING MONTH OF March, 1980:

Name and Location of Violation	Case No. & Type of Violation	Date Issued	Amount
Permapost Products Co., Washington County	WQ-NWR-80-33 Operating a waste treatment and disposal facility without a permit.	03/07/80	$ 500
Tom C. Alford et. al. dba/Athena Cattle Feeders, Umatilla County	WQ-ER-80-35 Discharged animal wastes to public waters.	03/20/80	500
Gary Kronberger dba/Hindman's Septic Tank Service, Lane County	SS-WVR-80-36 Installed a subsurface sewage disposal system without a permit.	03/20/80	50
Adrian Van Dyk, Josephine County	SS-WVR-80-27 Failure to connect to an approved sewage disposal system	03/20/80	500
David B. Reynolds, Josephine County	SS-SWR-80-11 Failure to connect to an approved sewage disposal system.	03/20/80	500
J. R. Simplot Co., Umatilla County	WQ-ER-79-27 Various violations of Company's WPCF permit.	03/24/80	20,000
Burlington Northern, Inc., Deschutes County	AQ-CR-80-44 Open burning railroad ties without permit.	03/27/80	200

STATUS OF PAST CIVIL PENALTY ACTIONS TAKEN IN 1980:

Name	Case No.	Date Issued	Amount	Status
Scheler Corporation	AQ-WVR-80-15	01/22/80	$ 500	Contested 02/08/80
Lauren Karstens	AQ-WVR-80-03	01/22/80	1,500	Contested 01/28/80

STATUS OF PAST CIVIL PENALTY ACTIONS TAKEN IN 1980:

Name	Case No.	Date Issued	Amount	Status
David Taylor	AQ-WVR-80-04	01/22/80	$ 860	Contested 02/07/80
Dennis Glaser dba/ Mid Valley Farms, Inc.	AQ-WVR-80-13	01/22/80	2,200	Contested 02/07/80
City of St. Helens	WQ-NWR-80-02	01/22/80	2,000	Paid 02/12/80
American-Strevell, Inc.	WQ-NWR-80-05	01/22/80	500	Contested 02/05/80
Mid-Oregon Crushing Co.	AQ-CR-80-16	02/11/80	600	Default order issued 3/20/80.
James Judd dba/ Jim Judd Backhoe Service	SS-SWR-80-18	02/11/80	100	Filed late. Settlement negotiations in progress.
Robert W. Harper	AQ-WVR-80-14	02/11/80	500	Contested 2/26/80.
George Heidgenkin	WQ-WVR-80-21	02/19/80	1,000	Returned unclaimed. Notice is being hand-delivered.
Westbrook Wood Products	AQ-SWR-80-25	02/20/80	3,125	Motion for default order filed 3/20/80.
Hilton Fuel Supply Co.	AQ-SWR-80-30	02/25/80	200	Contested 3/17/80

ACTIONS	LAST MONTH	PRESENT MONTH
Preliminary Issues	5	6
Discovery	2	1
Settlement Action	2	4
Hearing to be Scheduled	9	5
Hearing Scheduled	1	6
HO's Decision Due	7	4
Brief	1	0
Inactive	2	2
SUBTOTAL of Active Files	29	28
HO's Decision Out/Option for EQC Appeal	0	2
Appealed to EQC	2	1
EQC Appeal Complete/Option for Court Review	1	1
Court Review Option Pending or Taken	1	2
Case Closed	3	2
TOTAL Cases	36	36

KEY

ACD	Air Contaminant Discharge Permit
AQ	Air Quality
AQ-NWR-76-178	Violation involving Air Quality occurring in Northwest Region in the year 1976; 178th enforcement action during 1976.
CLR	Chris Reive, Investigation & Compliance Section
Dec Date	Date of either a proposed decision of hearings officer or a decision by Commission
$	Civil Penalty Amount
ER	Eastern Region
Fld Brn	Field Burning incident
RLH	Robb Haskins, Assistant Attorney General
Hrngs	Hearings Section
Hrng Rfrl	Date when Investigation & Compliance Section requests Hearings Section to schedule a hearing
Hrng Rqst	Date agency receives a request for hearing
JHR	John Rowan, Investigation & Compliance Section
VAK	Van Kollias, Investigation & Compliance Section
LKZ	Linda Zucker, Hearings Officer
LMS	Larry Schurr, Investigation & Compliance Section
MWR	Midwest Region (now WVR)
NP	Noise Pollution
NPDES	National Pollutant Discharge Elimination System wastewater discharge permit
NWR	Northwest Region
FWO	Frank Ostrander, Assistant Attorney General
P	At beginning of case number means litigation over permit or its conditions
PR	Portland Region (now NWR)
PNCR	Portland/North Coast Region (now NWR)
Prtys	All parties involved
Rem Order	Remedial Action Order
Resp Code	Source of next expected activity on case
SNCR	Salem/North Coast Region (now WVR)
SSD	Subsurface Sewage Disposal
SW	Solid Waste
SWR	Southwest Region
T	At beginning of case number means litigation over tax credit matter
Transcr	Transcript being made of case
Underlined	Different status or new case since last month contested case log
WVR	Willamette Valley Region
WQ	Water Quality

March 1980
DEQ/EQC Contested Case Log

Pet/Resp Name	Hrng Rqst	Hrng Rfrrl	DEQ Atty	Hrng Date	Resp Code	Case Type & No.	Case Status
FAYDREX, INC.	05/75	05/75	RLH	11/77	Hrngs	03-SS-SWR-75-02 64 SSD Permits	Decision Due
MEAD and JOHNS et al	05/75	05/75	RLH		All	04-SS-SWR-75-03 3 SSD Permits	Awaiting disposition of Faydrex
PGE (Harborton)	02/76	02/76	RPU		Prtys	01-P-AQ-PR-76-01	Exceptions due 03/31/80
MIGNOT, E. W. & Dorothy	11/76	11/76	LMS	02/77		$400 06-SW-SWR-288-76	Court of Appeals review pending.
MAGNESS, William	07/77	07/77	LMS	11/77	Dept	$1150 Total 06-SS-SWR-77-142	Department preparing order of dismissal.
GRANTS PASS IRRIG	09/77	09/77	RLH	04/17/80	Prtys	$10,000 10-WQ-SWR-77-195	Hearing set in Grants Pass
POWELL, Ronald	11/77	11/77	RLH	01/23/80	Resp	$10,000 Fld Brn 12-AQ-MWR-77-241	Record still open.
HAWKINS, Roy	03/78	03/78	FWO	12/17/79	Hrngs	$5000 15-AQ-PR-77-315	Decision Due
HAWKINS TIMBER	03/78	03/78	FWO			$5000 15-AQ-PR-77-314	No action pending hearing in companion case
WAH CHANG	04/78	04/78	RLH		Prtys	16-P-WQ-WVR-2849-J NPDES Permit (Modification)	Preliminary Issues
WAH CHANG	11/78	12/78	RLH		Prtys	08-P-WQ-WVR-78-2012-J	Preliminary Issues
STIMPSON LUMBER CO.	05/78		FWO	07/24/79	Hrngs	Tax Credit Cert. 01-T-AQ-PR-78-010	Draft decision issued to attorneys to refine issues.
VOGT, Eugene & Josephine	06/78	06/78	RLH	11/08/78	Hrngs	$250 Civil Penalty 05-SS-SWR-78-70	EQC modified H.O.'s Order; Resp's appeal option expires 05/19/80.
WELCH, Floyd & Virginia, et al	10/78	10/78	RLH		Prtys	07-P-SS-CR-78-134	Hearing deferred pending settlement.
REEVE, Clarence	10/78		RLH		Prtys	06-P-SS-CR-78-132 & 133	Hearing deferred pending settlement
WAH CHANG	02/79	02/79	RLH		Hrngs	$3500 12-WQ-WVR-78-187	Settlement action.
DON OBRIST, INC.	07/79	07/79	RLH		Dept	Solid Waste Permit Amendment 07-P-SW-213-NWR-79	Plans sent to Department for approval
~~CALLAHAN, Gerald R.~~	~~09/79~~	~~09/79~~	~~CLR~~	~~01/09/80~~	~~Hrngs~~	~~09-SS-ER-79-61 Civil Penalty of $150~~	On 03/21/80 EQC approved stipulated settlement mitigating penalty to $0.
BARKER, Michael	10/79	10/79	LMS		Hrngs	12-SS-SWR-79-56 SS Permit revocation	Decision Due
PETER, Ernie	10/79	10/79	CLR	12/05/79	Resp	13-AQ-WVR-79-86 Open Field Burning Civil Penalty of $500	Hearing Officer's Order issued 03/07/80; EQC review deadline is 04/07/80.
MALLORY & MALLORY INC.	11/79	11/79	JHR	01/10/80	Hrngs	14-AQ-CR-79-101 Open Burning Civil Penalty	Decision Due
BRIDENSTINE	11/08/79	11/20/79			Resp	15-SS-SWR-79-60 Permit denial	Court of Appeals review deadline of 04/22/80.
TIDEWATER BARGE LINES, INC.	12/05/79	12/05/79	RLH		Hrngs	16-WQ-ER-79-148 WQ Civil Penalty of $5,000	To be Scheduled
M/V TOYOTA MARU No. 10	12/10/79	12/12/79	RLH		Prtys	17-WQ-NWR-79-127 Oil Spill Civil Penalty of $5,000	Discovery
~~COLUMBIA RESOURCES CORP.~~	~~12/03/79~~	~~12/12/79~~	~~CLR~~		~~Hrngs~~	~~18-AQ-NWR-79-125 Civil Penalty of $500~~	~~03/21/80 EQC approved stipulated settlement mitigating penalty to $100.~~

March 1980
DEQ/EQC Contested Case Log

Pet/Resp Name	Hrng Rqst	Hrng Rfrrl	DEQ Atty	Hrng Date	Resp Code	Case Type & No.	Case Status
COLUMBIA SAND & GRAVEL PIT	12/12/79	12/14/79			Prtys	19-P-SW-329-NWR-79 Permit Denial	Preliminary Issues
FORRETTE, Gary	12/20/79	12/21/79	RLH		Hrngs	20-SS-NWR-79-146 Permit Revocation	To be Scheduled
AMERICAN-STREVELL	02/01/80	02/05/80	LMS	06/12/80	Hrngs	01-WQ-WVR-80-05 Oil Spill Civil Penalty of $500	Hearing Set in Portland at 9 a.m.
GLASER, Dennis F. dba MID-VALLEY FARMS, INC.	02/06/80	02/07/80	CLR	05/21/80	Prtys	02-AQ-WVR-80-13 Open Field Burning Civil Penalty of $2,200	Hearing Set in Albany at 10 a.m.
SCHELER CORP.	02/05/80	02/08/80	LMS	05/05/80	Hrngs	03-AQ-WVR-80-15 Open Field Burning Civil Penalty of $500	Hearing Set in Albany at 10 a.m.
TAYLOR, David R.	02/04/80	02/08/80	CLR	05/20/80	Hrngs	04-AQ-WVR-80-04 Open Field Burning Civil Penalty of $860.	Hearing Set in Corvallis at 10 a.m.
KARSTEN, Lauren	01/28/80	02/27/80	CLR		Prtys	05-AQ-WVR-80-03 Open Field Burning Civil Penalty of $1,500	Preliminary Issues
HARPER, Robert W.	02/26/80	02/28/80	LMS	05/13/80	Hrngs	06-AQ-NWR-80-14 Open Burning Civil Penalty of $500	Hearing Set in Portland at 9 a.m.
MEDFORD CORPORATION	02/25/80	02/29/80		05/16/80	Resp	07-AQ-SWR-80 Request for Declaratory Ruling	Resp's brief due 04/07/80; Dept's brief due 04/25/80. To Be Heard By EQC.
JUDD, James dba JIM JUDD BACKHOE SERVICE	03/01/80	03/11/80	JHR		Hrngs	08-SS-SWR-80-18 Subsurface Sewage Civil Penalty of $100	Settlement Action
HILTON FUEL and SUPPLY CO.	03/08/80	03/17/80	LMS		Hrngs	09-AQ-SWR-80-30 Open Burning Civil Penalty of $200	To Be Scheduled

HMP Notebook

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Air Quality	February, 1980
(Reporting Unit)	(Month and Year)

SIGNIFICANT ACTIVITIES

* (List Activities of Special Interest or Significance) *

Open Burning

Status report on open burning was presented to the EQC on February 22, 1980. A schedule was approved calling for rule changes to make the rules easier to read, understand, and define the Metropolitan Service District as the area around Portland where the open burning law is to take effect. Public hearings are to be held in August and September and rules are to be adopted in November, 1980.

Data Processing Committee Meeting

The committee met and prioritized twelve (12) projects representing all DEQ divisions. Other projects were identified but not ranked at this time. Other topics discussed were reorganization and timing, staffing, location, divisional impact, and funding. While no final decisions were made, it appears that reorganization would occur on or before July 1, 1981. DP staffing would need an additional programmer/analyst, with an additional position to coordinate the information input/output requirements of the Air Quality Division. Water Quality would need data entry support to center compliance data after this system was operational. Water Quality may also need a data coordinator after a number of their projects are implemented. EPA is strongly supportive about a centralized system that could support all programs, and indicated monies could be made available depending on DEQ's priorities of AQ 105 and WQ 208 funds.

AB1034.A(p)

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Air Quality Division (Reporting Unit) — February, 1980 (Month and Year)

SUMMARY OF PLAN ACTIONS

	Plans Received		Plans Approved		Plans Disapproved		Plans Pending
	Month	FY	Month	FY	Month	FY	
Air							
Direct Sources	28	128	23	135	1	1	55
Water							
Municipal	-	-	-	-	-	-	-
Industrial	-	-	-	-	-	-	-
Total	-	-	-	-	-	-	-
Solid Waste							
Gen. Refuse	-	-	-	-	-	-	-
Demolition	-	-	-	-	-	-	-
Industrial	-	-	-	-	-	-	-
Sludge	-	-	-	-	-	-	-
Total	-	-	-	-	-	-	-
Hazardous Wastes	-	-	-	-	-	-	-
GRAND TOTAL	-	-	-	-	-	-	-

MAR.2 (4/79) AW1010

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Air Quality Division (Reporting Unit) — February, 1980 (Month and Year)

PLAN ACTIONS COMPLETED

County	Name of Source/Project /Site and Type of Same	Date of Action	Action
Direct Stationary Sources			
Wasco (NC 1347)	Arin Williams Three orchard fans	02/12/80	Approved
Coos (NC 1477)	Menasha Corporation Replacement of Oxygen analyzer	02/20/80	Approved
Coos (NC 1500)	W. J. Conrad Lumber Co. Wood preserving, water base	01/28/80	Approved
Multnomah (NC 1506	Chevron USA, Inc. New oil storage tank	01/30/80	Approved
Linn (NC 1520)	American Can Kalsey H_2S control on lignin	01/30/80	Approved
Hood River (NC 1526)	Bickford Orchards, Inc. Two orchard fans	12/12/79	Approved
Jackson (NC 1527)	Medford Pear Company Three orchard fans	01/16/80	Approved
Jackson (NC 1528)	Joe Naumes Five orchard fans	01/16/80	Approved
Jackson (NC 1529)	Central Point-Melrose Four orchard fans	01/16/80	Approved
Jackson (NC 1530)	Naumes Orchards of Oregon Seven orchard fans	01/16/80	Approved
Jackson (NC 1531)	Rogue Russet Orchards Twelve orchard fans	01/16/80	Approved
Union (NC 1537)	Boise Cascade Corp. Particle dryer control	01/18/80	Approved
Josephine (NC 1545)	Medford Corporation Seal-up veneer dryer	02/06/80	Approved

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Air Quality Division (Reporting Unit) — February, 1980 (Month and Year)

PLAN ACTIONS COMPLETED

County	Name of Source/Project /Site and Type of Same	Date of Action	Action
Direct Stationary Sources (cont.)			
Yamhill (NC 1547)	Willamina Lumber and Veneer New veneer mill	02/20/80	Approved
Marion (NC 1548)	Woodburn Fertilizer and Grain Baghouse	02/27/80	Approved
Josephine (NC 1550)	Southwest Forest Industries Scrubber on veneer dryer	02/22/80	Approved
Josephine (NC 1551)	Southwest Forest Industries Scrubber on veneer dryer	02/21/80	Approved
Lane (NC 1552)	The Kingsford Company Modification to improve emission control	02/26/80	Approved (tax credit only)
Lake (NC 1560)	Oil-Dri Production Co. No. 2 dryer cyclone system	02/22/80	Approved
Jackson (NC 1561)	Don Minear Orchard Overhead sprinkler system	02/22/80	Approved
Hood River (NC 1562)	Ackerman Orchards Two electric orchard fans	02/20/80	Approved
Hood River (NC 1564)	M. Goe & Son, Inc. One orchard fan	02/26/80	Approved
Jackson (NC 1565)	Harry and David Two orchard fans	02/27/80	Approved

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Air Quality Division (Reporting Unit) — February, 1980 (Month and Year)

PLAN ACTIONS PENDING

County	Name of Source/Project /Site and Type of Same	Date Received	Status
Direct Stationary Sources			
Morrow (NC 656)	Portland General Electric Coal fired power plant	10/01/75	Planning and Development. Review main stack monitors 9/1/79[2].
Lane (NC 1152)	Willamette Wood Works Saws and cyclone	3/28/78	(Tax Credit only) Awaiting NC action by LRAPA (may be withdrawn).
Washington (NC 1244)	Siemens-Allis, Inc. Silver spray booth	9/05/78	Northwest Region Office[1].
Lane (NC 1291)	Trus Joist Corp. Baghouse filter	11/17/78	Program Operations (tax credit only) Awaiting LRAPA Action.
Jackson (NC 1331)	Medford Steel Div., CSC Inc. Shot blast baghouse	2/08/79	Southwest Region[1]
Benton (NC 1367)	Brand S Direct wood fired veneer dryer	3/16/79	Willamette Valley Region Office Awaiting information
Linn (NC 1393)	Linn-Board Inc. Plywood-composite board	4/25/79	Willamette Valley Region Additional information requested (design finalized)
Multnomah (NC 1400)	Chevron USA, Inc. Floating roof at asphalt plant	5/03/79	Northwest Region Additional information requested 5/22/79[3]
Multnomah (NC 1401)	Union Oil Co. of Calif. Bottom loading and vapor recovery	4/17/79	Northwest Region Additional information requested 5/22/79[3]

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Air Quality Division (Reporting Unit) — February, 1980 (Month and Year)

PLAN ACTIONS PENDING

County	Name of Source/Project /Site and Type of Same	Date Received	Status
Direct Stationary Sources (Cont.)			
Multnomah (NC 1407)	Time Oil Co. Bottom loading and vapor recovery	5/14/79	Northwest Region Additional information requested
Multnomah (NC 1408)	Portland Terminals Co., Inc. Vapor Recovery Unit	5/14/79	Northwest Region Additional information requested 7/12/79[3]
Linn (NC 1424)	Teledyne Wah Chang Columbium calciner	5/24/79	Willamette Valley Region[1]
Benton (NC 1428)	Evans Products Sub-micro battery separaters	5/31/79	Willamette Valley Region[1]
Jackson (NC 1436)	Earnest Orchards & Packing Over tree sprinkler system	06/08/79	Program Operations[1] requested more information
Multnomah (NC 1458)	Chappel Mfg. Co. New furniture mfg. plant	07/26/79	Northwest Region[1] (design change)
Multnomah (NC 1464)	Ross Island Sand & Gravel Replace plant at this site	07/24/79	Northwest Region[2]
Multnomah (NC 1465)	Ross Island Sand & Gravel Move dry mix plant to this site	07/24/79	Northwest Region[2]
Benton (NC 1483)	Permawood Northwest Corp. Cement bonded wood products	09/05/79	Willamette Valley Region[2]
Multnomah (NC 1492)	Texaco, Inc. Bottom loading & VOC recovery	04/30/79	Northwest Region[2]
Linn (NC 1498)	Willamette Industries Revise air flow in veneer dryer	09/26/79	Willamette Valley Region[1]
Deschutes (NC 1501)	Cascade Forest Products New building and equipment	09/21/79	Program Operations[1]

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Air Quality Division (Reporting Unit) — February, 1980 (Month and Year)

PLAN ACTIONS PENDING

County	Name of Source/Project /Site and Type of Same	Date Received	Status
Direct Stationary Sources (cont.)			
Lane (NC 1504)	Trus Joist Corporation Pave additional yard area	10/01/79	Program Operations[1] (tax credit only)
Lane (NC 1506)	Valley Iron and Steel Co. Rebuild update control system	09/10/79	Program Operations[1] (tax credit only)
Multnomah (NC 1512)	Portland Willamette Co. Powder coating & painting facility	10/29/79	Northwest Region[1]
Douglas (NC 1515)	International Paper Co. Baghouse & boiler modifications	11/05/79	Program Operations[1]
Multnomah (NC 1521)	Owens-Corning Fiberglas Limestone storage baghouse	11/19/79	Northwest Region[1]
Multnomah (NC 1524)	Time Oil Company One internal floating roof	11/30/79	Northwest Region[1]
Washington (NC 1525)	Dant and Russell, Inc. Yard paving	11/16/79	Northwest Region[1]
Columbia (NC 1533)	Owens-Corning Fiberglas Mineral Wool Board	12/06/79	Northwest Region[1]
Washington (NC 1534)	Valley Petroleum, Inc. VOC vapor return	12/12/79	Northwest Region[1]
Multnomah (NC 1535)	Bird and Son Inc. of Mass. Replacement heater	12/11/79	Northwest Region[1]
Multnomah (NC 1539)	Mobil Oil Corp. Vapor recovery & roof seals	12/24/79	Northwest Region[1]
Klamath (NC 1541)	Weyerhaeuser Co. Fuel sizing screen	12/26/79	Program Operations[1]

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Air Quality Division (Reporting Unit) — February, 1980 (Month and Year)

PLAN ACTIONS PENDING

County	Name of Source/Project /Site and Type of Same	Date Received	Status
Direct Stationary Sources (cont.)			
Yamhill (NC 1542)	Dayton Sand and Gravel Rock crusher	01/02/80	Willamette Valley Region[2]
Multnomah (NC 1543)	Gilsonite, Inc. $CaCO_3$ & asbestos baghouse	01/11/80	Northwest Region[1]
Clackamas (NC 1544)	Omark Industries Powder paint booth	01/11/80	Northwest Region[1]
Washington (NC 1546)	Oregon Roses, Inc. Wood fired boiler	01/21/80	Northwest Region[1]
Multnomah (NC 1549)	Port of Portland Rehabilitation of Terminal No. 4	01/30/80	Northwest Region
Polk (NC 1553)	Friesen Enterprises Dust collection system	02/07/80	Willamette Valley Region
Lane (NC 1554)	National Metallurgical Arc furnace and baghouse	01/09//80	Program Operations (tax credit only)
Jackson (NC 1555)	M. C. Lininger & Sons, Inc. Yard paving	02/11/80	Program Operations
Jackson (NC 1556)	Rogue River Paving Co., Inc. Yard paving	02/11/80	Program Operations
Washington	Forest Grove Lumber Co. New planer and cyclone	02/13/80	Northwest Region
Lane (NC 1558)	Georgia-Pacific Corp. Boiler improvements	02/13/80	Program Operations
Jackson (NC 1559)	Reichhold Chemicals Methanol tank emission control	02/14/80	Program Opertions
Hood River (NC 1563)	Glacier Ranch One orchard fan	02/15/80	Program Operations

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Air Quality Division (Reporting Unit) — February, 1980 (Month and Year)

PLAN ACTIONS PENDING

County	Name of Source/Project /Site and Type of Same	Date Received	Status
Direct Stationary Sources (cont.)			
Hood River (NC 1566)	Beachman Orchards One orchard fan	02/06/80	Program Operations
Washington (NC 1567)	Tektronix, Inc. Covers for open degreasers	02/25/80	Northwest Region
Deschutes (NC 1568)	Willamette Industries, Inc. Replacement baghouse	02/25/80	Deschutes
Deschutes (NC 1569)	Willamette Industries, Inc. Baghouse on No. 1 reclaim mill	02/25/80	Deschutes
Multnomah (NC 1570)	Oregon Steel Mills Two furnaces to "ICA" baghouse	02/25/80	Northwest Region
Linn (NC 1571)	Duraflake Modification to paint line	02/25/80	Program Operations
Linn (NC 1572)	Southwest Forest Industries Plant No. 1, Mill No. 1 veneer dryer	02/07/80	Willamette Valley Region

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Air Quality Division (Reporting Unit) — February, 1980 (Month and Year)

PLAN ACTIONS PENDING

County	Name of Source/Project /Site and Type of Same	Date Received	Status
Direct Stationary Sources (cont.)			
Multnomah (NC 1573)	Purdy Brush Company Paint brush manufacturing plant	02/27/80	Northwest Region
Crook (NC 1574)	Clearpine Moulding, Inc. Additional veneer dryer section	02/25/80	Program Operations

Footnotes:

[1]These plan reviews are for modifications or additions to existing facilities. Pending action by the Department is not materially affecting production or operation of the facility.

[2]These plan reviews are for new facilities. Production or operation of the facility is dependent on Department action.

[3]Expect action with 20 days or receipt of requested information.

AW1010.A

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Air Quality Division (Reporting Unit) — February, 1980 (Month and Year)

SUMMARY OF AIR PERMIT ACTIONS

	Permit Actions Received		Permit Actions Completed		Permit Actions Pending	Sources Under Permits	Sources Reqr'g Permits
	Month	FY	Month	FY			
Direct Sources							
New							
Existing	INFORMATION NOT AVAILABLE DUE TO						
Renewals							
Modifications	COMPUTER BREAKDOWN						
Total							
Indirect Sources							
New	4	18	0	25	12		
Existing							
Renewals							
Modifications	0	2	0	2	0		
Total	4	20	0	27	12	63	

GRAND TOTALS

Number of Pending Permits

Comments

INFORMATION NOT AVAILABLE DUE TO COMPUTER BREAKDOWN

15 Technical Assistances
8 A-95's

AP1236

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Air Quality Division (Reporting Unit) — February, 1980 (Month and Year)

PERMIT ACTIONS PENDING

County	Name of Source/Project /Site and Type of Same	Date of Initial Action	Date of Completed Action	Type of Action and Status
Indirect Source				
Clackamas	82nd and King Road Multi-family Units 275 Spaces	08/26/77		Additional Information Requested
Marion	Douglas McKay High School, 342 Spaces File No. 24-8001	01/04/78		Additional Information Requested
Multnomah	Columbia Square Office Complex 240 Spaces File No. 26-7018	09/07/77		Additional Information Requested
Multnomah	Meadowland Center 770 Spaces File No. 26-7934	11/30/79	02/14/80	Additional Information Received
Multnomah	Industrial Freeway (I-505), New Urban Freeway File No. 26-6027	12/13/76	12/16/76	Additional Information Requested
Washington	Allen Boulevard Murray Boulevard to Alice Lane File No. 34-7935	12/26/79	01/10/80	Additional Information Received
Josephine	Redwood Plaza 2320 Spaces File No. 17-7936	12/31/79	01/15/80	Additional Information Requested
Multnomah	Purdy Brush Company 216 Spaces File No. 26-8001	01/18/80	02/07/80	Proposed Permit Issued

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Air Quality Division (Reporting Unit) — February, 1980 (Month and Year)

PERMIT ACTIONS PENDING

County	Name of Source/Project /Site and Type of Same	Date of Initial Action	Date of Completed Action	Type of Action and Status
Indirect Source (continued)				
Clackamas	Greenhouse Square 261 Spaces File No. 03-8002	02/07/80	02/27/80	Proposed Permit Issued
Clackamas/ Multnomah	Mountain Park Center 539 Spaces File No. 37-8003	02/19/80		Application Received
Washington	Intel Corp. Jones Farm Site 2900 Spaces File No. 34-8004	02/21/80		Application Received
Multnomah	Maruman Integrated Circuits, Inc. 265 Spaces File No. 26-8005	02/22/80		Application Received

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Air Quality Division (Reporting Unit) — February, 1980 (Month and Year)

WORKLOAD INDICATORS

	MW	GR/WDH		LDB				Total
Complaint Investigations	-	-	-	-	-	-	-	-
Field Investigations	-	-	-	-	-	-	-	-
New Source & Site Evaluations	-	-		-	-	-	-	-
Compliance Conferences	-	-		-	-	-	-	-
Samples	-	-	-	-	-	-	-	-
Source Tests	-	-	-	-	-	-	-	-
Conducted/Consultant	-	-		-	-	-	-	-
Reviewed	-	-		-	-	-	-	-
Observed	-	-		-	-	-	-	-
Stream Surveys	-	-	-	-	-	-	-	-
Emission Inventories (Source)	11	-	-	-	-	-	-	11
Open Burning	-	-	-	30	-	-	-	30
Technical Asst. (Citizens, Local & County Gov'ts, Industries, State & Federal Agencies	2	0	1	10	-	-	-	13
Field Burning Cont.	-	-	1/2 days	-	-	-	-	1/2 days
A-95 Clearing House Reviews	-	-	-	-	-	-	-	-
State Division of Land Permit Review	-	-	-	-	-	-	-	-
Real Estate Division Sewage Certification	-	-	-	-	-	-	-	-

MARA.13 (10/79) AB1034

WORKLOAD INDICATORS (continued)

	MW	GR/WDH		LDB				Total
EIS Reviews	-	-	-	-	-	-	-	-
Dept. of Geology and Mineral Industries Land Reclamation Reviews	-	-	-	-	-	-	-	-
Spill Investigation	-	-	-	-	-	-	-	-
*Sanitarians Workshops Held							-	-
*Short Courses Held							-	-
*Installers and Operators Trained							-	-

*Use number in attendance or trained

ADPM SYSTEM UPDATES

AQDMS	1
CSDS	1
EIDS	0
GASP	0
MDS	1
NEDS	1
FIELD BURNING	0

VICTOR ATIYEH
GOVERNOR

Environmental Quality Commission

Mailing Address: BOX 1760, PORTLAND, OR 97207
522 SOUTHWEST 5th AVENUE, PORTLAND, OR 97204 PHONE (503) 229-5696

MEMORANDUM

To: Environmental Quality Commission

From: Director

Subject: Agenda Item C, April 18, 1980, EQC Meeting

TAX CREDIT APPLICATIONS

Director's Recommendation

It is recommended that the Commission take action to issue Pollution Control Facility Certificates to the following:

Appl. No.	Applicant	Facility
T-1166	Timber Products Company	bag filter
T-1174	Bohemia, Inc.	hogged wood waste fired boiler
T-1176	Bohemia, Inc.	modification of log handling operations
T-1179	Boise Cascade Corporation	pump installation at holding pond
T-1093	Warrenton Lumber Company	waste wood fuel handling and storage system
T-1184	Boise Cascade Corporation	runoff and waste water control system
T-1190	International Paper Company	vapor compression reevaporation system

WILLIAM H. YOUNG

CASplettstaszer
229-6484
4/4/80

Attachments

PROPOSED APRIL 1980 TOTALS

Air Quality	$ 56,218
Water Quality	3,839,854
Solid Waste	2,776,382
Noise	-0-
	$6,672,454

CALENDAR YEAR TOTALS TO DATE

Air Quality	$1,744,192
Water Quality	3,852,981
Solid Waste	2,251,548
Noise	5,157
	$7,853,878

Appl T-1166
Date 2/20/80

State of Oregon
Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

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1. Applicant

Timber Products Company
Box 1669
Medford, Oregon 97501

The applicant owns and operates a plywood plant at Medford, Oregon.

Application was made for tax credit for an air pollution control facility.

2. Description of Claimed Facility

The facility described in this application consists of a Carter-Day bag filter to control emissions from a sander cyclone.

Request for Preliminary Certification for Tax Credit was made on March 5, 1979, and approved on July 6, 1979.

Construction was initiated on the claimed facility on August 1, 1979, completed on November 2, 1979, and the facility was placed into operation on November 2, 1979.

Facility Cost: $56,218.56 (Accountant's Certification was provided).

3. Evaluation of Application

Sander dust emissions were previously controlled by a wet scrubber, however, this unit did not meet the Department's opacity limits or the new emission limits of the Medford AQMA. Timber Products replaced the wet scrubbers with a Carter-Day baghouse. This unit is operating and complies with all Departmental emission limits. The recovered material has no economic value to the company. The only purpose of this baghouse is air pollution control. Therefore, 80 percent or more of the cost is allocable to pollution control.

4. Summation

a. Facility was constructed in accordance with the requirements of ORS 468.175, regarding preliminary certification.

b. Facility was constructed on or after January 1, 1967, as required by ORS 468.165(1)(a).

c. Facility is designed for and is being operated to a substantial extent for the purpose of preventing, controlling, or reducing air pollution.

d. The facility was required by the Department of Environmental Quality and is necessary to satisfy the intents and purposes of ORS Chapter 468, and the rules adopted under that chapter.

e. The portion of the facility cost that is properly allocable to pollution control is 80 percent or more.

5. Director's Recommendation

Based upon the findings in the Summation, it is recommended that a Pollution Control Facility Certificate bearing the cost of $56,218.56 with 80 percent or more allocated to pollution control, be issued for the facility claimed in Tax Credit Application No. T-1166.

F. A. Skirvin:n
(503) 229-6414
February 21, 1980
AN8043

Appl T-1174
Date April 2, 1980

State of Oregon
Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

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1. Applicant

Bohemia, Inc.
2280 Oakmont Way
Box 1819
Eugene, OR 97401

The applicant owns and operates sawmill and laminating mill at Saginaw, Oregon.

Application was made for tax credit for a solid waste pollution control facility.

2. Description of Claimed Facility

The facility described in this application consists of a hogged wood waste fired boiler equipped with a baghouse and a steam transmission system.

Request for Preliminary Certification for Tax Credit was made on May 15, 1978.

The Department failed to act on this request within 60 days and Preliminary Certification was approved by default on July 15, 1978, as required by ORS 468.175(4). This facility was the first in the state to undergo review under then new federal standards relating to Prevention of Significant Deterioration (PSD) and the staff's attention was directed away from the tax credit issue. It should be noted that the staff would have granted Preliminary Certification had action been taken.

Construction was initiated on the claimed facility in November, 1978, completed on November 1, 1979, when shakedown began and the facility was placed into operation on February 1, 1980.

Facility Cost: $2,003,038.57 (Accountant's Certification was provided).

3. Evaluation of Application

Prior to installation of this boiler, wood wastes from this and other Bohemia, Inc., facilities were disposed of in industrial landfills. Also because of unstable market conditions some hogged fuel was landfilled. The steam needs of the plant were previously generated by a natural gas-fired boiler. The company estimates that the new boiler will use approximately sixty-five (65) units per day of hog fuel or approximately nineteen thousand (19,000) units annually. Use of natural gas for steam generation has been discontinued.

4. Summation

a. Facility was constructed in accordance with the requirements of ORS 468.175, regarding preliminary certification.

b. Facility was constructed on or after January 1, 1973, as required by ORS 468.165(1)(c).

c. Facility is designed for and is being operated to a substantial extent for the purpose of preventing, controlling, or reducing solid waste.

d. The facility is necessary to satisfy the intents and purposes of ORS Chapter 459, and the rules adopted under that chapter.

e. The cost of the facility allocable to pollution control is 100 percent.

5. Director's Recommendation

Based upon the findings in the Summation, it is recommended that a Pollution Control Facility Certificate bearing the cost of $2,003,038.37 with 100 percent allocated to pollution control, be issued for the facility claimed in Tax Credit Application No. T-1174.

WHDana:dn
(503) 229-5913
March 24, 1980

Appl T-1176
Date 4/1/80

State of Oregon
Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

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1. Applicant

Bohemia Inc.
Lakeside Division
2280 Oakmont Way
Eugene, OR 97401

The applicant owns and operates a sawmill engaged in manufacturing wood products at Lakeside, Oregon.

Application was made for tax credit for a water pollution control facility.

2. Description of Claimed Facility

The facility described in this application is a modification of log handling operations at the Lakeside sawmill to eliminate storage of logs in Ten Mile Lake and consists of:

a. Fill portion of Ten Mile Lake (approximately 52,000 cu yds)--approved by Division of State Lands, federal agencies and Coos County.

b. Riprap bank to drain storm runoff away from lake.

c. Covert to dry log infeed.

d. Some solid waste aspects not included in this application.

Request for Preliminary Certification for Tax Credit was made November 29, 1977, and approved September 1, 1978. Construction was initiated on the claimed facility in May 1978, completed January 1980, and the facility was placed into operation prior to November 1979.

Facility Cost: $336,176.00 (Accountant's Certification was provided).

3. Evaluation of Application

The claimed facility was required--a condition of D.E.Q. Permit 1394. The removal of logs from the lake has been accomplished, eliminating any water quality degradation that had occurred in the past. The applicant claims that operating expenses exceed income derived from the facility.

Applicant, therefore, claims that 100 percent of the cost of the claimed facility is properly allocable to pollution control.

4. Summation

a. Facility was constructed in accordance with the requirements of ORS 468.175, regarding preliminary certification.

b. Facility was constructed on or after January 1, 1967, as required by ORS 468.165(1)(a).

c. Facility is designed for and is being operated to a substantial extent for the purpose of preventing, controlling, or reducing water pollution.

d. The facility was required by the Department of Environmental Quality and is necessary to satisfy the intents and purposes of ORS Chapter 468 and the rules adopted under that chapter.

e. The portion of the facility cost that is properly allocable to pollution control is 100 percent.

5. Director's Recommendation

Based upon the findings in the Summation, it is recommended that a Pollution Control Facility Certificate bearing the cost of $336,176.00 with 80 percent or more allocated to pollution control, be issued for the facility claimed in Tax Credit Application No. T-1176.

Charles K. Ashbaker:p
(503) 229-5325
April 1, 1980
WP1233

Appl T-1179
Date 2/29/80

State of Oregon
Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

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1. Applicant

Boise Cascade Corporation
Paper Group
Box 14201
Salem, OR 97309

The applicant owns and operates a mill producing pulp for paper and torula yeast as a by-product at Salem.

Application was made for tax credit for a water pollution control facility.

2. Description of Claimed Facility

The facility described in this application is the installation of an electrically driven pump at the emergency holding pond, pumping to secondary treatment lagoon. Prior to the installation, rented diesel powered pumps were used on an irregular basis. The purpose is to keep the emergency pond at a low level to provide storage when it is needed.

Request for Preliminary Certification for Tax Credit was made March 30, 1978, and approved May 8, 1978, Construction was initiated on the claimed facility March 30, 1978, completed July 14, 1978, and the facility was placed into operation July 15, 1978.

Facility Cost: $13,078.69 (Accountant's Certification was provided).

3. Evaluation of Application

The emergency pond provides an effective buffer against shock loading the secondary system to a greater degree since the installation of the claimed facility. In addition the facility has enabled the applicant to flush out the pond, reducing odors. Staff verifies the facility has been satisfactorily completed.

Applicant claims that 100 percent of the cost of the claimed facility is properly allocable to pollution control. Staff is in agreement.

4. Summation

a. Facility was constructed in accordance with the requirements of ORS 468.175, regarding preliminary certification.

b. Facility was constructed on or after January 1, 1967, as required by ORS 468.165(1)(a).

c. Facility is designed for and is being operated to a substantial extent for the purpose of preventing, controlling, or reducing water pollution.

d. The facility was required by the Department of Environmental Quality and is necessary to satisfy the intents and purposes of ORS Chapter 468 and the rules adopted under that chapter.

e. The portion of the facility cost that is properly allocable to pollution control is 100 percent.

5. Director's Recommendation

Based upon the findings in the Summation, it is recommended that a Pollution Control Facility Certificate bearing the cost of $13,078.69 with 80 percent or more allocated to pollution control, be issued for the facility claimed in Tax Credit Application No. T-1179.

C. K. Ashbaker:pe
(503) 229-5325
March 5, 1980
WP1014

Appl T-1093
Date March 20, 1980

State of Oregon
Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

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1. Applicant

Warrenton Lumber Company
Box 160
Warrenton, OR 97146

The applicant owns and operates a sawmill and planing mill at Warrenton, Oregon.

Application was made for tax credit for a solid waste pollution control facility.

2. Description of Claimed Facility

The facility described in this application consists of a handling and storage system for waste wood fuel and a steam generator to produce process steam for lumber dry kilns.

Request for Preliminary Certification for Tax Credit was made on May 24, 1977, and approved on June 2, 1977.

Construction was initiated on the claimed facility in June, 1977, completed in February, 1978, and the facility was placed into operation in February, 1978.

Facility Cost: $733,344.00 (Accountant's Certification was provided).

3. Evaluation of Application

Prior to installation of this steam generating system, wood wastes were landfilled in an environmentally unacceptable manner at the plant or were sold on a temporary basis as fuel. Installation of the claimed facility has converted wood wastes into useable energy.

4. Summation

a. Facility was constructed in accordance with the requirements of ORS 468.175, regarding preliminary certification.

b. Facility was constructed on or after January 1, 1973, as required by ORS 468.165(1)(c).

c. Facility is designed for and is being operated to a substantial extent for the purpose of preventing, controlling, or reducing solid waste.

d. The facility is necessary to satisfy the intents and purposes of ORS Chapter 459, and the rules adopted under that chapter.

e. The cost of the facility allocable to pollution control is 100 percent.

5. Director's Recommendation

Based upon the findings in the Summation, it is recommended that a Pollution Control Facility Certificate bearing the cost of $733,344.00 with 100 percent allocated to pollution control, be issued for the facility claimed in Tax Credit Application No. T-1093.

WHDana:d
(503) 229-5913
March 14, 1980

SD1066

Appl T-1184
Date

State of Oregon
Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

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1. Applicant

Boise Cascade Corporation
Northeast Oregon Region
Box 610
La Grande, OR 97850

The applicant owns and operates a plywood plant and log yard at Elgin, Oregon.

Application was made for tax credit for a water pollution control facility.

2. Description of Claimed Facility

The facility described in this application is a system to control runoff and waste water and consists of:

a. French drains to control and divert springwater in the log yard.
b. Lagoon (131 acre ft.)
c. Pump station and piping to recycle waste waters for log sprinkling.
d. Conveyors and screens to remove solids from recycled water.
e. Electrical power and structural.

Request for Preliminary Certification for Tax Credit was made March 2, 1976, and approved March 4, 1976. Construction was initiated on the claimed facility May 13, 1976 completed and placed into operation September 10, 1976

Facility Cost: $286,366 (Accountant's Certification was provided).

3. Evaluation of Application

Waste water runoff is now recycled and used to sprinkle logs. The facility performs no other function than pollution control. Regional staff reports the facilities complete and functioning as intended.

Applicant claims that 100 percent of the cost of the claimed facility if properly allocable to pollution control, since it has no other purpose.

4. Summation

a. Facility was constructed in accordance with the requirements of ORS 468.175, regarding preliminary certification.

b. Facility was constructed on or after January 1, 1967, as required by ORS 468.165(1)(a).

c. Facility is designed for and is being operated to a substantial extent for the purpose of preventing, controlling, or reducing water pollution.

d. The facility was required by the Department of Environmental Quality and is necessary to satisfy the intents and purposes of ORS Chapter 468 and the rules adopted under that chapter.

e. The portion of the facility cost that is properly allocable to pollution control is 100 percent.

5. Director's Recommendation

Based upon the findings in the Summation, it is recommended that a Pollution Control Facility Certificate bearing the cost of $286,366 with 80 percent or more allocated to pollution control, be issued for the facility claimed in Tax Credit Application No. T-1184.

CKA:1
(503) 229-5325
WL1123
March 19, 1980

Appl T-1190
Date 4/1/80

State of Oregon
Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

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1. Applicant

International Paper Company
Gardiner Paper Mill, Industrial Packaging
Box 854
Gardiner, OR 97441

The applicant owns and operates a pulp and paper mill utilizing the kraft process to produce various grades of unbleached linerboard at Gardiner, Oregon.

Application was made for tax credit for a water pollution control facility.

2. Description of Claimed Facility

The facility described in this application is a vapor compression re-evaporation system for black liquor evaporation to 63 percent solids in order to recover pulping chemicals and produce steam by incineration and consists of:

a. Vapor compression evaporator (140,000 lbs/hr).
b. Distillation column (17 tray, 16 ft diameter).
c. Boil out tank for spill control (178,000 gal).
d. Auxilliary equipment (pumps, condensers and tanks).
e. Necessary concrete, structural, piping, instrumentation and electrical.

Request for Preliminary Certification for Tax Credit was made by letter of December 16, 1975, and Notice of Intent to Construct dated March 9, 1976, and approved March 15, 1976. Construction was initiated on the claimed facility in February 1976, (purchase orders for equipment), completed in November 1978, and the facility was placed into operation before final completion in June 1977.

Facility Cost: $3,204,234.73 (Accountant's Certification was provided).

3. Evaluation of Application

The facility was required to meet N.P.D.E.S. permit limits and was negotiated as the best way to proceed by the applicant and D.E.Q. staff. With the facility B.O.D. requirements secondary biological treatment have been attained. Chemicals and heat are recovered, in part, by the facility and return on the investment, before taxes, is 9.64 percent. The applicant has calculated and claimed 57.1 percent allocable to pollution control. Staff verifies that the facility is performing as intended.

4. Summation

a. Facility was constructed in accordance with the requirements of ORS 468.175, regarding preliminary certification.

b. Facility was constructed on or after January 1, 1967, as required by ORS 468.165(1)(a).

c. Facility is designed for and is being operated to a substantial extent for the purpose of preventing, controlling, or reducing water pollution.

d. The facility was required by the Department of Environmental Quality and is necessary to satisfy the intents and purposes of ORS Chapter 468 and the rules adopted under that chapter.

e. The portion of the facility cost that is properly allocable to pollution control is 57.1 percent.

5. Director's Recommendation

Based upon the findings in the Summation, it is recommended that a Pollution Control Facility Certificate bearing the cost of $3,204.234.73 with 40 percent or more but less than 60 percent (57.1 percent) allocated to pollution control, be issued for the facility claimed in Tax Credit Application No. T-1190.

Charles K. Ashbaker:p
(503) 229-5325
April 1, 1980
WP1233

VICTOR ATIYEH
Governor

Environmental Quality Commission

POST OFFICE BOX 1760, PORTLAND, OREGON 97207 PHONE (503) 229-5696

TO: Environmental Quality Commission

FROM: Director

SUBJECT: Agenda Item No. D, April 18, 1980, Environmental Quality Commission Meeting.
Request For Approval Of Stipulation And Final Order, No. WQ-WVR-80-22, Between The Department And The City Of Silverton.

Background

1. The City of Silverton operates a 0.7 MGD trickling filter sewage treatment system serving a population of 5275.

2. Massive stormwater inflow and infiltration has caused frequent bypassing of sewage at points in Silverton and at the treatment plant. For example, during January 1980, 47 million gallons of sewage were treated, 50 million gallons were bypassed in town, and additional bypassing occurred at the plant 24 days. Rain fell on 16 of those 24 days. Summer flows at the plant are about 19 million gallons per month.

3. The plant often exceeds winter mass discharge limitations for biochemical oxygen demand (BOD) and total suspended solids (TSS) because of inflow and infiltration.

4. The plant has not met summer effluent limits in 1978 or 1979 for BOD and TSS.

5. Violations of river basin bacteriological standards were documented in Silver Creek during the summer of 1979. This is believed to be caused by failing septic tanks near Silver Creek and inside the Silverton city limits. Correction of exfiltration of sewage from broken interceptors and bypassing may also be contributing to these violations. This problem is being addressed separately by the Department.

6. The City is currently in the design phase (EPA Grant Step II) for STP upgrading and sewer rehabilitations. The design work includes service for a health hazard annexation area annexed in 1976.

Summation

1. The proposed effluent limits are based on previous performance of the treatment plant and the potential impact on the receiving stream.

2. The proposed Order will operate independently of EPA Construction Grant funding.

3. Compliance with the proposed Order will result in elimination of a declared health hazard area, elimination of untreated sewage bypassing to Silver Creek, and compliance with the Department's secondary treatment standards.

Director's Recommendation

Based on the summation, it is recommended that the Commission approve the Final Order (Attachment 1) No. WQ-WVR-80-22.

Bill

WILLIAM H. YOUNG

Attachment: Stipulation and Final Order No. WQ-WVR-80-22.

John E. Borden: wr
378-8240
April 2, 1980

VICTOR ATIYEH
GOVERNOR

Environmental Quality Commission

Mailing Address: BOX 1760, PORTLAND, OR 97207
522 SOUTHWEST 5th AVENUE, PORTLAND, OR 97204 PHONE (503) 229-5696

MEMORANDUM

To: Environmental Quality Commission

From: Director

Subject: Agenda Item No. E, April 18, 1980, EQC Meeting

Request for Authorization to Conduct a Public Hearing to Amend the State Implementation Plan Regarding Volatile Organic Compound Rules and Permit Fee Rules (340-22 and 340-20-155)

BACKGROUND AND PROBLEM STATEMENT

Background Three areas of Oregon exceed the National Ambient Air Quality Standard for ozone. These three areas, Portland, Salem, and Medford, need reductions of the ozone precursors, Volatile Organic Compounds (VOC), in order to make progress towards attainment of ozone standards. The Clean Air Act and EPA guidance allows areas to get an extension of the December 31, 1982, compliance date for the ozone standards provided Reasonable Available Control Technology (RACT) regulations are established. EPA guidance indicates that adoption of certain RACT rules in each of the next two years would meet the RACT requirements.

Problem Statement The VOC rules, as adopted by the Environmental Quality Commission (EQC) on June 8, 1979, must be amended to correct eleven deficiencies specified in EPA's January 21, 1980, conditional approval of the State Implementation Plan (SIP). Also, the Commission has agreed to pass rules each year as EPA publishes guideline documents for existing sources of VOC. This second round of VOC rules must be passed by July 1, 1980, as required by EPA and Oregon's SIP.

Authority for the Commission to Act comes from Oregon Revised Statutes 468.020 and 468.295(3) where the Commission is authorized to establish emission standards for certain areas of the state for different classes of air contaminant sources.

A Statement of Need for Rulemaking is the first attachment of this memorandum.

ALTERNATIVES AND EVALUATION

Changes required by EPA to Existing Rules To satisfy the conditions of EPA's proposed approval of our SIP, Oregon must address the eleven changes requested by EPA. Only two of these changes may have significant effect on Oregon commerce and industry: gasoline service stations supplied from bulk plants, receiving between 120,000 gallons per year and 240,000 gallons per year, would have to install vapor balance for stage I; very large conveyorized degreasers would have to install VOC capture devices. Here are the EPA Requests:

Request 1 "The definition of delivery vessel, 340-22-100(9) must be modified to include the transport of gasoline from terminals to bulk plants."

DEQ Action See rewritten definition, 340-22-102(11), where words which limited the applicability in the original definition were deleted.

Request 2 "The 90 percent vapor capture requirement (-110 and -115) must be shown to be equivalent to a vapor tight balancing system. Replacement of the 90 percent rule with an equipment specification rule is recommended."

DEQ Action Rules 340-22-110 and -120 are rewritten to be simply equipment specification rules as recommended.

Request 3 "Conflicting exemptions from requirements for vapor capture contained in -110(2)(c) and -115(5) need to be resolved. Further, exemptions of delivery vessels and storage tanks at gasoline dispensing facilities from vapor capture requirements during filling cannot be approved unless the gasoline dispensing facilities involved: (1) receive less than 10,000 gallons of gasoline per month, or (2) the State demonstrates that exempting gasoline facilities receiving up to 240,000 gallons per year represents RACT."

DEQ Action Rule 340-22-110(2)(c) was expanded to include former -115(5). Former -115(5) is being deleted. No conflicting exemptions remain.

The second sentence of 340-22-110(2)(c) now exempts only small stations served from bulk plants, up to 10,000 gallons per month. Medium size stations, 10,000 gallons per month to 240,000 gallons per year, will not be exempted from vapor capture rules, as occurs in the present rules adopted June 8, 1979.

Strong objections have been received from the gasoline marketing industry over this proposed change. Some bulk plant owners are preparing economic arguments which may demonstrate economic infeasibility of control. If a sufficient case is made, EPA might allow the Department to delete these requirements.

Request 4 "Specific conditions must be identified under which stated exemptions would be granted from capture of vapors during tank truck gasoline operations at gasoline terminals (122(1)). It is EPA's understanding that the State's intent was to restrict this exemption to delivery vessels switching from gasoline to diesel oil."

DEQ Action See 340-22-130(3)(a) where the exception is limited to a switch from gasoline to diesel and certain other delivery service.

Request 5 "B. Cutback Asphalt: OAR 340-22-125 must contain provisions which prohibit the unrestricted use of solvents in emulsified asphalt. EPA has published a list of emulsified asphalt uses with corresponding maximum solvent contents. This guidance should be used in establishing limits on the addition of solvents to emulsified asphalt."

DEQ Action See added solvent limits in emulsified asphalt in 340-22-140(4), taken from October 4, 1979, EPA memo from R. G. Rhoads to Region X, and translated into industry terms with the consultation of Chervon U.S.A. and the Asphalt Institute.

Request 6 "C. Surface Coating: OAR 340-22-140 must clearly indicate that the term "coating line" includes the coater, flash-off area, and dryer. Further, the less restrictive emission requirements permitted for "inert gas process paper coating" must be documented as being RACT."

DEQ Action See added section 340-22-170(3), extracted from EPA model rule XX.9120(c), describing what is included in a coating line. Data from 3M's October 11, 1978, meeting with DEQ, and 3M's testimony at the October 16, 1978, VOC public hearing, shows that a 4.7 pounds per gallon plant site basis requirement for inert gas process paper coating is 65 percent control, more restrictive than EPA's RACT value of 2.9 pounds per gallon on a coating line basis, which is 57 percent control. This data was officially submitted to Region X by the Department on March 13, 1980. EPA's decision, on whether the 4.7 pound rule is RACT, has not been received as of April 4, 1980.

Request 7 "D. Degreasers: OAR 340-22-145 through -147. (1) Cold Cleaners (-145). The rules need to provide specific requirements for agitated solvents, heated solvents, and solvents with higher vapor pressures."

DEQ Action The requested specific requirements for agitated and heated solvents, and solvents with higher vapor pressures, have been added. See proposed additions to the rule: 340-22-180(d), (e), and (f).

Request 8 "(2) Open Top Vapor Degreasers (-146). An option for powered cover or specific freeboard ratio is not adequate; both must be required as RACT."

DEQ Action See rewritten 340-22-183(a)(ii) where both are now required.

Request 9 "(3) Conveyorized Degreasers (-147). A major control device must be required for those degreasers with an air/vapor interface greater than two square meters."

DEQ Action See 340-22-186(f) where this requirement was added.

Request 10 "4. Other Regulations--a. Source Test Procedures." EPA requests that Oregon submit its source test procedures to EPA for approval and all subsequent revisions to EPA for approval.

DEQ Action This action is underway by the Department's staff and will be completed in the second quarter of 1980.

Request 11 "b. Compliance Schedules" where EPA wants five step compliance schedules included in the rules, or submittal by DEQ of all individual compliance schedules by July 1, 1980.

DEQ Action The first alternative was chosen. See 340-22-107(3) being added.

Further rule changes were requested in EPA's April 1, 1980 letter and were resolved by the Department through small changes and phone calls April 2 and 3rd.

OTHER CHANGES

The Cutback Asphalt rule is being clarified by expressing the rule in universally accepted standard trade terms, slow curing (SC), medium curing (MC), etc., rather than in scientific terms which are not familiar to the industry.

Various other clarifications are being made by the staff to make the rules easier to understand.

The VOC rules are being renumbered at the request of the Secretary of State's codifier.

ADDITIONS TO THE RULES--EPA's SECOND ROUND OF VOC RULES

The second round of VOC rules are proposed as below, generally following the model rules (EPA-450/2-79-004) provided by EPA, and the ten published EPA guideline documents. On March 12, 1980, the Department requested EPA review and comments on these rules by April 4, 1980; they were not able to meet that deadline.

	EPA Guideline Document	Category	Oregon Rule No.	Remarks
1.	EPA-450/2-78-036	Refinery Leaks	340-22-153	Only one plant affected
2.	EPA-450/2-78-015	Misc. Parts Painting	340-22-170,[2] last five items in Table 1.	Many affected sources

3.	EPA-450/2 -78-035	Vegetable Oils	none[3]	Withdrawn by EPA; no plants in Oregon, negative declaration to EPA
4.	EPA-450/2 -78-032	Flat Wood Coating	340-22-200,	Two plants in Medford
5.	EPA-450/2 -78-029	Pharmaceu- ticals	none[3]	Negative declaration to EPA, no plants in Oregon
6.	EPA-450/2 -78-030	Rubber Tires	none[3]	Negative declaration to EPA, no plants in Oregon
7.	EPA-450/2 -78-033	Rotogravure and Flexo- graphy	340-22-210	One plant in Oregon
8.	EPA-450/2 -78-047	Large Tank Second Seals	340-22-160(4)[1]	Gasoline and methanol storage
9.	EPA-450/2 -78-050	Perc Dry Cleaning	340-22-220	Many dry cleaners
10.	EPA-450/2 -78-051	Tank Truck Leak Tests	340-22-137[4]	Many gasoline delivery trucks

[1]The staff made large tank second seals applicable to methanol; the EPA guidelines do not specifically include methanol, but use a 1.5 psia vapor pressure as an exemption point. The methanol stored in Western Oregon in large tanks is sometimes below 1.5 psia and, in summer, sometimes above. Following the precedent set in the present VOC rules, methanol is included in the proposed rule.

[2]In this rule draft, only those using a negligible amount of paint are exempted in rule 340-22-170 (15 pounds per day of VOC or about 3 gallons of high solvent paint). This follows the EPA model rule. The Oregon miscellaneous category includes all other coating and painting except those specifically exempted in 340-22-170(2). The federal model rules attempt to list the affected categories, so the Oregon rule may include a few more sources. An "air dried" category is being proposed, allowing 0.5 pound solvent more per gallon, than is allowed by the Guideline Document. This recognizes the high humidity and cold weather found in Oregon, even in the summer sometimes, which makes the drying of water base paints difficult. Additional painting exemptions, requested by industry, were added in 340-22-170(2)(a).

[3]No rules are included for making Vegetable Oils, Pharmaceuticals or Rubber tires as Oregon has no plants of the type covered by EPA model rules and is not likely to acquire such. A negative declaration will be sent to EPA. There is no need to expand the Oregon Administrative Rules with useless rules, that affect no one, that consume staff time to prepare.

[4]The staff set the leak rate in rule 340-22-137 at one inch in five minutes rather than the less stringent three inches given in EPA's model rule. The staff witnessed truck tests meeting the one inch limit, and has California active rules on file which also require one inch.

OTHER ADDITIONS

Rule 340-22-104 was rewritten to include major (100 tons per year) VOC sources in areas of the State now exempted from VOC rules in parts (1) and (2), and to explain in (3) that small sources (under 100 tons per year) of VOC must comply with these rules only in the Portland, Medford, and Salem areas.

The reasons for statewide VOC rules for major sources are found in an EPA May 4, 1979, memo, from Rhoads to Devine, giving EPA policy concerning the need for emission offsets in rural areas for ozone. In the fourth paragraph, a major rural source is exempt from offsets if the State has adopted Statewide VOC RACT regulations. In the sixth paragraph it is noted that preconstruction monitoring can be avoided "(1) If the State has adopted Statewide VOC RACT regulations, the State must, after issuing the construction permit, then require the source to perform air quality monitoring during the construction of the new facility or (the state) perform the monitoring itself." The Department believes the benefit of a Statewide RACT rule for existing sources (to allow new or expanded sources to locate in attainment areas without offsets) far outweighs the burden of control of a small number of existing sources. In meetings with the Association of Oregon Industries, that group opposed this rule as too burdensome for too little benefit.

In the rule covering exemptions, 340-22-106(1), to conserve energy, the staff considered the possibility of allowing other VOC pollution control devices (besides afterburners) to be idle during the winter months. This addition was discussed in an exchange of letters with EPA (see document 13 in the Statement of Need). EPA is agreeable to such a program on a case by case basis only. Facts supporting the need for this change need to be gathered, and considerable staff time is needed to draft a rule, obtain EPA review, and to obtain review and understanding by the Department air quality and field staff. The staff will prepare a rule change, allowing case by case exemptions for the third round of VOC rules in 1981. Delaying adoption of the VOC Rules until the matter is resolved could jeopardize the approvability of the Oregon SIP.

By additions to Table A of 340-20-155(1), permit fees are proposed for the larger sources of VOC. These fees will cover part of the Department's cost of administering the VOC rules.

An alternative control system rule, 340-22-108, is proposed as promised to the Commission in Agenda Item A2, issue 10, on June 8, 1979. For VOC sources, the Department (with EPA approval) could allow a plant to exceed a VOC rule in process "X" if it was compensated for by capture of an equal amount of VOC in process "Y"; this is also known by the term "bubble concept." Of course this exemption from a rule through the bubble concept, could later be revoked, by the Commission following due process, through additional rules requiring further VOC reductions in process "Y"

The staff added a list of exempt degreasing fluids at the beginning of the degreaser rules, 340-22-180, to clarify the rule and to promote the most cost effective way (switching to a non-reactive fluid) of complying with the rule.

COSTS AND VOC REDUCTIONS

The costs and VOC reductions resulting from the proposed Round II rules are summarized as follows:

Rule	Category	Sources	Annualized[a] Costs $/yr	VOC Reductions Tons/year
340-22-104(2)	Existing State-wide 100 T/Y Sources	10	650,000	383
340-22-137	Delivery Vessel Leak Testing	170	221,000	(4,000 indirectly)[b]
340-22-153	Refinery Leaks	1	11,500	negligible
340-22-160(4)	Large Tank Second Seals	9	99,000	216
340-22-170	Misc. Parts Painting	31	1,271,000	1,000
340-22-200	Flat Wood Coating	2	401,600	188
340-22-210	Rotogravure and Flexography	1	72,800	150
340-22-220	Perchloroethylene Dry Cleaning	185	92,500	200

[a]Costs were figured from data in the Control Technology Guideline documents, except the Department staff generated the costs for Delivery Vessel Leak Testing.

[b]Assures capture of 4,000 TPY through annual tests; the 4,000 TPY reduction was accomplished in the first round of VOC rules.

RULE DEVELOPMENT PROCESS

The second round EPA Guideline documents were published in June and December 1978. Many of the businesses affected had inputs to those documents through their trade associations. The staff has explained these rules to the Association of Oregon Industries (August 21, 1979, and February 7, 1980), to the Oregon Dry Cleaners Association (September 30, 1979), to the Oregon Oil Jobbers Association (November 17, 1979 and March 19, 1980), to the Pacific Northwest Society for Coatings Technology (Spring 1979 and February 19, 1979), and Western Oil and Gas Association Oregon committee (September 1979).

The staff has met individually with most of the larger industries affected.

Members of the Department's air quality staff have reviewed the rules, as have members of the Northwest Region and Willamette Valley offices. Comments from LRAPA and the Medford office have not yet been received. Review by legal counsel will be done from April 4 to May 16, 1980.

Presentations on the overall VOC control program were given to the Portland Air Quality Advisory Committee on October 9, 1979, and March 11, 1980.

SUMMATION

1. EPA requires Oregon to amend the existing VOC rules in their conditional approval of our State Implementation Plan. The eleven requested changes are discussed in this report and found in the attached rules.

2. The Commission committed to adopt a second round of VOC rules in the State Implementation Plan. The proposed rules, as listed in the table on pages 4 and 5 of this memorandum, are found in the attachment.

3. The Department proposes to add the large VOC sources to Table A of 340-20-155, so that standard fees for permits can be charged for the larger sources of VOC to cover part of the Department's administrative costs.

4. The proposed new rules would cover an additional estimated 239 sources in Oregon and reduce VOC emissions by 2,137 tons per year at an estimated cost of $2,600,000. Also 170 gasoline delivery trucks would have to be tested at an annual estimated cost of $221,000 to assure capture of 4,000 tons per year, which was required by the first round of VOC rules.

5. The proposed statewide VOC rules for large existing sources could allow new VOC sources to be located in attainment areas without providing full offsets or preconstruction monitoring. This rule would affect an estimated 10 existing sources, cost them $650,000 per year, and achieve an estimated 400 tons of VOC per year reduction.

6. The rewriting of some of the existing VOC rules will make their numbering conform to that required by the Secretary of State's codifier and will make their meaning more clear.

DIRECTOR's RECOMMENDATION

Based upon the Summation, it is recommended that the Commission authorize a public hearing on May 21, 1980, in Portland to take testimony on the attached proposed amended rules and consider the proposed rules and amended rules for adoption at the Commission's June 20, 1980, meeting.

Bill

WILLIAM H. YOUNG

Attachments: Statement of Need and Fiscal Impact Statement
Proposed rules OAR 340-22-100 to -220
Proposed rules OAR 340-20-155 Table A

PBBosserman:fm
229-6278
April 4, 1980

AF0913

STATEMENT OF NEED FOR RULEMAKING

Pursuant to ORS 183.335(2), this statement provides information on the intended action to amend a rule.

Legal Authority:

ORS 468.020, 468.295(3), 468.065(2), and 468.325

Need for the Rule

To reduce Volatile Organic Compounds being discharged into the atmosphere where they are causing ozone to form and concentrate in excess of federal (40 CFR 50.9) and state (OAR 340-31-030) ambient air quality standards. The rules require specific types of sources of VOC to install control equipment and/or adopt maintenance and operating practices which will reduce VOC emissions to the atmosphere. Revision of 340-20-155 Table A, permit fees, is necessary to cover part of the Department's cost of administering these rules.

Principal Documents Relied Upon

1. "Control of Volatile Organic Compound Leaks from Petroleum Refinery Equipment," EPA-450/2-78-036, June 1978.

2. "Control of Volatile Organic Emissions from Existing Stationary Sources--Volume VI: Surface Coating of Miscellaneous Metal Parts and Products," EPA-450/2-78-015, June 1978.

3. "Control of Volatile Organic Emission from Manufacture of Vegetable Oils," EPA-450/2-78-035, June 1978.

4. "Control of Volatile Organic Emissions from Existing Stationary Sources--Volume VII: Factory Surface Coating of Flat Wood Paneling," EPA-450/2-78-032, June 1978.

5. "Control of Volatile Organic Emissions from Manufacture of Synthesized Pharmaceutical Products," EPA-450/2-78-029, December 1978.

6. "Control of Volatile Organic Emissions from Manufacture of Pneumatic Rubber Tires," EPA-450/2-78-030, December 1978.

7. "Control of Volatile Organic Emissions from Existing Stationary Sources--Volume VIII: Graphic Arts--Rotogravure and Flexography," EPA-450/2-78-033, December 1978.

8. "Control of Volatile Organic Emissions from Petroleum Liquid Storage in External Floating Roof Tanks," EPA-450/2-78-047, December 1978.

9. "Control of Volatile Organic Emissions from Perchloroethylene Dry Cleaning Systems," EPA-450/2-78-050, December 1978.

10. "Control of Volatile Organic Compound Leaks from Gasoline Tank Trucks and Vapor Collection Systems," EPA-450/2-78-051, December 1978.

11. "Guidance to State and Local Agencies in Preparing Regulations to Control Volatile Organic Compounds from Ten Stationary Source Categories," EPA-450/2-79-004, September 1979.

12. "Approval of Oregon State Implementation Plan; Proposed Rulemaking," Federal Register, January 21, 1980, pp 3929 to 3938, see EPA conditional approval of VOC rules on page 3932 and compliance schedules on page 3933.

13. Letters: Patterson of DEQ to Schultz of EPA Region X on October 5, 1979; Hofer of EPA reply, October 30, 1979; winter idling of VOC controls when no ozone standard violations occur.

14. Agenda Item A2, June 8, 1979, EQC Meeting, Adoption of VOC Rules (OAR 340-22-100 to -150) as Amendments to the SIP.

15. EPA October 4, 1979, Memo, "Clarification for Final SIP Actions on Asphalt Regulations," from Richard G. Rhoads, Director of Control Programs Development Division, to Director, Air and Hazardous Materials Division, Regions I-X.

16. Seton, Johnson and Odell, letter March 4, 1980, Glen Odell to Peter Bosserman, suggested changes to Miscellaneous Painting Rule.

17. EPA May 4, 1979, Memo, "Need for Emission Offsets in Rural O_3 Nonattainment Areas," from Richard G. Rhoads, to Thomas Devine, Director, Air and Hazardous Materials Division, Region IV.

18. DEQ Memo, Bosserman to Kowalczyk, February 25, 1980, "Source of Costs and VOC Reductions."

Fiscal Impact Statement

The regulated sources would have to pay permit fees per the attached additions to Table A in OAR 340-20-155(1).

The rule amendments would force certain medium size gasoline stations to install about $1,000 of equipment where they were formerly exempt.

Any industries with large conveyorized degreasers would have to add carbon adsorption or equivalent for about $100,000 to capture escaping VOC vapors. The staff has not yet found any industries affected.

The cost impacts of the added VOC rules are detailed in the control technology guidelines documents, documents 1 through 10 above. A summary of the costs of Oregon industry and commerce, and the VOC reductions realized, are listed in the Department's memorandum to the EQC, April 18, 1980, recommending authorization for a hearing on these rules. Typical examples are offered here:

1. Refinery Leaks, one small refinery, estimate one tenth the cost of the medium size refinery costed by EPA, $11,500 per year.

2. Misc. Painting, switch to waterborne coatings, manual two-coat operation, medium size 8,000,000 square feet per year painted, $41,000 per year.

3. Vegetable Oil--EPA withdrew requirement, no plants in Oregon.

4. Flat Wood Coating, two plants in Medford, $200,800 per year for 2 shifts, 4,000,000 panel per year, shifting to waterborne coatings.

5. Pharmaceuticals--no processes of this type in Oregon.

6. Rubber Tires--no processes of this type in Oregon.

7. Rotogravure and Flexography, carbon adsorber, 3860 tons ink per year, 1,200 ppm, $72,800 per year.

8. Large Tank Second Seals, 55,000 barrel external floating roof tank, rim mounted secondary seal, $3,300 per year per tank.

9. Perc Dry Cleaning, commercial plant, 11 kilogram washer load capacity, add carbon absorber, $500 per year net cost.

10. Tank Truck Leak Tests, EPA did not provide costs, P. Bosserman estimate: $500 annual test fee, downtime penalty $300, hardware and labor fix up cost $500 per year average; $1,300 per year truck annualized cost.

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AF0913.A

Proposed Draft of Changes and Additions to Oregon Administrative Rules, Chapter 340, Affecting Volatile Organic Compounds (VOC)

Introductory Note: Changes and additions are underlined. Deleted portions are bracketed. Rule numbers changes are the same as being done by the Oregon Secretary of State's codifier.

Add to Table A in 340-20-155(1) which requires permits of sources listed in Table A:

Air Contaminant Source, SIC	Application Processing Fee	Compliance Determination Fee
Permits are required for sources 64 thru 71 in the Portland and Medford AQMA's and the Salem SATS, and statewide if VOC emissions exceed 100 tons per year:		
64. Bulk Gasoline Plants 5171	55	150
65. Bulk Gasoline Terminals 5171	1000	500
66. Liquid Storage, not elsewhere included, tanks 39,000 gallons or more capacity	50 per tank	100 per tank
67. Can Coating 3411	1500	900
68. Paper Coating 2641 or 3861	1500	900
69. Coating Flat Wood 2435 or 2492	500	300
70. Surface Coating, Manufacturing		
a) 1-20 tons VOC/yr	25	85
b) 20-100 tons VOC/yr	100	200
c) over 100 tons VOC/yr	500	400
71. Flexographic or Rotogravure Printing, over 60 tons VOC/yr--per plant 2751 or 2754	50 per press	150 per press

(1)
DRAFT A6327.B1 04/03/80

[Correct typing errors in Table A:]

Air Contaminant Source, SIC	Standard Industrial Classification Number
10. Sawmill and/or plan[n]ing	2421
28. Synthetic resin manufacturing	28[~~19~~] 21
36. Blending, compounding or re-refining of lubricating oils and greases	2992
55. Electric power generation	4911 *
58. [~~2~~] b) 5 million or more but less than 250 m[~~illion~~] i llion BTU/hr (heat input)	4961**

General Emission Standards for Volatile Organic Compounds

OAR 340-22-100 Introduction

(1) These rules regulate sources of VOC which contribute to the formation of photochemical oxidant, mainly ozone.

(2) Since [~~oxidant~~] ozone standards are not violated in Oregon from November through March (because of insufficient solar energy), these rules allow control devices to lay idle during the winter months. [~~Since much of the state is considered in attainment with ozone standards, sources in "clean" areas are exempted from these rules.~~]

(3) Sources regulated by these rules are:

a. New Sources Statewide [~~over~~] which will emit 100 tons of VOC per year or more; existing 100 ton sources Statewide in categories b thru m below, and all new and existing sources in the Portland and Medford AQMA's and in the Salem SATS for categories b thru m below.
b. Gasoline stations, underground tank filling
c. Bulk Gasoline Plants and Delivery Vessels
d. Bulk Gasoline Terminal
e. Cutback Asphalt
f. Petroleum Refineries, Petroleum Refinery Leaks
g. VOC Liquid Storage, Secondary Seals
h. Coating including paper coating and misc. painting
i. Degreasers
j. Asphaltic and Coal Tar Pitch in Roofing
k. Flat wood coating
l. Rotogravure and Flexographic Printing
m. Perchloroethylene Dry Cleaning

Definitions

340-22-[~~100~~] 102: As used in these regulations, unless otherwise required by context:

(1) "Air dried coating" means coatings which are dried by the use of air at ambient temperature.

[~~7~~] (2) "Bulk gasoline plant" means a gasoline storage and distribution facility which receives gasoline from bulk terminals by railroad car or trailer transport, stores it in tanks, and subsequently dispenses it via account trucks to local farms, businesses, and service stations.

[~~8~~] (3) "Bulk gasoline terminal" means a gasoline storage facility which receives gasoline from refineries primarily by pipeline, ship, or barge, and delivers gasoline to bulk gasoline plants or to commercial or retail accounts primarily by tank truck.

(4) "Carbon Bed Breakthrough" means the initial indication of depleted adsorption capacity characterized by a sudden measureable increase in VOC concentration exiting a carbon adsorption bed or column.

(5) "Certified Underground Storage Device" means vapor recovery equipment for underground storage tanks as certified by the State of California Air Resources Board Executive Orders, copies of which are on file with the Department.

(6) "Class II hardboard paneling finish" means finishes which meet the specifications of Voluntary Product Standard PS-59-73 as approved by the American National Standards Institude.

(7) "Clear coat" means a coating which lacks color and opacity or is transparent and uses the undercoat as a reflectant base or undertone color.

(8) "Coating Line" means one or more apparatus or operations which include a coating applicator, flash-off area, and oven or drying station wherein a surface coating is applied, dried, and/or cured.

[~~(10)~~] (9) "Cutback asphalt" means a mixture of a base asphalt with a solvent such as gasoline, naphtha, or kerosene. Cutback asphalts [~~can be~~] are rapid, medium, or slow curing (known as RC, MC, SC), as defined in ASTM D2399.

(10) "Day" means a 24-hour period beginning at midnight.

[~~(9)~~] (11) "Delivery vessel" means any tank truck or trailer used for the transport of gasoline from sources of supply to stationary storage tanks. [~~of gasoline dispensing facilities and the attached vapor recovery system.~~]

(12) "Dry cleaning facility" means any facility engaged in the cleaning of fabrics in an essentially nonaqueous solvent by means of one or more washes in solvent, extraction of excess solvent by spinning, and drying by tumbling in an airstream. The facility includes but is not limited to any washer, dryer, filter and purification systems, waste disposal systems, holding tanks, pumps, and attendant piping and valves.

(13) "Extreme performance coatings" means coatings designed for extreme environmental conditions such as exposure to any one of the following: the weather all of the time, temperatures consistently above 95^{o}C, detergents, abrasive and scouring agents, solvents, corrosive atmosphere, or similar environmental conditions.

(14) "Flexographic Printing" means the application of words, designs and pictures to a substrate by means of a roll printing technique in which the pattern to be applied is raised above the printing roll and the image carrier is made of rubber or other elastomeric materials.

[~~(11)~~] (15) "Freeboard ratio" means the freeboard height divided by the width (not length) of the degreaser's air/solvent area.

(16) "Forced air dried coating" means a coating which is dried by the use of warm air at temperatures up to 90^{o} C (194^{o} F).

[~~(5)~~] (17) "Gasoline" means any petroleum distillate having a Reid vapor pressure of 27.6 kPa (4.0 psi) or greater which is used to fuel internal combustion engines.

[~~(12)~~] (18) "Gasoline dispensing facility" means any site where gasoline is dispensed to motor vehicle, boat, or airplane gasoline tanks from stationary storage tanks.

(19) "Gas service" means equipment which processes, transfers or contains a volatile organic compound or mixture of volatile organic compounds in the gaseous phase.

(20) "Hardboard" is a panel manufactured primarily from inter-felted ligno-cellulosic fibers which are consolidated under heat and pressure in a hot press.

(21) "Hardwood plywood" is plywood whose surface layer is a veneer of hardwood.

(22) "LAER" means the rate of emissions which reflects

(A) the most stringent emission limitation which is contained in the implementation plan of any State for such class or category of source, unless the owner or operator of the proposed source demonstrates that such limitations are not achievable, or not maintainable for the proposed source or

(B) the most stringent emission limitation which is achieved and maintained in practice by such class or category of source, whichever is more stringent.

In no event shall the application of LAER allow a proposed new or modified source to emit any pollutant in excess of the amount allowable under applicable new source standards of performance (OAR 340-25-535).

(23) "Leaking component" means any petroleum refinery source which has a volatile organic compound concentration exceeding 10,000 parts per million (ppm) when tested in the manner described in method 31 and 33 on file with the Department. These sources include, but are not limited to, pumping seals, compressor seals, seal oil degassing vents, pipeline valves, flanges and other connections, pressure relief devices, process drains, and open-ended pipes. Excluded from these sources are valves which are not externally regulated.

(24) "Liquid service" means equipment which processes, transfers or contains a volatile organic compound or mixture of volatile organic compounds in the liquid phase.

[~~(3)~~] (25) "Modified" means any change in the method of operation of, or addition to, or physical change of a stationary source which increases the[~~potential~~] allowable emission rate of any VOC regulated (including any not previously emitted and taking into account all accumulated increases in[~~potential~~] allowable emissions occurring at the source since regulations were adopted under this section, or since the time of the last construction approval was issued for the source pursuant to such regulations approved under this section, whichever time is more recent, regardless of any emission reductions achieved elsewhere in the source).

[~~(i)~~] (a) A physical change shall not include routine maintenance, repair and replacement, unless there is an increase in emission.

[~~(ii)~~] (b) A change in the method of operation, unless previously limited by enforceable permit conditions, shall not include:

[~~(a)~~] (A) An increase in the production rate, if such [~~increase~~] does not involve a physical change or exceed [~~the operating design capacity of the source~~] permit limits;

[~~(b)~~] (B) An increase in the hours of operation;

[~~(c)~~] (C) Use of an alternative fuel or raw material by reason of an order in effect under sections 2(a) and (b) of the Energy Supply and Environmental Coordination Act of 1974 (or any superceding legislation), or by reason of a natural gas curtailment plan in effect pursuant to the Federal Power Act;

[~~(d)~~] (D) Use of an alternative fuel or raw material, if prior to January 6, 1975, the source was capable of accommodating such fuel or material; or

[~~(e)~~] (E) Use of an alternative fuel by reason of any order or rule under Section 125 of the Federal Clean Air Act, 1977;

[~~(f)~~] (F) Change in ownership of the source.

(26) "Natural finish hardwood plywood panels" means panels whose original grain pattern is enhanced by essentially transparent finishes frequently supplemented by fillers and toners.

[~~(13)~~] (27) "Operator" means any person who leases, operates, controls, or supervises a facility at which gasoline is dispensed.

[~~(14)~~] (28) "Owner" means any person who has legal or equitable title to the gasoline storage tanks at a facility.

(29) "Packaging rotogravure printing" means rotogravure printing upon paper, paper board, metal foil, plastic film, and other substrates, which are, in subsequent operations, formed into packaging products and labels for articles to be sold.

(30) "Person" means the federal government, any state, individual, public, or private corporation, political subdivision, governmental agency, municipality, industry, co-partnership, association, firm, trust, estate, or any other legal entity whatsoever.

(31) "Petroleum refinery" means any facility engaged in producing gasoline, aromatics, kerosene, distillate fuel oils, residual fuel oils, lubricants, asphalt, or other products through distillation of petroleum, crude oil, or through redistillation, cracking, or reforming of unfinished petroleum derivatives. "Petroleum refinery" does not mean a re-refinery of used motor oils or other waste chemicals. "Petroleum refinery" does not include asphalt blowing or separation by stripping of products shipped together.

[~~(4) "Potential to emit" means the capability at maximum capacity to emit a pollutant in the absence of air pollution control equipment. "Air pollution control equipment" includes control equipment which is not, aside from air pollution control laws and regulations, vital to production of the normal product of the source or its normal operation. Annual potential shall be based on the maximum annual rated capability of the source, unless the source is subject to enforceable permit conditions which limit annual hours of operation. Enforceable permit conditions on the type or amount of materials combusted or processed may be used in determining the potential emission rate of a source.~~]

(32) "Printed interior panels" means panels whose grain or natural surface is obscured by fillers and basecoats upon which a simulated grain or decorative pattern is printed.

(33) "Printing" means the formation of words, designs and pictures, usually by a series of application rolls each with only partial coverage.

(34) "Publication rotogravure printing" means rotogravure printing upon paper which is subsequently formed into books, magazines, catalogues, brochures, directories, newspaper supplements, and other types of printed materials.

(35) "Roll printing" means the application of words, designs and pictures to a substrate by means of hard rubber or steel rolls.

[~~(2)~~] (36) "Source" means any structure, building, facility, equipment installation, or operation (or combination thereof) which is located on one or more contiguous or adjacent properties, which is owned or operated by the same person (or persons under common control), and which emits any VOC. "Source" does not include VOC pollution control equipment.

[~~(15)~~] (37) "Splash filling" means the filling of a delivery vessel or stationary storage tanks through a pipe or hose whose discharge opening is above the surface level of the liquid in the tank being filled.

[~~(6)~~] (38) "Submerged fill" means[~~the filling of a delivery vessel or stationary tank through a pipe or hose whose discharge opening extends to within 6 inches of the bottom or is entirely submerged when the pipe normally used to withdraw liquid from the tank can no longer withdraw any liquid.~~] any fill pipe or hose, the discharge opening of which is entirely submerged when the liquid level is 6 inches above the bottom of the tank; or when applied to a tank which is loaded from the side, shall mean any fill pipe, the discharge of which is entirely submerged when the liquid level is 18 inches or is twice the diameter of the fill pipe, whichever is greater, above the bottom of the tank.

(39) "Thin particleboard" is a manufactured board 1/4 inch or less in thickness made of individual wood particles which have been coated with a binder and formed into flat sheets by pressure.

(40) "Tileboard" means panelling that has a colored waterproof surface coating.

(41) "True Vapor Pressure" means the equilibrium pressure exerted by a petroleum liquid as determined in accordance with methods described in American Petroleum Institute Bulletin 2517, "Evaporation Loss from Floating Roof Tanks," 1962.

[~~(16)~~] (42) "Vapor balance system" means a combination of pipes or hoses which create a closed system between the vapor spaces of an unloading tank and a receiving tank such that vapors displaced from the receiving tank are transferred to the tank being unloaded.

[~~(1)~~] (43) "Volatile Organic Compound," (VOC), means any compound of carbon that has a vapor pressure greater than 0.1 mm of Hg at standard conditions (temperature 20°C, pressure 760 mm of Hg). Excluded from the category of Volatile Organic Compounds are carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate, and those compounds which the U.S. Environmental Protection Agency classifies as being of negligible photochemical reactivity which are methane, ethane, methyl chloroform, methylene chloride, and trichlorotrifluoroethane.

LIMITATIONS AND REQUIREMENTS

GENERAL REQUIREMENTS FOR NEW AND EXISTING SOURCES

OAR 340-22-104

(1) Not withstanding the emission limitation in these rules, all new or modified stationary sources, statewide, with allowable VOC emission increases in excess of 90,720 kilograms (100 tons) per year, shall meet the Lowest Achievable Emission Rate (LAER).

(2) All existing, stationary sources, statewide, which have processes subject to these VOC rules and which emit or are allowed more than 100 tons per year of VOC emissions shall comply with OAR 340-22-110 to 340-22-220 by December 31, 1982.

(3) Small sources (emitting less than 90,720 Kilograms of VOC per year) outside the following areas are exempted from the General Emission Standards for Volatile Organic Compounds:

(a) Portland-Vancouver Air Quality Maintenance Area
(b) Medford-Ashland Air Quality Maintenance Area
(c) Salem Area Transportation Study (SATS) Area

[~~Lowest Achievable Emission Rate~~]

[~~OAR 340-22-104 in areas where these rules for VOC are applicable, all new or modified sources, with potential volatile organic compound emissions in excess of 90,720 kilograms (100 tons) per year, shall meet the Lowest Achievable Emission Rate (LAER).~~]

[~~Lowest Achievable Emission Rate or LAER means the rate of emissions which reflects:~~]

[~~(A) The most stringent emission limitation which is contained in the implementation plan of any state for such class or category of source, unless the owner or operator of the proposed source demonstrates that such limitations are not achievable, or not maintainable for the proposed source or~~]

[~~(B) The most stringent emission limitation which is achieved and maintained in practiced by such class or category of source, whichever is more stringent.~~]

[~~In no event shall the application of LAER allow a proposed new or modified source to emit any pollutant in excess of the amount allowable under applicable new source standards of performance (OAR 340-25-525).~~]

Exemptions

OAR 340-22-[~~105~~] 106 Natural gas-fired afterburners and other VOC pollution control devices installed for the purpose of complying with these rules shall be operated during the months of April, May, June, July, August, September, and October. During other months, the afterburners and other VOC pollution control devices may be turned off with prior written Departmental approval, provided that the operation of such devices is not required for purposes of occupational health or safety, or for the control of toxic substances, malodors, or other regulated pollutants, or for complying with visual air contaminant limitations.

[~~OAR 340-22-106 sources are exempted from the General Emission Standards for Volatile Organic Compounds if they are outside the following areas:~~

~~1) Portland-Vancouver Air Quality Maintenance Area~~
~~2) Medford-Ashland Air Quality Maintenance Area~~
~~3) Salem Area Transportation Study Boundary~~]

[~~Testing~~] Compliance Determination

340-22-107

(1) Certification and Test procedures are on file with the Department and are partly the certification and test procedures used by the California Air Resources Board as of August 9, 1978. Applicants are encouraged to submit designs approved by the California Air Resources Board, the Bay Area Air Quality Management District, the South Coast Air Quality Management District, or the San Diego County Air Pollution Control District, where VOC control equipment has been developed. Construction approvals and proof of compliance will, in most cases, be based on Departmental evaluation of the source and controls.

(2) The person responsible for an existing emission source [~~subject to 340-22-100 through 340-22-150~~] shall proceed promptly with a program to comply as soon as practicable with these rules. A proposed program and implementation plan including increments of progress shall be submitted to the Department for review no later than May 1, 1979, for each emission source required to comply with VOC rules adopted by the Commission on December 15, 1978. For sources required to comply with the VOC rules amended by the Commission on June 8, 1979, compliance schedules shall be submitted no later than October 1, 1979. See the following table for later compliance dates. Compliance shall be demonstrated no later than the date specified in the individual sections of these rules and as shown below. The Department shall within 45 days of receipt of a complete proposed program and implementation plan, complete an evaluation and advise the applicant of its approval or other findings.

(3) The following compliance schedule increments of progress shall be completed:

340-22 Rule Section	Submit Plans to Dept.	Place Purchase Orders	Begin Construction	Complete Construction	Demonstrate Compliance
-104 Existing Statewide 100 T/Y Sources	10/01/80	10/01/81	02/01/82	10/31/82	12/31/82
-110 Gasoline dispensing	10/01/79	12/31/80	03/15/81	04/01/81	04/01/81
-120 Bulk plants	10/01/79	07/01/80	12/31/80	04/01/81	04/01/81
-130 Gasoline terminals	05/01/79	04/01/80	12/01/80	04/01/81	04/01/81
-137 Delivery vessel	10/01/80	11/20/80	02/15/81	03/01/81	04/01/81
-140 Cutback asphalt	N/A	N/A	N/A	N/A	04/01/79
(4) Emulsified specs	N/A	N/A	N/A	N/A	04/01/81

340-22 Rule Section	Submit Plans to Dept.	Place Purchase Orders	Begin Construction	Complete Construction	Demonstrate Compliance
-150, -153					
Oil refinery	10/01/80	N/A	N/A	N/A	10/01/80
-160					
Liquid	10/01/79	07/01/80	10/01/80	04/01/81	04/01/81
storage,					
Secondary	10/01/80	01/02/81	07/01/81	12/31/81	12/31/81
seals					
-170					
Surface					
coating:					
Can & paper	05/01/79	11/01/81	05/01/82	12/01/82	12/31/82
coating,					
misc products	10/01/80	01/02/81	01/02/82	11/01/82	12/31/82
& metal parts					
-180					
Degreasers:					
Operating	05/01/79	10/01/79	02/01/80	04/01/80	04/01/80
procedures,					
Add-on	10/01/80	04/01/81	07/01/81	01/02/82	04/01/82
controls					
-190					
Roofing	N/A	N/A	N/A	N/A	04/01/80
tar					
-200					
Flatwood	10/01/80	01/02/81	01/02/82	11/01/82	12/31/82
coating					
-210					
Printing	10/01/80	04/01/81	09/01/81	04/01/82	07/01/82
roto & flex					
-220					
Perc dry	10/01/80	02/01/81	04/01/81	10/01/81	01/01/82
cleaning					

Applicability of Alternative Control Systems

340-22-108

(1) A source may install and operate alternative control systems or changes in process on a plant site basis and be exempt from these rules provided:

(a) An application for an alternative control system is submitted in writing; and,

(b) An application and supporting documentation demonstrates that the volatile organic compound reduction in emissions is equal to or greater than that required by the General Emission Standards for Volatile Organic Compounds; and,

(c) Approval is granted in writing by the Department.

(d) The alternative control system is approved by the Environmental Protection Agency.

(2) Alternative Control Systems shall be approved for a specified period of time, however, such approval shall not exempt the source from complying with subsequent rule modifications or air quality control strategies required, provided further the source may provide new alternative control systems to meet the new promulgation or requirements.

Small Gasoline Storage[~~Tanks (Under 40,000 Gallons Capacity)~~]

340-22-110

(1) No person may transfer or cause or allow the transfer of gasoline from any delivery vessel which was filled at a Bulk Gasoline Terminal or nonexempted Bulk Gasoline Plant into any stationary storage tank[~~unless:~~

~~(a) The tank is filled by submerged fill.~~
~~(b) The displaced vapors from the tank are:~~

~~(i) Transferred to the delivery vessel by means of a vapor balance system that prevents release to the atmosphere of no less than 90 percent by weight of the vapors displaced,~~
~~(ii) Processed by a vapor control system that prevents release to the atmosphere of no less than 90 percent by weight of the vapors displaced,~~
~~(iii) Processed by a system demonstrated to the satisfaction of the Department to be of equivalent effectiveness to (i) and (ii) above.~~

~~(c) The tank is equipped with a system to ensure that the vapor capture return line will be connected during transfer.~~]

of less than 40,000 gallon capacity unless:

(a) The tank is filled by Submerged Fill, and
(b) A vapor recovery system is used which consists of a Certified Underground Storage Tank Device capable of collecting the vapor from volatile organic liquids and gases so as to prevent their emission to the outdoor atmosphere. All tank gauging and sampling devices shall be gas-tight except when gauging or sampling is taking place, or
(c) The vapors are processed by a system demonstrated to the satisfaction of the Department to be of equal effectiveness.

(2) Exemptions. This section will not apply to:

(a) Transfers made to storage tanks of gasoline dispensing facilities equipped with floating roofs or their equivalent.
(b) Stationary gasoline storage containers of less than 2,085 liters (550 gallons) capacity used exclusively for the fueling of implements of[~~husbandry~~] farming, provided the containers use submerged fill.

an exempted

(c) Stationary gasoline storage tanks located at a gasoline dispensing facility that are filled by a delivery vessel which was filled at a bulk gasoline plant (one which loads less than 4000 gallons per day of gasoline); provided that the storage tanks use submerged fill. However, no person shall deliver gasoline to a [~~source~~] gasoline dispensing facility at a rate exceeding [~~240,000 gallons per year~~] 10,000 gallons per month from bulk gasoline plants, unless [~~90 percent by weight of the gasoline vapors displaced during the filling of the delivery truck and during the filling of the source's tank(s) are prevented from being released to the atmosphere.~~] the gasoline vapor is handled as required by rule 340-22-110(1)(a), (b), or (c).

(3) The owner, operator, or builder of any stationary storage container subject to 340-22-110 shall comply by April 1, 1981.

(4) Compliance with 340-22-110(1)(b) shall be determined by verification of use of equipment identical to equipment most recently approved and listed for such use by the Department or by testing in accordance with Method 30 on file with the Department. This method may be revised by the Department for improvement based upon experience and new data. However, no revision shall apply to a compliance test scheduled prior to the making of the revision, unless the owner concurs.

[Bulk Gasoline Plants and Delivery Vessels

340-22-115

(1) No person shall transfer or allow the transfer of gasoline to or from a bulk gasoline plant unless:

(a) Each stationary storage tank is equipped with a submerged fill line.
(b) The displaced vapors from filling each stationary gasoline storage tank are:

(i) Processed by a vapor control system or a vapor balance system that prevents release to the atmosphere of no less than 90 percent by weight of the vapors displaced; or
(ii) Processed by a system demonstrated to the satisfaction of the Department to be of equivalent effectiveness to (i) above.

(c) All connections or fitting to vapor lines, connecting pipes or hoses on the storage tank or loading or unloading delivery vessel are vapor tight and will automatically and immediately close when disconnected.
(d) Each stationary gasoline storage tank is equipped with pressure relief valves set to release at no less than 3.4 kPa (.50 psi) or some other setting approved in writing by the Department.
(e) Each delivery vessel loaded at a bulk gasoline plant is filled by submerged filling.
(f) Each delivery vessel is unloaded in a manner that hatches are not opened at any time during unloading except where necessary for the proper operation of the vapor recovery system.
(g) Gasoline is handled in a manner to prevent spillage, discharging into sewers, storage in open containers, or handled in any other manner that would result in evaporation. If an accident occurs, it shall be reported in accordance with 340-21-065 to -075.
(h) The vapor-laden delivery vessel is designed and maintained to be vapor tight at all times.]

Rewritten; see next page.

Bulk Gasoline Plants and Delivery Vessel(s)

340-22-120

(1) No person shall transfer or allow the transfer of gasoline to or from a bulk gasoline plant unless:

(a) Each stationary storage tank and each delivery vessel uses submerged fill when transferring gasoline;

(b) The displaced vapors from filling each tank and each delivery vessel are prevented from being released to the atmosphere through use of a vapor tight vapor balance system, or equivalent system as approved in writing by the Department. Exceptions and limitations are as follows in (c), (d), and (e).

(c) If a bulk gasoline plant transfers less than 4,000 gallons of gasoline per day (annual through-put divided by the days worked), capture of displaced vapors during the filling of delivery vessel(s) from the bulk plant is exempt from 340-22-120(b) and the bulk plant's customers are exempt from 340-22-110(b) and (c).

(d) Each stationary gasoline storage tank may release vapor to the atmosphere through a pressure relief valve set to release at no less than 3.4 kPa (.50 psi) or some other setting approved in writing by the Department.

(e) Gasoline is handled in a manner to prevent spillage, discharging into sewers, storage in open containers, or handled in any other manner that would result in evaporation. If more than five gallons are spilled, the operator shall report the spillage in accordance with 340-21-065 to -075.

(2) The owner(s) and operator(s) of bulk gasoline plants and delivery vessels subject to 340-22-120 shall comply with the provisions of this rule by April 1, 1981.

(3) Compliance with 340-22-120(1)(b) shall be determined by verification of use of equipment approved by the Department and/or by testing and monitoring in accordance with applicable portions of 340-22-137 and/or Method 31 and/or 32 on file with the Department.

(4) Each gasoline delivery vessel shall be designed and maintained to be vapor tight at all times, in accordance with 340-22-137(1), (3), (4), and (5).

Bulk Gasoline Terminals

340-22-[~~120~~] 130 (1)

After April 1, 1981, no person shall cause volatile organic compounds (VOC) to be emitted into the atmosphere in excess of 80 milligrams of VOC per liter of gasoline loaded from the operation of loading truck tanks, and truck trailers at bulk gasoline terminals with daily throughputs of greater than 76,000 liters (20,000 gallons) per day of gasoline. The daily throughputs are the annual throughput divided by 365 days.

[~~340-22-121~~] (2)

Compliance with 340-22-[~~120~~] 130 shall be determined by testing in accordance with Method 33 on file with the Department. This method may be revised by the Department for improvement based upon experience and new data. However, no revision shall apply to a compliance test scheduled prior to the making of the revision, unless the owner concurs.

[~~340-22-122~~] (3)

Bulk Gasoline terminals shall comply with the following within the limits of 340-22-130(1):

[~~(1)~~] (a) All displaced vapors and gases during tank truck gasoline loading operations are vented only to the vapor control system, except [~~as permitted in writing by the Department.~~] when gasoline delivery vessels are switched to diesel delivery service or to delivery of other VOC with Reid vapor pressure less than 1.5 psia.

[~~(2)~~] (b) The loading device must not leak when in use. The loading device shall be designed and operated to allow no more than 10 cubic centimeters drainage per disconnect on the basis of five consecutive disconnects.

[~~(3)~~] (c) All loading and vapor lines are equipped with fittings which make vapor-tight connections and which close automatically and immediately when disconnected.

[~~(4)~~] (d) Gasoline is handled in a manner to prevent its being discarded in sewers or stored in open containers or handled in any manner that would result in evaporation. If [~~an accident occurs, it shall be reported~~] more than 5 gallons are spilled, the operator shall report the spillage in accordance with 340-21-065 to -075.

[~~(5)~~] (e) The vapor collection system is operated in a manner to prevent the pressure[~~in the vapor collection system to exceed~~] therein from exceeding the tank truck or trailer pressure relief settings.

TESTING VAPOR TRANSFER AND COLLECTION SYSTEMS

340-22-137

(1) After April 1, 1981, no person shall allow a vapor-laden delivery vessel subject to 340-22-120(1) to be filled or emptied unless the delivery vessel:

(a) Is tested annually according to the test method 32 on file with the Department.

(b) Sustains a pressure change of no more than 250 pascals (1 in. of H_2O) in 5 min when pressurized to a guage pressure of 4,500 pascals (18 in. of H_2O) or evacuated to a guage pressure of of 1,500 pascals (6 in. of H_2O) during the testing required in subsection (1)(a) of this rule; and

(c) Displays a sticker near the Department of Transportation Certification plate required by 49 CFR 178.340-10b, which:

(A) Shows the year and month that the gasoline tank truck last passed the test required in sections (1)(a) and (b) of this rule;

(B) Shows the identification of the sticker; and,

(C) Expires not more than one year from the date of the leak-test test.

(2) After April 1, 1981, the owner or operator of a vapor collection system subject to this regulation shall design and operate the vapor collection system and the gasoline loading equipment in a manner that prevents:

(a) Gauge pressure from exceeding 4,500 pascals (18 in. of H_2O) and vacuum from exceeding 1,500 pascals (6 in. of H_2O) in the gasoline tank truck being loaded;

(b) A reading equal to or greater than 100 percent of the lower explosive limit (LEL, measured as propane) at 2.5 centimeters from all points on the perimeter of a potential leak source when measured by the method 31 and 33 on file with the Department, or unloading operations at gasoline dispensing facilities, bulk plants and bulk terminals; and

(c) Visible liquid leaks during loading or unloading operations at gasoline dispensing facilities, bulk plants and bulk terminals.

(3) The Department may, at any time, monitor a gasoline tank truck, vapor collection system, or vapor control system, by the methods on file with the Department, to confirm continuing compliance with sections (1) or (2) of this rule, except that upon retest a delivery vessel is allowed a pressure change of no more than 500 pascals (2.0 in. of H_2O) in section(1)(b).

RECORDKEEPING AND REPORTING

(4) The owner or operator of a source of volatile organic compounds subject to this regulation shall maintain records of all certification testing and repairs. The records must identify the gasoline tank truck, vapor collection system, or vapor control system; the date of the test or repair; and, if applicable, the type of repair and the date of retest. The records must be maintained in a legible, readily available condition for at least two years after the date of testing or repair was completed.

(5) Copies of all records and reports under rule 340-22-130(4) and (5) shall immediately be made available to the Department, upon verbal or written request, at any reasonable time.

CUTBACK AND EMULSIFIED ASPHALT

340-22-[~~125~~] 140

(1) After April 1, 1979, [~~all uses and applications~~] use of any cutback asphalt [~~s~~] for paving roads & parking areas [~~are~~] is prohibited during the months of April, May, June, July, August, September, and October, except as provided for in 340-22-[~~125~~] 140 (2).

(2) [~~The following uses and applications of cutback asphalts shall be allowed during all months provided the cutback or blending petroleum distillate has a total vapor pressure (sum of the partial pressures of the constituents) less than 26mm of Hg at 20°C.~~] Slow curing (SC) and medium curing (MC) cutback asphalts are allowed during all months only for the following uses and applications:

(a) Solely as a penetrating prime coat for aggregate bases prior to paving;
(b) For the manufacture of medium-curing patching mixes to provide long-period storage stockpiles used exclusively for pavement maintenance; or,
(c) For all uses when the National Weather Service forecast of the high temperature during the 24-hour period following application is below 10°C (50°F).

(3) Rapid curing (RC) grades of cutback asphalt are always prohibited.

(4) Use of emulsified asphalts is unrestricted if solvent content is kept at or less than the limits listed below. If these limits are exceeded, then the asphalt shall be classified as medium curing (MC) cutback asphalts, and shall be limited to only the uses permitted by 340-22-140(2).

	Grades of Emulsion Per AASHTO Designation M 208-72	Maximum Solvent Content by Weight
(a)	CRS-1	3%
(b)	CRS-2	3%
(c)	CSS-1	3~~0~~%
(d)	CSS-1h	3~~0~~%
(e)	CMS-2	8%
(f)	CMS-2h	8%
(g)	CMS-2S	12%
(h)	Other	8%

Solvent content is determined by ASTM distillation test D-244.

PETROLEUM REFINERIES

340-22-[~~130~~] 150

After April 1, 1979, these regulations shall apply to all petroleum refineries.

(1) Vacuum-Producing Systems

(a) Noncondensable VOC from vacuum-producing systems shall be piped to an appropriate firebox, incinerator, or to a closed refinery system.

(b) Hot wells associated with contact condensers shall be tightly covered and the collected VOC introduced into a closed refinery system.

(2) Wastewater Separators

(a) Wastewater separators forebays shall incorporate a floating pontoon or fixed solid cover with all openings sealed totally enclosing the compartmented liquid contents, or a floating pontoon or double deck-type cover equipped with closure seals between the cover edge and compartment wall.

(b) Accesses for gauging and sampling shall be designed to minimize VOC emissions during actual use. All access points shall be closed with suitable covers when not in use.

(3) Process Unit Turnaround

(a) The VOC contained in a process unit to be depressurized for turnaround shall be introduced to a closed refinery system, combusted by a flare, or vented to a disposal system.

(b) The pressure in a process unit following depressurization for turnaround shall be less than 5 psig before venting to the ambient air.

(4) Maintenance and Operation of Emission Control Equipment

Equipment for the reduction, collection, or disposal of VOC shall be maintained and operated in a manner commensurate with the level of maintenance and housekeeping of the overall plant.

PETROLEUM REFINERY LEAKS

340-22-153

(1) After October 1, 1980, all persons operating petroleum refineries shall comply with the following rules concerning leaks:

(a) The owner or operator of a petroleum refinery complex, upon detection of a leaking component, which has a volatile organic compound concentration exceeding 10,000 ppm when tested in the manner described below shall:

(A) Include the leaking component on a written list of scheduled repairs; and,

(B) Repair and retest the component within 15 days.

(b) Except for safety pressure relief valves, no owner or operator of a petroleum refinery shall install a valve at the end of a pipe or line containing volatile organic compounds unless the pipe or line is sealed with a second valve, a blind flange, a plug, or a cap. The sealing device may be removed only when a sample is being taken maintenance operations.

(c) Pipeline valves and pressure relief valves in gaseous volatile organic compound service shall be marked in some manner that will be readily obvious to both refinery personnel performing monitoring and the Department.

(2) TESTING PROCEDURES:

Testing and calibration procedures to determine compliance with this regulation must be approved by the Department and consistent with Appendix B of "Control of Volatile Organic Compounds Leaks from Petroleum Refinery Equipment," EPA-450/2-78-036.

(3) MONITORING, RECORDKEEPING, REPORTING

(a) The owner or operator of a petroleum refinery shall maintain, as a minimum, records of all testing conducted under this rule; plus records of all monitoring conducted under paragraphs (b) and (c) of this section.

(b) The owner or operator of a petroleum refinery subject to this regulation shall:

(A) Monitor yearly by the methods referenced in 340-22-153 (2) all:

(i) Pump seals;
(ii) Pipeline valves in liquid service; and
(iii) Process drains.

(B) Monitor quarterly by the methods referenced in 340-22-153(2) all:

(i) Compressor seals,
(ii) Pipeline valves in gaseous service; and,
(iii) Pressure relief valves in gaseous service.

(C) Monitor weekly by visual methods all pump seals;
(D) Monitor immediately any pump seal from which liquids are observed dripping;
(E) Monitor any relief valve within 24 hours after it has vented to the atmosphere; and
(F) Monitor immediately after repair of any component that was found leaking.

(c) Pressure relief devices which are connected to an operating flare header, vapor recovery device, inaccessible valves, storage tank valves, or valves that are not externally regulated are exempt from the monitoring requirements in 340-22-153(3)(b).

(d) The owner or operator of a petroleum refinery, upon the detection of a leaking component, shall affix a weatherproof and readily visible tag bearing an identification number and the date the leak is located to the leaking component. This tag shall remain in place until the leaking component is repaired.

(e) The owner or operator of a petroleum refinery, upon the completion of each yearly and/or quarterly monitoring procedure, shall:

(A) Submit a report to the Department on the 15th day of January, April, July, and September, listing the leaking components that were located but not repaired within the required time limit in 340-22-]53(3)(])(a);
(B) Submit a signed statement attesting to the fact that, with the exception of those leaking components listed in 340-22-153(3)(e)(A), all monitoring and repairs were performed as stipulated.

(f) The owner or operator of a petroleum refinery shall maintain a leaking component monitoring log which shall contain, at a minimum, the following data:

(A) The name of the process unit where the component is located;
(B) The type of component (e.g., valve, seal);
(C) The tag number of the component;
(D) The date on which a leaking component is discovered;
(E) The date on which a leaking component is repaired; and
(F) The date and instrument reading of the recheck procedure after a leaking component is repaired.
(G) A record of the calibration of the monitoring instrument.
(H) Those leaks that cannot be repaired until turnaround, (exceptions to the 15 day requirement of 340-22-153(1)(a) B).
(I) The total number of components checked and the total number of components found leaking.

(g) Copies of all records and reports required by this section shall be retained by the owner or operator for a minimum of four years after the date on which the record was made or the report submitted.
(h) Copies of all records and reports required by this section shall immediately be made available to the Department upon verbal or written request at any reasonable time.
(i) The Department may, upon written notice, modify the monitoring, recordkeeping and reporting requirements.

Liquid Storage

340-22-[~~135~~] 160(1)

After April 1, 1981,[~~all~~] owners or operators which have tanks storing methanol [~~and~~] or other volatile organic compound liquids with a true vapor pressure, as stored, greater than 10.5 kPa (kilo Pascals) (1.52 psia), but less than 76.7 kPa (11.1 psia) and having a capacity greater than 150,000 liters (approximately 39,000 gallons) shall comply with one of the following:

[~~(1)~~] (a) Meet the equipment specifications and maintenance requirements of the federal standards of performance for new stationary sources--Storage Vessels for Petroleum Liquids, 40 CFR 60, Subpart K, as amended by proposed rule change, Federal Register, May 18, 1978, pages 21616 through 21625.

[~~(2)~~] (b) Be retrofitted with a floating roof or internal floating cover using at least a nonmetallic resilient seal as the primary seal meeting the equipment specifications in the federal standards referred to in 340-22-[~~135(1)~~] 160(a) above, or its equivalent.

[~~(3)~~] (c) Is fitted with a floating roof or internal floating cover meeting the manufacturers equipment specifications in effect when it was installed.

[~~340-22-136~~]

(2) All seals used in 340-22-[~~135(2) and (3)~~] 160(1)(b) and (c) above are to be maintained in good operating condition and the seal fabric shall contain no visible holes, tears, or other openings.

(3) All openings, except stub drains and those related to safety, are to be sealed with suitable closures. All tank gauging and sampling devices shall be gas-tight except when gauging or sampling is taking place.

(4) SECONDARY SEALS

(a) APPLICABILITY

Rule 340-22-160(4)(c) applies to all VOC liquid storage vessels equipped with external floating roofs, having capacities greater than 150,000 liters (39,000 gal).

(b) EXEMPTIONS

Rule 340-22-160(4)(c) does not apply to petroleum liquid storage vessels which:

(A) Are used to store waxy, heavy pour crude oil;

(B) Have capacities less than 1,600,000 liters (420,000 gal) and are used to store produced crude oil and condensate prior to lease custody transfer;

(C) Contain a VOC liquid with a true vapor pressure of less than 10.5 kPa (1.5 psia);

(D) Contain a VOC liquid with a true vapor pressure less than 27.6 kPa (4.0 psia); and,

(i) Are of welded construction; and,

(ii) Presently possess a metallic-type shoe seal, a liquid-mounted foam seal, a liquid-mounted liquid filled type seal, or other closure device of demonstrated equivalence approved by the Department; or,

(E) Are of welded construction, equipped with a metallic-type shoe primary seal and has a secondary seal from the top of the shoe seal to the tank wall (shoemounted secondary seal).

(c) After December 31, 1981, no owner of a VOC liquid storage vessel subject to 340-22-160 shall store VOC liquid in that vessel unless:

(A) The vessel has been fitted with:

(i) A continous secondary seal extending from the floating roof to the tank wall (rim-mounted secondary seal); or

(ii) A closure or other device which controls VOC emissions with an effectiveness equal to or greater than a seal required under part (A) (i) of this section as approved in writing by the Department.

(B) All seal closure devices meet the following requirements:

(i) There are no visible holes, tears, or other openings in the seal(s) or seal fabric:

(ii) The seal(s) are intact and uniformly in place around the circumference of the floating roof between the floating roof and the tank wall; and,

(iii) For vapor mounted seals, the accumulated area of gaps exceeding 0.32 cm (1/8 in.) in width between the secondary seal and the tank wall are determined by the method in 340-22-]60 (4)(d) and shall not exceed 21.2 cm^2 per meter of tank diameter (1.0 $in.^2$ per ft. of tank diameter).

(C) All openings in the external floating roof, except for automatic bleeder vents, rim space vents, and leg sleeves, are:

(i) equipped with covers, seals, or lids in the closed position except when the openings are in actual use; and,

(ii) equipped with projections into the tank which remain below the liquid surface at all times.

(D) Automatic bleeder vents are closed at all times except when the roof is floated off or landed on the roof leg supports;

(E) Rim vents are set to open only when the roof is being floated off the leg supports or at the manufacturers recommended setting; and,

(F) Emergency roof drains are provided with slotted membrane fabric covers or equivalent covers which cover at least 90 percent of the area of the opening.

(G) The owner or operator of a VOC liquid storage vessel with an external floating roof subject to 340-22-160(4)(c) shall:

(i) perform routine inspections once per year in order to ensure compliance with parts (A) through (F) of this section and the inspections shall include a visual inspection of the secondary seal gap;

(ii) measure the secondary seal gap annually in accordance with 340-22-160(4)(d) when the floating roof is equipped with a vapor-mounted primary seal; and,

(iii) maintain records of the throughput quantities and types of VOC liquids stored.

(H) The owner or operator of a VOC liquid storage vessel with an external floating roof not subject to this regulation, but containing a VOC liquid with a true vapor pressure greater than 7.00 kPa (1.0 psi), shall maintain records of the average monthly storage temperature, the type of liquid, throughput quantities, and the maximum true vapor pressure for all VOC liquids with a true vapor pressure greater than 7.0 kPa.

(I) The owner or operator of a VOC liquid storage vessel subject to this regulation, shall submit to the Department, as a minimum, annual reports summarizing the inspections.

(J) Copies of all records and reports under paragraphs (G) (H), and (I) of this section shall be retained by the owner or operator for a minimum of two years after the date on which the record was made or the report submitted.

(K) Copies of all records and reports under this section shall immediately be made available to the Department, upon verbal or written request, at any reasonable time.

(L) The Department may, upon written notice, require more frequent reports or modify the monitoring and recordkeeping requirements, when necessary to accomplish the purposes of this rule.

(d) SECONDARY SEAL COMPLIANCE DETERMINATION

(A) The owner or operator of any volatile organic compound source required to comply with 340-22-160(4) shall demonstrate compliance by the methods of this section or an alternative method approved by the Department.

(B) A person proposing to conduct a volatile organic compound emissions test shall notify the Department of the intent to test not less than 30 days before the proposed initiation of the tests so the Department may observe the test. The notification shall contain the information required by, and be in a format approved by the Department.

(C) Compliance with 340-22-160(4)(c)(B)(iii) shall be determined by:

(i) Physically measuring the length and width of all gaps around the entire circumference of the secondary seal in each place where a 0.32 cm (1/8 in.) uniform diameter probe passes freely (without forcing or binding against the seal) between the seal and tank wall; and,

(ii) Summing the area of the individual gaps.

SURFACE COATING IN MANUFACTURING

[Surface Coating rule is changed as follows:]

340-22-[~~140~~] 170

(1) After December 31, 1982, [~~the operation of~~] no person shall operate a coating line [shall not emit] which emits into the atmosphere volatile organic compounds greater than the [~~following~~] amounts in Table I per volume of coating excluding water as delivered to the coating applicators. The limitations shall be based on a 24-hour average during the months of April through October, and on a monthly average for the other months. Daily monitoring and monthly reporting of emissions are required after July 1, 1980, for sources emitting more than 1,000 tons per year of VOC, unless exempted as unnecessary by the Department in writing.

(2) EXCEPTIONS

(a) Rule 340-22-170 does not apply to airplanes painted out of doors in open air; automobile and truck refinishing; customized coating of automobiles and trucks, if production is less than 35 vehicles per day; marine vessels and vessel parts painted out in the open air; flat wood coating; wood furniture and wood cabinets; wooden doors, mouldings, and window frames; high temperature coatings (for service above 500° F); lumber marking coatings; potable water tank inside coatings; high performance inorganic zinc coatings, air dried, applied to fabricated steel.

(b) Rule 340-22-170 does not apply to:

(1) Sources whose emissions of volatile organic compounds are less than 6.8 kilograms (15 pounds) per day and less than 1.4 kilograms (3 pounds) per hour, or

(2) Sources used exclusively for chemical or physical analysis or determination of product quality and commercial acceptance (such as research facilities, pilot plant operations, and laboratories) unless;

(i) the operation of the source is an integral part of the production process; or,

(ii) the emissions from the source exceed 363 kilograms (800 pounds) in any calendar month.

(3) APPLICABILITY

Rule 340-22-170 applies to each coating line, which includes the application area(s), flashoff area(s), air and forced air drier(s), and oven(s) used in the surface coating of the metal parts and products in Table 1.

(4) STRINGENCY

If more than one emission limitation in 340-22-170 applies to a specific coating, then the least stringent emission limitation shall be applied.

Table 1

Process	Limitation grams/liter	lb/gal
Can Coating		
Sheet basecoat (exterior and interior) and over-varnish; two-piece can exterior (basecoat and over-varnish)	340	2.8
Two- and three-piece can interior body spray, two-piece can exterior end (spray or roll coat)	510	4.2
Three-piece can side-seam spray	660	5.5
End sealing compound	440	3.7
Coil Coating	310	2.6
Fabric Coating	350	2.9
Vinyl Coating	450	3.8
Paper Coating	350	2.9
or Inert Gas Process Paper Coating	567*	4.7*
Auto & Light Duty Truck Coating		
Prime	230	1.9
Topcoat	340	2.8
Repair	580	4.8
Metal Furniture Coating	360	3.0
Magnet Wire Coating	200	1.7
Large Appliance Coating	340	2.8
Miscellaneous Products and Metal Parts		
Clear Coatings	520	4.3
Air Dried	480	4.0
Force Air Dried	420	3.5
Extreme Performance Coatings	420	3.5
Other Coatings (i.e. powder, oven dried)	360	3.0

*Emission figured on a plant site basis, monthly average

[~~340-22-141~~] (5) COMPLIANCE DETERMINATION

Compliance with 340-22-[~~140~~] 170 shall be determined by testing in accordance with Method [~~18~~] 25 or Method 34 (material balance method) on file with the Department. These methods may be revised by the Department for improvement based upon experience and new data. However, no revision shall apply to a compliance test scheduled prior to the making of the revision, unless the owner concurs.

DEGREASERS

340-22-[~~145~~] 180

Cold cleaners, open top vapor degreasers, and conveyorized degreasers are exempt from the following rules if they use fluids which are not photochemically reactive. These fluids are:

(1) $C_2Cl_3F_3$ trichlorotrifluorethane, also known as Freon 113 or Freon TF

(2) CH_2Cl_2 methylene chloride

(3) 1, 1, 1-$C_2H_3Cl_3$ methyl chloroform, also known as 1-1-1 trichloroethane or Chlorothene VG.

COLD CLEANERS

(a) The owner or operator of all cold cleaners shall comply with the following equipment specifications after April 1, 1980:

(i) Be equipped with a cover that is readily opened and closed.
(ii) Be equipped with a drainrack that returns the drained solvent to the solvent bath.
(iii) Have a freeboard ratio of at least 0.5.
(iv) Have a visible fill line.

(b) An owner or operator of a cold cleaner shall be responsible for following the required operating parameters and work practices. The owner shall post and maintain in the work area of each cold cleaner a pictograph or instructions clearly explaining the following work practices:

(i) The solvent level shall not be above the fill line.
(ii) The spraying of parts to be cleaned shall be performed only within the confines of the cold cleaner.

(iii) The cover of the cold cleaner shall be closed when not in use or when parts are being soaked or cleaned by solvent agitation.

(iv) Solvent-cleaned parts shall be rotated to drain cavities or blind holes and then set to drain until dripping has stopped.

(v) Waste solvent shall be stored in covered containers and returned to the supplier or a disposal firm handling solvents for final disposal.

(c) The owner or operator shall maintain cold cleaners in good working condition and free of solvent leaks.

(d) If the solvent has a volatility greater than 2.0 kPa (0.3 psi) measured at 38°C (100°F), or if the solvent is agitated or heated, then the cover must be designed so that it can be easily operated with one hand.

(e) If the solvent has a volatility greater than 4.3 kPa (0.6 psi) measured at 38°C (100°F), then the drainage facility must be internal, so that parts are enclosed under the cover while draining. The drainage facility may be external for applications where an internal type cannot fit unto the cleaning system.

(f) If the solvent has a volatility greater than 4.3 kPa (0.6 psi) measured at 38°C (100°F), or if the solvent is heated above 50°C (120°F), then one of the following solvent vapor control systems must be used:

(A) The freeboard ratio must be equal to or greater than 0.70; or

(B) Water must be kept over the solvent, which must be insoluble in and heavier than water, or

(C) Other systems of equivalent control, such as a refrigerated chiller.

OPEN TOP VAPOR DEGREASERS

340-22-[~~146~~] 183

(a) The owner or operator of all open top vapor degreasers shall comply with the following equipment specifications after April 1, 1980:

(i) Be equipped with a cover that may be readily opened and closed. When a degreaser is equipped with a lip exhaust, the cover shall be located below the lip exhaust. The cover shall move horizontally or slowly so as not to agitate and spill the solvent vapor. The degreaser shall be equipped with at least the following three safety switches:

(a) Condenser-flow switch and thermostat--(shuts off sump heat if coolant is either not circulating or too warm).

(b) Spray safety switch--(shuts off spray pump or conveyor if the vapor level drops excessively, e.g., greater than 10 cm (4 in.)).

(c) Vapor level control thermostat--(shuts off sump heat when vapor level rises too high).

(ii) Have [~~one of~~] the following:

(a) [~~(c)~~] A closed design such that the cover opens only when the part enters or exits the degreaser, and either

(b) [~~(a)~~] A freeboard ratio equal to or greater than 0.75 , or

(c) [~~(b)~~] A freeboard chiller. refrigerated or cold water,

(iii) Post a permanent and conspicuous pictograph or instructions clearly explaining the following work practices:

(a) Do not degrease porous or absorbent materials such as cloth, leather, wood, or rope.
(b) The cover of the degreaser should be closed at all times except when processing workloads.
(c) When the cover is open the lip of the degreaser should not be exposed to steady drafts greater than 15.3 meters per minute (50 feet/min).
(d) Rack parts so as to facilitate solvent drainage from the parts.
(e) Workloads should not occupy more than one-half of the vapor-air interface area.
(f) When using a powered hoist, the vertical speed of parts in and out of the vapor zone should be less than 3.35 meters per minute (11 feet/min.)

[~~(g) The vapor level should not drop more than ten centimeters (4 inches) when the workload enters the vapor zone.~~]

(g) [~~(h)~~] Degrease the workload in the vapor zone until condensation ceases.

(h) [~~(i)~~] Spraying operations should be done within the vapor layer.

(i) [~~(j)~~] Hold parts in the degreaser until visually dry.

(j) [~~(k)~~] When equipped with a lip exhaust, the fan should be turned off when the cover is closed.

(k) [~~(l)~~] The condenser water shall be turned on before the sump heater when starting up a cold vapor degreaser. The sump heater shall be turned off and the solvent vapor layer allowed to collapse before closing the condenser water when shutting down a hot vapor degreaser.

(l) [~~(m)~~] Water shall not be visible in the solvent stream from the water separator.

(b) A routine inspection and maintenance program shall be implemented for the purpose of preventing and correcting solvent losses, as for example, from dripping drain taps, cracked gaskets, and malfunctioning equipment. Leaks must be repaired immediately.

(c) Sump drainage and transfer of hot or warm solvent shall be carried out using threaded or other leakproof couplings.

(d) Still and sump bottoms shall be kept in closed containers.

(e) Waste solvent shall be stored in covered containers and returned to the supplier or a disposal firm handling solvents for final disposal.

(f) Exhaust ventilation shall not exceed 20 m^3/min per m^2 (65 cfm per ft^2) of degreaser open area, unless necessary to meet OSHA requirements. Ventilation fans shall not be used near the degreaser opening.

CONVEYORIZED DEGREASERS

340-22-[~~147~~] 186

(a) The owner or operator of [~~all~~] conveyorized cold cleaners and conveyorized vapor degreasers shall comply with the following operating requirements after April 1, 1980:

(i) Exhaust ventilation should not exceed 20 cubic meters per minute of square meter (65 cfm per ft^2) of degreaser opening, unless necessary to meet OSHA requirements. Work place fans should not be used near the degreaser opening.

(ii) Post in the immediate work area a permanent and conspicuous pictograph or instructions clearly explaining the following work practices:

(a) Rack parts for best drainage.
(b) Maintain vertical speed of conveyored parts to less than 3.35 meters per minute (11 feet/min.)
(c) The condenser water shall be turned on before the sump heater when starting up a cold vapor degreaser. The sump heater shall be turned off and the solvent vapor layer allowed to collapse before closing the condenser water when shutting down a hot vapor degreaser.

(b) A routine inspection and maintenance program shall be implemented for the purpose of preventing and correcting solvent losses, as for example, from dripping drain taps, cracked gaskets, and malfunctioning equipment. Leaks must be repaired immediately.

(c) Sump drainage and transfer of hot or warm solvent shall be carried out using threaded or other leakproof couplings.

(d) Still and sump bottoms shall be kept in closed containers.

(e) Waste solvent shall be stored in covered containers and returned to the supplier or a disposal firm handling solvents for final disposal.

(f) All conveyorized cold cleaners and conveyorized vapor degreasers with air/vapor interfaces of 2.0 m^2 or greater shall have one of the following major control devices installed and operating after April 1, 1982:

(i) Carbon adsorption system, exhausting less than 25 ppm of solvent averaged over a complete adsorption cycle (based on exhaust ventilation of 15 m^2/min per m^2 of air/vapor area, when down-time covers are open), or

(ii) Refrigerated chiller with control effectiveness equal to or better than (i) above, or

(iii) A system with control effectiveness equal to or better than (i) above.

Asphaltic and Coal Tar Pitch Used for Roofing Coating

340-22-[~~150~~] 190

A person shall not operate or use equipment after April 1, 1980, for melting, heating, or holding asphalt or coal tar pitch for the on-site construction, installation, or repair of roofs unless the gas-entrained effluents from such equipment are contained by close fitting covers.

A person operating equipment subject to this rule shall maintain the temperature of the asphaltic or coal tar pitch below 285 degrees Centigrade (550 degrees Fahrenheit), or 17 degrees Centigrade (30 degrees Fahrenheit) below the flashpoint whichever is the lower temperature, as indicated by a continuous reading thermometer.

The provisions of this rule shall not apply to equipment having a capacity of 100 liters (26 gallons) or less; or to equipment having a capacity of 600 liters (159 gallons) or less, provided it is equipped with a tightly fitted lid or cover.

FLAT WOOD COATING

340-22-200

(1) This rule applies to all flat wood manufacturing and surface finishing facilities, that manufacture the following products:

(a) Printed interior panels made of hardwood plywood and thin particle board;
(b) Natural finish hardwood plywood panels; or,
(c) Hardboard paneling with Class II finishes.

(2) This rule does not apply to the manufacture of exterior siding, tileboard, particleboard used as a furniture component, or paper or plastic laminates on wood or wood-derived substrates.

(3) After December 31, 1982, no owner or operator of a flat wood manufacturing facility subject to this regulation shall emit volatile organic compounds from a coating application system in excess of:

(a) 2.9 kg per 100 square meters of coated finished product (6.0 lb/1,000 square feet) from printed interior panels, regardless of the number of coats applied;
(b) 5.8 kg per 100 square meters of coated finished product (12.0 lb/1,000 square feet) from natural finish hardwood plywood panels, regardless of the number of coats applied; and,
(c) 4.8 kg per 100 square meters of coated finished product (10.0 lb/1,000 square feet) from Class II finishes on hardboard panels, regardless of the number of coats applied.

(4) The emission limits 340-22-200(3) shall be achieved by:

(a) The application of low solvent content coating technology; or,
(b) An incineration system which oxidizes at least 90.0 percent of the nonmethane volatile organic compounds entering the incinerator (VOC measured as total combustible carbon) to carbon dioxide and water; or,
(c) An equivalent means of VOC removal. The equivalent means must be approved in writing by the Department.

(5) A capture system must be used in conjunction with the emission control systems in 340-22-200(4)(b) and (c). The design and operation of a capture system must be consistent with good engineering practice and shall be required to provide for an overall emission reduction sufficient to meet the emission limitations in 340-22-200(3).

COMPLIANCE DEMONSTRATION

(6) The owner or operator of a volatile organic compound source required to comply with this rule shall demonstrate compliance by the methods of 340-22-200(8), or an alternative method approved by the Department.

(7) A person proposing to conduct a volatile organic compound emissions test shall notify the Department of the intent to test not less than 30 days before the proposed initiation of the tests so the Department may observe the test.

(8) (a) Test procedures to determine compliance with 340-22-200(3) must be approved by the Department and be consistent with:

(A) EPA Guideline Series document, "Measurement of Volatile Organic Compounds," EPA-450/2-78-041; and,
(B) Appendix A of "Control of Volatile Organic Emissions from Existing Stationary Sources - Volume II: Surface Coating of Cans, Coils, Paper, Fabrics, Automobile, and Ligh-Duty Trucks," EPA-450/-77-008.

(b) The Department may accept, instead of the coating analysis required by 340-22-200(8)(a)(B), a certification by the coating manufacturer of the composition of the coating, if supported by actual batch formulation records.

(9) If add-on control equipment is used, continuous monitors of the following parameters shall be installed, periodically calibrated, and operated at all times that the associated control equipment is operating:

(a) exhaust gas temperature of all incinerators;
(b) temperature rise across a catalytic incinerator bed; and
(c) breakthrough of VOC on a carbon absorption unit.

ROTOGRAVURE AND FLEXOGRAPHIC PRINTING

340-22-210

(1) After July 1, 1982, no owner or operator of a packaging rotogravure, publication rotogravure or flexographic printing facility, emitting more than 90 mg/year (100 ton/year), employing ink containing solvent may operate, cause, allow or permit the operation of the press unless:

(a) The volatile fraction of ink, as it is applied to the substrate, contains 25.0 percent by volume or less of organic solvent and 75 percent by volume or more of water; or,

(b) The ink as it is applied to the substitute, less water, contains 60.0 percent by volume or more nonvolatile material; or,

(c) The owner or operator installs and operates:

(A) A carbon adsorption system which reduces the volatile organic emissions from the capture system by at least 90.0 percent by weight;

(B) An incineration system which oxidizes at least 90.0 percent of the nonmethane volatile organic compounds (VOC measured as total combustible carbon) to carbon dioxide and water; or,

(C) An alternative volatile organic compound emissions reduction system demonstrated to have at least a 90.0 percent reduction efficiency, measured across the control system, and has been approved by the Department.

(2) A capture system must be used in conjunction with the emission control systems in subsection (1)(c). The design and operation of a capture system must be consistent with good engineering practice, and shall be required to provide for an overall reduction in volatile organic compound emissions of at least:

(a) 75.0 percent where a publication rotogravure process is employed;

(b) 65.0 percent where a packaging rotogravure process is employed; or,

(c) 60.0 percent where a flexographic printing process is employed.

(3) COMPLIANCE DEMONSTRATION:

(a) Upon request of the Department, the owner or operator of a volatile organic compound source shall demonstrate compliance by the methods of this section or an alternative method approved by the Department. All tests shall be made by, or under the direction of, a person qualified by training and/or experience in the field of air pollution testing.

(b) A person proposing to conduct a volatile organic compound emissions test shall notify the Department of the intent to test not less than 30 days before the proposed initiation of the tests so the Department may observe the test. The notification shall contain the information required by, and be in a format approved by, the Department.

(c) Test procedures to determine compliance with 340-22-210 must be approved by the Department and consistent with:

(i) EPA Guideline Series document, "Measurement of Volatile Organic Compounds," EPA-450/2-78-041; and

(ii) Appendix A of "Control Volatile Organic Emissions from Existing Stationary Sources Volume II: Surface Coating of Cans, Coils, Paper, Fabrics, Automobiles, and Light-Duty Trucks," EPA-450/2-77-008.

(iii) The Department may accept, instead of ink-solvent analysis, a certification by the ink manufacturer of the composition of the ink solvent, if supported by actual batch formulation records.

(d) If add-on control equipment is used, continous monitors of the following parameters shall be installed, periodically calibrated, and operated at all times that the associated control equipment is operating:

(A) Exhaust gas temperature of all incinerators; and

(B) Breakthrough of VOC on a carbon adsorption unit.

PERCHLOROETHYLENE DRY CLEANING

340-22-220

(1) After January 1, 1982, the owner or operator of a perchloroethylene dry cleaning facility shall;

(a) Vent the entire dryer exhaust through a properly functioning carbon adsorption system or equally effective control device;
(b) Emit no more than 100 ppm of volatile organic compounds from the dryer control device before dilution;
(c) Immediately repair all components found to be leaking liquid volatile organic compounds.
(d) Cook or treat all diatomaceous earth filters so that the residue contains 25 kg or less of volatile organic compounds per 100 kg of wet waste material;
(e) Reduce the volatile organic compounds from all solvent stills to 60 kg or less per 100 kg of wet waste material;
(f) Drain all filtration cartridges, in the filter housing, for at least 24 hours before discarding the cartridges; and
(g) When possible, dry all drained cartridges without emitting volatile organic compounds to the atmosphere.

EXEMPTIONS

(2) The requirements of 340-22-220(1)(a) and (b) are not applicable to:

(a) coin-operated facilities,
(b) facilities where an adsorber cannot be accomodated because of inadequate space, or
(c) facilities with insufficient steam capacity to desorb adsorbers.

COMPLIANCE DEMONSTRATION

(3) Compliance to this rule shall be demonstrated as follows:

(a) Compliance with 340-22-220(1)(a),(f), and (g) shall be determined by means of a visual inspection.

(b) Compliance with 340-22-220(1)(c) shall be determined by means of a visual inspection of the following components:

(1) Hose connections, unions, couplings and valves;
(2) Machine door gaskets and seatings;
(3) Filter head gasket and seating;
(4) Pumps;
(5) Base tanks and storage containers;
(6) Water separators;
(7) Filter sludge recovery;
(8) Distillation unit;
(9) Diverter valves;
(10) Saturated lint from lint basket; and
(11) Cartridge filters.

(c) Compliance with 340-22-220-(1)(b) shall be determined by:

(1) A test consistent with EPA Guideline Series document, "Measurement of Volatile Organic Compounds," EPA-450/2-78-041; or
(2) The proper installation, operation, and maintenance of equipment which has been demonstrated to be adequate to meet the emission limits of 100 ppmv.

(d) Compliance with 340-22-220(1)(d) and (e) shall be determined by means of the procedure in the "Standard Test Method for Gasoline Diluent in Used Gasoline Engine Oils By Distillation," ANSI/ASTM D 322.

VICTOR ATIYEH
GOVERNOR

Environmental Quality Commission

Mailing Address: BOX 1760, PORTLAND, OR 97207
522 SOUTHWEST 5th AVENUE, PORTLAND, OR 97204 PHONE (503) 229-5696

MEMORANDUM

To: Environmental Quality Commission

From: Director

Subject: Agenda Item No. F, April 18, 1980, EQC Meeting

Motor Vehicle Emission Testing Rules--Request for Authorization for Public Hearing for Annual Rules Review and Update to Include Standards for 1980 Model Year Motor Vehicles OAR 340-24-300 through 24-350

Background

At the Environmental Quality Commission meeting of June 29, 1979, amendments to OAR 340-24-300 through 24-350 were approved. These amendments effectively updated the inspection criteria to include the 1979 model year motor vehicles. This was part of the annual review and update required to keep the inspection programs rules current.

Review of the 1980 model year motor vehicles is complete and it is time to update the inspection criteria to include these vehicles. The following areas in the rule are being proposed, in addition to the standards update, for revision:

1) A change in the definition of noncomplying import vehicle.

2) A change in the light duty vehicle test criteria section of the rules (24-320) to more clearly specify the allowable criteria for modifications to vehicle engines and emission control systems. These changes identify the current procedure for determining what aftermarket products do not degrade emission control performance.

Authority for Commission action is included in ORS 468.370, the statutory authorization for the Commission to adopt rules in this area.

Alternatives and Evaluation

The major and most important rule modification proposed is the update of the emission standards to include 1980 model year motor vehicles. The following is some background information on the standards for the inspection program. All new motor vehicle models offered for sale in the United States must be certified as complying with federal emission

criteria. The method for measuring the compliance with the federal criteria is through the certification procedure. The exhaust emission test is the Federal Test Procedure(FTP)--a 22-minute driving cycle test on a chassis dynamometer. During the FTP the exhaust from the motor vehicle is captured and the exhaust gas is analysed. A determination, expressed in grams of pollutant per vehicle mile driven, is made and is compared against the federal emission standards.

The Department of Environmental Quality's inspection test does not use this loaded mode procedure in its short cycle test, but rather evaluates the exhaust of the various automobiles on a volumetric basis. The results of the short inspection test which the Department conducts have been successfully used to predict passage or failure of the FTP, provided all of the pollution control equipment on the vehicle is operating and the rest of the engine operating parameters are reasonably close to the manufacturer's specifications. This correlation is so significant that the values selected by the Department for catalyst controlled automobiles have been proposed by the EPA as failure limits or cut points, for the Clean Air Act, Section 207(b), emission warrentee protection clause. This gives the vehicle owner a two-year or 24,000 mile emission performance warrentee, provided the owner has maintained the vehicle to the manufactures specifications.

Three major items are considered in formulating the standards for the state's inspection test. These three items are:

1. The design used by the individual manufacturer in building the motor vehicle to comply with the federal criteria including the manufacture's tuning procedures. These procedures are specified in the maintenance manuals and summarized on emission labels located in the engine compartments.

2. The emission results obtained from prototype vehicles testing in the federal certification process and short cycle test results obtained at the state inspections centers.

3. An engineering evaluation and judgment based upon reasonable repeatability of emission readings from a given vehicle design.

The proposed standard changes are primarily limited to updates from the 1979 model year. Though federal standards did change in 1980, the catalyst technology in use has been refined allowing driveability and reliability improvements. Volkswagen did reinstitute catalyst technology for all of its motor vehicles, except for pickup trucks, so those standards have been modified appropriately.

The definition of noncomplying import vehicle is proposed to be changed. The proposed change will make our inspection program criteria compatible with U.S. Customs regulations. U.S. Customs allows vehicles that do not meet U.S. standards, to enter the country, only if they are owned by foreign nationals and will then be exported within one-year's time. Occasionally, this type of vehicle is presented at the inspection stations. The proposed changes will provide a procedure and classification for our inspection personnel to test the vehicle.

The remaining proposed changes occur in Rule 340-24-320, the test criteria section. These changes include the addition of the oxygen sensor to the list of pollution control equipment. The oxygen sensor is a new part of the pollution control technology. It senses the oxygen in the exhaust and feeds this information back to the engine and fuel metering systems to adjust the engine performance for optimum emissions performance. It is a necessary component in the three-way catalyst emission control systems.

It is proposed to modify the aftermarket products section (24-320(4)) to allow for three avenues of aftermarket product evaluation. This is not really a change, but rather puts in the rule existing practice. The State of California Air Resources Board has an existing program of aftermarket product evaluation. Under their Vehicle Code Section 27156, the CARB can grant exemptions for aftermarket products when, after testing and evaluation, it is determined that emission performance is not degraded by use of the product. Also proposed to be included, is EPA's aftermarket Parts Self-Certification Program. This program is currently in the final stage of rule making. Additionally, aftermarket products determined by the Department not to adversley affect emission control after the evaluation of proper testing data, would also be included.

It is proposed to modify the tampering criteria 24-320(3) to conform with federal regulations 40 CFR 85.1701-1709. This particular regulation allows modifications to emission control equipment configurations for the purposes of testing, research, demonstrations, and training. It provides the process to grant exemption to manufacturers and individuals.

Paragraph 24-320(6) is proposed to be modified. Though this section was before the Commission a short time ago, the wording remained confusing. The proposed change maintains, hopefully more clearly, the intent that was presented to the Commission in January.

Tentative public hearing dates have been set. Several public hearing times were chosen to provide greater opportunity for the public to comment on the proposed rule revisions.

Summation

The proposed rule revisions outlined would have the effect of updating the inspection program standards to include the 1980 model year motor vehicles. The criteria applied in selecting these inspection program standards are the same criteria which have been applied consistently through the start of the inspection program.

The other modifications proposed deal with the definition of a noncomplying imported vehicle, and procedural criteria governing the inspection test.

Director's Recommendation

Based upon the Summation, it is recommended that the Commission authorize a public hearing to take testimony on the proposed rule modifications OAR 340-24-300 through 24-350.

Bill

WILLIAM H. YOUNG

Attachments: State of Need for Rulemaking and Fiscal Impact
Hearings Notice
Proposed Rule Amendments

William P. Jasper:p
229-5081
April 3, 1980
VP7256

BEFORE THE ENVIRONMENTAL QUALITY COMMISSION

OF THE STATE OF OREGON

IN THE MATTER OF The Adoption of Amendments to the Motor Vehicle Emission Testing Rules, OAR Chapter 340 Section 24-300 to 24-350	)))))	STATEMENT OF NEED FOR RULEMAKING

I

Pursuant to ORS 183.335(2), the statement provides information on the intended action to amend a rule. The Environmental Quality Commission intends to adopt the motor vehicle inspection program rule amendments, OAR Chapter 340 Section 24-300 to 24-350.

A. Legal Authority. ORS 468.370 and ORS 183.341.

B. Need For Rule. The proposed amendments are needed to update the inspection program standards and criteria to include 1980 model year motor vehicles.

C. Documents Relied Upon. The existing rules, the automobile and motor vehicle manufacturers, shop manuals, service manuals. 40 CFR Part 85 (FRL-1401-4) Emission Control System Performance Warranty Regulations--Short test Establishment. 40 CFR Part 85 (FRL-1416-8) Exclusion and Exemption of Motor Vehicles and Motor Vehicle Engines. 40 CFR Part 85 (FRL-1260-7) Voluntary After Market Part Self Certification Program. Califoria VC 27156 Exemption List.

D. Fiscal Impact Statement. Estimated fiscal impacts are that some motorists will experience savings, while other motorists will experience increased costs in maintaining their motor vehicles.

VICTOR ATIYEH
GOVERNOR

Environmental Quality Commission

Mailing Address: BOX 1760, PORTLAND, OR 97207
522 SOUTHWEST 5th AVENUE, PORTLAND, OR 97204 PHONE (503) 229-5696

Prepared: April 3, 1980
Hearing Date: May 19, 20, and 21, 1980

NOTICE OF PUBLIC HEARING

A CHANCE TO BE HEARD ABOUT:

Annual rule revision and standards update to the motor vehicle inspection program operating in the Portland-Metropolitan area.

The Department of Environmental Quality is proposing modifications to the current inspection programs rules. The proposed modifications to the regulations include updating the standards to include 1980 model year motor vehicles and changes and clarifications to emission control test criteria.

WHAT IS THE DEQ PROPOSING?

Interested parties should request a copy of the complete proposed rule package. A major aspect of the proposed modifications are:

** The updating of all emission standards to include 1980 model year motor vehicles.

*** A change in the definition of noncomplying import vehicle.

*** A change in the light duty vehicle test criteria section of the rules (24-320) to more clearly specify the allowable criteria for modifications to vehicle engine and emission control systems. These changes identify the current procedure for determining what aftermarket products do not degrade emission control performance.

WHO IS AFFECTED BY THIS PROPOSAL:

Motor vehicle owners and operators and people engaged in the business of repairing motor vehicles in the Portland-Metropolitan area will be affected by the proposal.

HOW TO PROVIDE YOUR INFORMATION:

Written comments should be sent to the Department of Environmental Quality, Vehicle Inspection Program, Box 1760, Portland, Oregon 97207, and should be received by 5:00 p.m., May 21, 1980.

Oral and written comments may be offered at the following public hearing(s):

City	Time	Date	Location
Beaverton	7 p.m.	May 19, 1980	City of Beaverton Operations Center Meeting Room 9600 Southwest Allen Boulevard Beaverton, OR
Milwaukie	7 p.m.	May 20, 1980	Far West Federal Community Rm. 1915 Southeast Harrison Milwaukie, OR
Portland	9 a.m.	May 21, 1980	Oregon Department of Fish and Wildlife Commission Room 506 Southwest Mill Street Portland, OR
Gresham	7 p.m.	May 21, 1980	City of Gresham Council Chambers 1333 Northwest Eastman Avenue Gresham, OR

WHERE TO OBTAIN ADDITIONAL INFORMATION:

Copies of the proposed rules may be obtained from:

Mr. William Jasper
DEQ Vehicle Inspection Program
522 Southwest Fifth Avenue
Box 1760
Portland, Oregon 97207
Telephone: (503) 229-6235

LEGAL REFERENCES FOR THIS PROPOSAL:

This proposal amends OAR 340-24-300 through 24-350. This rule is proposed under authority of ORS 468.370.

This proposal does not affect land use as defined in the Department's coordination program with the Department of Land Conservation and Development.

FURTHER PROCEEDINGS

After the public hearing the Environmental Quality Commission may adopt the rule identical to the proposed rules, adopt a modified rule on the same subject matter, or decline to act. The adopted regulations may be submitted to the Environmental Protection Agency as part of the State Clean Air Act Implementation Plan. The Commission's deliberation should come in June as part of the agenda of a regularly scheduled Commission meeting.

A Statement of Need and Fiscal Impact Statement are attached to this notice.

VP7256.A

Appendix

Proposed Revision to Oregon Administrative Rules, Chapter 340-

Motor Vehicle Emission Control Inspection Test, Criteria, Methods, and Standards.

Definitions

OAR 340-24-305 As used in these rules unless otherwise required by context:

(1) "Carbon dioxide" means a compound consisting of the chemical formula (CO_2).

(2) "Carbon monoxide" means a compound consisting of the chemical formula (CO).

(3) "Certificate of Compliance" means a certification issued by a vehicle emission inspector that the vehicle identified on the certificate is equipped with the required functioning motor vehicle pollution control systems and otherwise complies with the emission control criteria, standards, and rules of the Commission.

(4) "Certificate of inspection" means a certification issued by a vehicle emission inspector and affixed to a vehicle by the inspector to identify the vehicle as being equipped with the required functioning motor vehicle pollution control systems and as otherwise complying with the emission control criteria, standards, and rules of the Commission.

OAR243.05(f)

(5) "Commission" means the Environmental Quality Commission.

(6) "Crankcase emissions" means substances emitted directly to the atmosphere from any opening leading to the crankcase of a motor vehicle engine.

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

(8) "Diesel motor vehicle" means a motor vehicle powered by a compression-ignition internal combustion engine.

(9) "Director" means the director of the Department.

(10) "Electric vehicle" means a motor vehicle which uses a propulsive unit powered exclusively by electricity.

(11) "Exhaust emissions" means substances emitted into the atmosphere from any opening downstream from the exhaust ports of a motor vehicle engine.

(12) "Factory-installed motor vehicle pollution control system" means a motor vehicle pollution control system installed by the vehicle or engine manufacturer to comply with [federal] United States motor vehicle emission control laws and regulations.

(13) "Gas analytical system" means a device which senses the amount of contaminants in the exhaust emissions of a motor vehicle, and which has been issued a license by the Department pursuant to rule 340-24-350 of these regulations and ORS 468.390.

(14) "Gaseous fuel" means, but is not limited to, liquefied petroleum gases and natural gases in liquefied or gaseous forms.

(15) "Gasoline motor vehicle" means a motor vehicle powered by a spark-ignition internal" combustion engine.

(16) "Heavy duty motor vehicle" means a motor vehicle having a combined manufacturer vehicle and maximum load rating to be carried thereon of more than 3855 kilograms (8500 pounds).

(17) "Hydrocarbon gases" means a class of chemical compounds consisting of hydrogen and carbon.

(18) "Idle speed" means the unloaded engine speed when accelerator pedal is fully released.

(19) "In-use motor vehicle" means any motor vehicle which is not a new motor vehicle.

(20) "Light duty motor vehicle" means a motor vehicle having a combined manufacturer vehicle and maximum load rating to be carried thereon of not more than 3855 kilograms (8500 pounds).

(21) "Model year" means the annual production period of new motor vehicles or new motor vehicle engines designated by the calendar year in which such period ends. If the manufacturer does not designate a production period, the year with respect to such vehicles or engines shall mean the 12 month period beginning January of the year in which production thereof begins.

(22) "Motorcycle" means any motor vehicle having a seat or saddle for the use of the rider and designed to travel on not more than three wheels in contact with the ground and having a mass of 680 kilograms (1500 pounds) or less with manufacturer recommended fluids and nominal fuel capacity included.

(23) "Motor vehicle" means any self-propelled vehicle used for transporting persons or commodities on public roads.

(24) "Motor vehicle fleet operation" means ownership by any person of 100 or more Oregon registered, in-use, motor vehicles, excluding those vehicles held primarily for the purposes of resale.

(25) "Motor vehicle pollution control system" means equipment designed for installation on a motor vehicle for the purpose of reducing the pollutants emitted from the vehicle, or a system or engine adjustment or modification which causes a reduction of pollutants emitted from the vehicle, or a system or device which inhibits the introduction of fuels which can adversely effect the overall motor vehicle pollution control system.

(26) "New motor vehicle" means a motor vehicle whose equitable or legal title has never been transferred to a person who in good faith purchases the motor vehicle for purposes other than resale.

(27) "Non-complying imported vehicle" means a motor vehicle of model years 1968 through 1971 which was originally sold new outside of the United States and was imported into the United States as an in-use vehicle prior to February 1, 1972[.], or a motor vehicle owned by a foreign national which has entered the United States in compliance with federal regulations.

(28) "Owner" means the person having all the incidents of ownership in a vehicle or where the incidents of ownership are in different persons, the person, other than a security interest holder or lessor, entitled to the possession of a vehicle under a security agreement, or a lease for a term of 10 or more successive days.

(29) "Person" includes individuals, corporations, associations, firms, partnerships, joint stock companies, public and municipal corporations, political subdivisions, the state and any agencies thereof, and the federal government and any agencies thereof.

(30) "PPM" means parts per million by volume.

(31) "Public roads" means any street, alley, road, highway, freeway, thoroughfare, or section thereof in this state used by the public or dedicated or appropriated to public use.

(32) "RPM" means engine crankshaft revolutions per minute.

(33) "Two-stroke cycle engine" means an engine in which combustion occurs, within any given cylinder, once each crankshaft revolution.

(34) "Vehicle emission inspector" means any person possessing a current and valid license by the Department pursuant to rule 340-25-340 of these regulations and ORS 468.390.

Light Duty Motor Vehicle Emission Control Test Criteria

OAR 340-24-320 (1) No vehicle emission control test shall be considered valid if the vehicle exhaust system leaks in such a manner as to dilute the exhaust gas being sampled by the gas analytical system. For the purpose of emission control tests conducted at state facilities, except for diesel vehicles, tests will not be considered valid if the exhaust has is diluted to such an extent that the sum of the carbon monoxide and carbon dioxide concentrations recorded for the idle speed reading from an exhaust outlet is 8% or less, and on 1975 and newer vehicles with air injection systems 7% or less.

(2) No vehicle emission control test shall be considered valid if the engine idle speed either exceeds the manufacturer's idle speed specifications by over 200 RPM on 1968 and newer model vehicles, or exceeds 1,250 RPM for any pre-1968 model vehicle.

(3) No vehicle emission control test for a 1970 or newer model vehicle shall be considered valid if any element of the following factory-installed motor vehicle pollution control systems have been disconnected, plugged, or otherwise made inoperative in violation of ORS 483.825(1), except as noted in section (5) or as provided for by 40 CFR 85.1701-1709. Motor vehicle pollution control systems include, but are not necessarily limited to :

(a) Positive crankcase ventilation (PVC) system.

(b) Exhaust modifier system:

(A) Air injection reactor system;

(B) Thermal reactor system;

(C) Catalytic converter system - (1975 and newer model vehicles only).

(c) Exhaust gas recirculation (EGR) systems - (1973 and newer model vehicles only).

(d) Evaporative control system.

(e) Spark timing system:

(A) Vacuum advance system;

(B) Vacuum retard system.

(f) Special emission control devices. Examples:

(A) Orifice spark advance control (OSAC);

(B) Speed control switch (SCS).

(C) Thermostatic air cleaner (TAC).

(D) Transmission controlled spark (PCS).

(E) Throttle solenoid control (TSC).

(F) Fuel filler inlet restrictors.

(G) Oxygen sensor.

(4) No vehicle emission control test for a 1970 or newer model vehicle shall be considered valid if any element of the factory installed motor vehicle pollution control system has been modified or altered in such a manner so as to decrease its efficiency or effectiveness in the control of air pollution in violation of ORS 483.825(2), except as noted in section (5). For the purposes of this section, the following apply:

(a) The use of a non-original equipment aftermarket part (including a rebuilt part) as a replacement part is not considered to be a violation of ORS 483.825(2), if a reasonable basis exists for knowing that such use will not adversely effect

emission control efficiency. The Department will maintain a listing of those parts which have been determined to adversely effect emission control efficiency.

(b) The use of a non-original equipment aftermarket part or system as an add-on, auxiliary, augmenting, or secondary part or system, is not considered to be a violation of ORS 483.825(2), if such a part or system [is listed on the exemption list maintained by the Department.] is on the exemption list of "Modifications to Motor Vehicle Emission Control System Permitted Under California Vehicle Code Section 27]56. Granted by the Air Resources Board," or is on the list maintained by the U.S. Environmental Protection Agency of "Certified to EPA Standards," or has been determined after review of testing data by the Department that there is no decrease in the efficiency or effectiveness in the control of air pollution.

(c) Adjustments or alterations of a particular part or system parameter, is done for purposes of maintenance or repair according to the vehicle or engine manufacturer's instructions, are not considered violations of ORS 483.825(2)!

(5) A 1970 and newer model motor vehicle which has been converted to operate on gaseous fuels shall not be considered in violation of ORS 483.825(1) or (2) when elements of the factory-installed motor vehicle air pollution control system are disconnected for the purpose of conversion to gaseous fuel as authorized by ORS 483.825(3).

(6) The following applies:

(a) to 1979 and earlier motor vehicles. When a motor vehicle is equipped with other than the original engine and the factory installed vehicle pollution control systems, it shall be classified by the model year and manufacture make of the non-original engine and its factory installed motor vehicle pollution control systems, except that any when the non-original engine is older than the motor vehicle requirement for evaporative control system and fuel filler inlet restrictor and catalytic convertor shall be based on the model year of the vehicle chassis.

(b) to 1980 and newer motor vehicles. These motor vehicles shall be classified by the model year and make of the vehicle as designated by the original chassis, engine, and its factory installed motor vehicle pollution control systems.

OAR 340-24-330 LIGHT DUTY MOTOR VEHICLE EMISSION CONTROL IDLE EMISSION STANDARDS

(1) Carbon monoxide idle emission values not to be exceeded:

	%	Enforcement Tolerance Through June, [1980] 1981
ALFA ROMEO		
1978 [and 1979] through 1980	0.5	0.5
1975 through 1977	1.5	1.0
1971 through 1974	3.0	1.0
1968 through 1970	4.0	1.5
pre-1968	6.0	0.5
AMERICAN MOTORS CORPORATION		
1975 through [1979] 1978 Noncatalyst	1.5	0.5
1975 through [1979] 1980 Catalyst Equipped	0.5	0.5
1972 through 1974	2.0	1.0
1970 through 1971	3.5	1.0
1968 through 1969	5.0	0.5
pre-1968	6.0	0.5
Above 6000 GVWR 1974 through 1978	2.0	1.0
ARROW, Plymouth - see COLT, Dodge		
AUDI		
1975 through [1979] 1980 Catalyst Equipped	0.5	0.5
1975 through 1979 Noncatalyst	1.5	0.5
1971 through 1974	2.5	1.0
1968 through 1970	4.0	1.0
pre-1968 6.0 0.5		
AUSTIN - see BRITISH LEYLAND		

	%	Enforcement Tolerance Through June, [1980] 1981
BMW		
1979 through 1980 Catalyst Equipped	0.5	0.5
1975 through 1979	1.5	0.5
1974 6 cyl.	2.5	1.0
1974 4 cyl.	2.0	1.0
1971 through 1973	3.0	1.0
1968 through 1970	4.0	1.0
pre-1968	6.0	0.5
BRITISH LEYLAND		
Austin, Austin Healey, Morris, America, and Marina		
1975	2.0	0.5
1973 through 1974	2.5	1.0
1971 through 1972	4.0	1.0
1968 through 1970	5.0	1.0
pre-1968	6.5	0.5
Jaguar		
1975 through [1979] 1980	0.5	0.5
1972 through 1974	3.0	1.0
1968 through 1971	4.0	1.0
pre-1968	6.0	0.5
MG		
1976 through [1979] 1980 MG	0.5	0.5
1975 MG, MG Midget and 1976 MG Midget	2.0	0.5
1973 through 1974 MGB, MGBGT, MGC	3.0	1.0
1971 through 1974 Midget	3.0	1.0
1972 MGB, MGC	4.0	1.0
1968 through 1971, except 1971 Midget	5.0	1.0
pre-1968	6.5	0.5
Rover		
1971 through 1974	4.0	1.0
1968 through 1970	5.0	0.5
pre-1968	6.0	0.5

	%	Enforcement Tolerance Through June, [1980] 1981
Triumph		
1978 and [1979] 1980	0.5	0.5
1975 through 1977	2.0	0.5
1971 through 1974	3.5	1.0
1968 through 1970	4.0	1.0
pre-1968	6.5	0.5
BUICK - see GENERAL MOTORS		
CADILLAC - see GENERAL MOTORS		
CAPRI - see FORD MOTOR COMPANY		
CHECKER		
1975 through [1979] 1980 Catalyst Equipped	0.5	0.5
1973 through 1974	1.0	1.0
1970 through 1972	2.5	1.0
1968 through 1969	3.5	1.0
pre-1968	6.0	0.5
CHEVROLET - see GENERAL MOTORS		
CHEVROLET L.U.V. - see L.U.V., Chevrolet		
CHRYSLER - see CHRYSLER CORPORATION		
CHRYSLER CORPORATION (Plymouth, Dodge, Chrysler)		
1975 through [1979] 1978 Noncatalyst	1.0	0.5
1975 through [1979] 1980 Catalyst Equipped	0.5	0.5
1973 through 1974	1.0	1.5
1970 through 1972	1.5	1.5
1968 through 1969	2.0	2.5
pre-1968	6.0	0.5
Diesel Engines (all years)	1.0	0.5
Above 6000 GVWR 1968 through 1971	4.0	1.0
Above 6000 GWR 1972 through 1978	2.0	1.0

	%	Enforcement Tolerance Through June, [1980] 1981
CITROEN		
1971 through 1974	3.0	1.0
1968 through 1970	4.0	1.0
pre-1968	6.0	0.5
COLT, Dodge		
1978 and [1979] through 1980	0.5	0.5
1975 through 1977	3.0	0.5
1971 through 1974	5.0	1.0
pre-1971	6.0	0.5
COURIER, Ford		
1975 through [1979] 1980 Catalyst Equipped	0.5	0.5
1975 through 1979 Noncatalyst	1.5	0.5
1973 through 1974	2.0	1.0
pre-1973	4.0	1.0
CRICKET, Plymouth		
1973 through 1974 (twin carb. only)	3.0	1.0
1972 (twin carb. only)	4.5	1.0
pre-1972 (and 1972 through 1973 single carb. only)	7.5	0.5
DATSUN		
1975 through [1979] 1980 Catalyst Equipped	0.5	0.5
1975 through [1979] 1980 Noncatalyst	2.0	0.5
1968 through 1974	2.5	1.0
pre-1968	6.0	0.5

DE TOMASO - see FORD MOTOR COMPANY

DODGE - see CHRYSLER CORPORATION

DODGE COLT - see COLT, Dodge

	%	Enforcement Tolerance Through June, [1980] 1981
FERRARI		
1978 [and 1979] through 1980	0.5	0.5
1975 through 1977	2.0	0.5
1971 through 1974	2.5	1.5
1968 through 1970	4.0	1.5
pre-1968	6.0	0.5
FIAT		
1975 through [1979] 1980 Noncatalyst	1.5	0.5
1975 through [1979] 1980 Catalyst Equipped	0.5	0.5
1974	2.5	1.0
1972 through 1973 124 Spec. sedan and wgn.	4.0	1.0
1972 through 1973 124 sport coupe and spider	3.0	1.0
1972 through 1973 850	3.0	1.0
1971 850 sport coupe and spider	3.0	1.0
1971 850 sedan	6.0	0.5
1968 through 1970, except 850	5.0	0.5
1968 through 1970 850	6.0	0.5
pre-1968	6.0	0.5
FIESTA - see FORD MOTOR COMPANY		
FORD - see FORD MOTOR COMPANY		
FORD MOTOR COMPANY (Ford, Lincoln, Mercury, Capri, except Courier)		
1975 through [1979] 1978 Noncatalyst	1.0	0.5
1975 through [1979] 1980 Catalyst Equipped	0.5	0.5
1974 except 4 cyl.	1.0	1.0
1973 except 4 cyl.	1.0	1.5
1972 except 4 cyl.	1.0	2.0
1972 through 1974 4 cyl., except 1971-1973 Capri	2.0	1.0
1971 through 1973 Capri only	2.5	1.0
1970 through 1971	2.0	1.0
1968 through 1969	3.5	1.0
pre-1968	6.0	0.5
Diesel Engines (all years)	1.0	0.5

	%	Enforcement Tolerance Through June, [1980] 1981
FORD MOTOR COMPANY - continued		
Above 6000 GVWR 1968 through 1971	4.0	1.0
Above 6000 GVWR 1972 through 1973	3.0	1.0
Above 6000 GVWR 1974 through 1978	2.0	1.0
GENERAL MOTORS (Buick, Cadillac, Chevrolet, GMC, Oldsmobile, Pontiac)		
1975 through [1979] 1978 Noncatalyst	1.0	0.5
1975 through [1979] 1980 Catalyst Equipped	0.5	0.5
1973 through 1974	1.0	1.0
1971 through 1972, except 1971 4 cyl.	1.5	1.0
1970, except 4 cyl.	1.5	1.5
1970 through 1971 4 cyl.	2.5	1.0
1968 through 1969	3.5	1.0
pre-1968	6.0	0.5
Diesel Engines (all years)	1.0	0.5
Above 6000 GVWR 1968 through 1971	4.0	1.0
Above 6000 GVWR 1972 through 1973	3.0	1.0
Above 6000 GVWR 1974 through 1978	2.0	1.0
GMC - see GENERAL MOTORS		
HONDA AUTOMOBILE		
1980 Catalyst	0.5	0.5
1980 Noncatalyst	1.0	0.5
1975 through 1979 CVCC	1.0	0.5
1975 through 1979 except CVCC engine	1.5	0.5
1973 through 1974	3.0	1.0
pre-1973	5.0	1.0
INTERNATIONAL HARVESTER		
1979 and 1980 below 8500 GVWR	0.5	0.5
1975 through 1978	2.5	0.5
1972 through 1974	3.0	1.0
1970 through 1971	4.0	1.0
1968 through 1969	5.0	1.0
pre-1968	6.0	0.5
Diesel Engines (all years)	1.0	0.5

	%	Enforcement Tolerance Through June, [1980] 1981
JAGUAR - see BRITISH LEYLAND		
JEEP - see AMERICAN MOTORS		
JENSEN-HEALEY		
1973 and 1974	4.5	1.0
JENSEN INTERCEPTER & CONVERTIBLE - see CHRYSLER CORPORATION		
LAND ROVER - see BRITISH LEYLAND, Rover		
LINCOLN - see FORD MOTOR COMPANY		
L.U.V., Chevrolet		
1980		
1974 through 1979	1.5	1.0
pre-1974	3.0	1.0
MAZDA		
1978 [and 1979] through 1980 Catalyst Equipped	0.5	0.5
1975 through [1979] 1980 Noncatalyst	1.5	0.5
1968 through 1974 Piston Engines	4.0	1.0
1974 Rotary Engines	2.0	0.5
1970 through 1973 Rotary Engines	3.0	0.5
MERCURY - see FORD MOTOR COMPANY		
MERCEDES-BENZ		
1975 through 1977 Noncatalyst 4 cyl.	1.0	0.5
1975 through [1979] 1980 all other	0.5	0.5
1973 through 1974	2.0	1.0
1972	4.0	1.0
1968 through 1971	5.0	1.0
pre-1968	6.0	0.5
Diesel Engines (all years)	1.0	0.5
MG - see BRITISH LEYLAND		

	%	Enforcement Tolerance Through June, [1980] 1981
OLDSMOBILE - see GENERAL MOTORS		
OPEL		
1975 through 1979 Catalyst Equipped	0.5	0.5
1975 through 1979 Noncatalyst	1.5	0.5
1973 through 1974	2.5	1.0
1970 through 1972	3.0	1.0
1968 through 1969	3.0	1.0
pre-1968	6.0	0.5
PANTERA - see FORD MOTOR COMPANY		
PEUGEOT		
1978 [and 1979] through 1980	0.5	0.5
1975 through 1977	1.5	0.5
1971 through 1974	3.0	1.0
1968 through 1970	4.0	1.0
pre-1968	6.0	0.5
Diesel Engines (all years)	1.0	0.5
PLYMOUTH - see CHRYSLER CORPORATION		
PLYMOUTH CRICKET - see CRICKET, Plymouth		
PONTIAC - see GENERAL MOTORS		
PORSCHE		
1978 [and 1979] through 1980 Catalyst Equipped	0.5	0.5
1975 through [1979] 1980 Noncatalyst	2.5	0.5
1972 through 1974	3.0	1.0
1974 Fuel Injection 1.8 liter (914)	5.0	1.0
1968 through 1971	5.0	1.0
pre-1968	6.5	0.5

	%	Enforcement Tolerance Through June, [1980] 1981
RENAULT		
1977 through [1979] 1980 Catalyst Equipped	0.5	0.5
1977 through [1979] 1980 Noncatalyst	1.5	0.5
1976 Carbureted	1.5	0.5
1975 and 1976 Fuel Injection	1.5	0.5
1975 Carbureted	0.5	0.5
1971 through 1974	3.0	1.0
1968 through 1970	5.0	1.0
pre-1968	6.0	0.5
ROLLS-ROYCE and BENTLEY		
1975 through [1979] 1980	0.5	0.5
1971 through 1974	3.0	1.0
1968 through 1970	4.0	1.0
pre-1968	6.0	0.5
ROVER - see BRITISH LEYLAND		
SAAB		
1978 [and 1979] through 1980 Catalyst	0.5	0.5
1975 through 1979 Noncatalyst	1.5	0.5
1968 through 1974, except 1972 99 1.85 liter	3.0	1.0
1972 99 1.85 liter	4.0	1.0
pre-1968 (two-stroke cycle)	3.0	3.5
SAPPORO, Plymouth - see COLT, Dodge		
SUBARU		
1975 through [1979] 1980	1.5	0.5
1972 through 1974	3.0	1.0
1968 through 1971, except 360's	4.0	1.0
pre-1968 and all 360's	6.0	0.5

	%	Enforcement Tolerance Through June, [1980] 1981
TOYOTA		
1975 through [1979] 1980 Catalyst Equipped	0.5	0.5
1975 through 1979 4 cyl. Noncatalyst	2.0	0.5
1975 through 1978 6 cyl.	1.0	0.5
1968 through 1974 6 cyl.	3.0	1.0
1968 through 1974 4 cyl.	4.0	1.0
pre-1968	6.0	0.5
TRIUMPH - see BRITISH LEYLAND		
VOLKSWAGEN		
1979 through 1980 all others	0.5	0.5
1977 through 1979 Rabbit and Scirocco and Dasher and 1980 Pickup Truck	2.0	0.5
1976 Rabbit and Scirocco	0.5	0.5
1976 through 1978 All Others	2.5	0.5
1975 Rabbit, Scirocco, and Dasher	0.5	0.5
1975 All Others	2.5	0.5
1974 Type 4 Fuel Injection 1.8 liter	5.0	0.5
1972 through 1974, except Dasher	3.0	1.0
1972 through 1974 Dasher	2.5	1.0
1968 through 1971	3.5	1.0
pre-1968	6.0	0.5
Diesel Engines (all years)	1.0	0.5
VOLVO		
1978 [and 1979] through 1980	0.5	0.5
1975 through 1977 6 cyl.	1.0	0.5
1975 through 1977 4 cyl.	2.0	0.5
1972 through 1974	3.0	1.0
1968 through 1971	4.0	1.0
pre-1968	6.5	0.5
NON-COMPLYING IMPORTED VEHICLES		
All	6.5	0.5

	%	Enforcement Tolerance Through June, [1980] 1981
DIESEL POWERED VEHICLES		
All	1.0	0.5
ALL VEHICLES NOT LISTED and VEHICLES FOR WHICH NO VALUES ENTERED		
1975 through [1979] 1980 Noncatalyst 4 cyl.	2.0	0.5
1975 through [1979] 1980 Noncatalyst all except 4 cyl.	1.0	0.5
1975 through [1979] 1980 Catalyst Equipped	0.5	0.5
1972 through 1974	3.0	1.0
1970 through 1971	4.0	1.0
1968 through 1969	5.0	1.0
pre-1968 and those engines lesss than 820 cc (50 cu. in.)	6.5	0.5

(2) Hydrocarbon idle emission values not to be exceeded:

PPM	Enforcement Tolerance Through June, [1980] 1981	
No HC Check	—	All two-stroke cycle engines & diesel ignition
1500	100	Pre-1968 4 or less cylinder engines, 4 or less cylindered noncomplying imports, and those engines less than 820 cc (50 cu. in.) displacement
1200	100	Pre-1968 with more than 4 cylinder engines, and noncomplying imports with more than 4 cylinder engines
800	100	1968 through 1969, 4 cylinder
600	100	All other 1968 through 1969
500	100	All 1970 through 1971
400	100	All 1972 through 1974, 4 cylinder
300	100	All other 1972 through 1974
200	100	1975 through [1979] 1980 without catalyst
125	100	1975 through [1979] 1980 with catalyst

(3) There shall be no visible emission during the steady-state unloaded and raised rpm engine idle portion of the emission test from either the vehicle's exhaust system or the engine crankcase. In the case of diesel engines and two-stroke cycle engines, the allowable visible emission shall be no greater than 20% opacity.

(4) The Director may establish specific separate standards, differing from those listed in subsections (1), (2), and (3), for vehicle classes which are determined to present prohibitive inspection problems using the listed standards.

340-24-335 HEAVY-DUTY GASOLINE MOTOR VEHICLE EMISSION CONTROL EMISSION STANDARDS

(1) Carbon Monoxide idle emission values not to be exceeded:

	Base Standard %	Enforcement Tolerance Through June, [1980] 1981
ALL VEHICLES		
Pre-1970	6.0	0.5
1970 through 1973	4.0	1.0
1974 through 1978	3.0	1.0
1979 through 1980	2.0	1.0

(2) Carbon monoxide nominal 2,500 RPM emission values not to be exceeded.

	Base Standard %	Enforcement Tolerance Through June, 1980
ALL VEHICLES		
Pre-1970	3.0	1.0
1970 through [1979] 1980	2.0	1.0
Fuel Injected	No Check	

(3) Hydrocarbon idle emission values not to be exceeded:

	Base Standard PPM	Enforcement Tolerance Through June, 1980
ALL VEHICLES		
Pre-1970	700	200
1970 through 1973	500	200
1974 through 1978	300	200
1979 through 1980	250	100

(4) There shall be no visible emission during the steady-state unloaded engine idle and raised rpm portion of the emission test from either the vehicle's exhaust system or the engine crankcase.

(5) The Director may establish specific separate standards, differing from those listed in subsections (1), (2), (3), and (4) for vehicle classes which are determined to present prohibitive inspection problems using the listed standard.

V2858.4

VICTOR ATIYEH
GOVERNOR

Environmental Quality Commission

Mailing Address: BOX 1760, PORTLAND, OR 97207
522 SOUTHWEST 5th AVENUE, PORTLAND, OR 97204 PHONE (503) 229-5696

MEMORANDUM

TO: Environmental Quality Commission

FROM: Director

SUBJECT: Agenda Item No. H, April 18, 1980, EQC Meeting
Public Hearing and Proposed Adoption of Amendments to Oregon Agricultural Burning Rules, OAR Chapter 340, Section 26-005 Through 26-030 and to Consider Inclusion of the Proposed Amendments and Technical Support Documentation as a Revision to Oregon's State Implementation Plan

I. Background

On January 18, 1980, the Environmental Quality Commission (EQC), at its regularly scheduled meeting, adopted rules regulating open field burning in the Willamette Valley for 1980 and thereafter. The revised rules provided for an increase in the annual acreage limitation for field burning in the Willamette Valley from 180,000 acres to 250,000 acres. In addition, other revisions addressed regulatory changes required by 1979 legislation. The rules adopted at the January 18, 1980, meeting were subsequently submitted to the Environmental Protection Agency (EPA) along with supporting technical documentation, including an outline of field burning smoke management operational procedures and an analysis of the potential air quality impact of the rule changes.

On February 20, 1980, representatives of the City of Eugene and the Oregon Seed Council (OSC) met with EPA Region X staff to discuss the Department of Environmental Quality (DEQ) field burning submittal. At that meeting the EPA initially identified some deficiencies in the DEQ submittal. As a result, these representatives requested an early review of the document and a detailed listing of the deficiencies. This request was made so that a comprehensive revision to the submittal might be completed in order to avoid the need for any additional corrections.

After the February 20, 1980, meeting, OSC and City of Eugene staff members immediately began work on a replacement revision to the impact analysis previously submitted to the EPA. The new analysis undertaken by these staff members was based upon comments made by the EPA technical staff at the aforementioned meeting and was designed to comply with the latest EPA requirements as well as integrate with the Department's rules and smoke management operational procedures. On February 25, 1980, representatives of the OSC and the City of Eugene attended a public hearing (held to receive testimony with regard to the technical support

documents already submitted by the DEQ) and requested that the record of the meeting be held open for a period of time to allow the new analyses which their staff members were developing to be submitted through that public hearing process. The period for public comment on the technical support documents was extended until March 6, 1980, at which time OSC and City of Eugene staff members submitted their analysis of the impact of the increased field burning allowed under current Oregon law and the DEQ's proposed rules.

On March 10, 1980, the DEQ received the EPA's detailed comments outlining the deficiencies of the January 23 submittal. The EPA summarized their major concerns with the previously submitted documents into three categories:

a) Since attainment and maintenance of air quality standards are currently tied to acreage limitations, specific numerical limitations must be included in the regulations and continue to be in effect until replaced by acceptable alternatives.

b) Operational procedures must be adequately defined and detailed for those areas where regulations require subjective decisions or allow substantial discretion.

c) A submitted impact analysis must demonstrate that the proposed revision would not cause or contribute to violations of federal air quality standards, since identified alternative control procedures to avoid such violations are not in place.

The EPA further indicated that they found only two courses of action acceptable with regard to the 250,000-acre submittal of January 23, 1980: 1) withdrawal by the state of the proposed revisions, or 2) processing of a disapproval action. They encouraged the submittal, however, of another acceptable SIP revision package as soon as possible.

The DEQ, OSC, and City of Eugene staff members have worked together to develop a response to the deficiencies as identified in the EPA letter and attachments. Included are substantial revisions to all three documents previously submitted (i.e., field burning rules, smoke management program guidelines, and the impact analysis). The Department submitted all three documents on March 20, 1980, and has subsequently received notification from the EPA indicating general satisfaction.

A "Statement of Need for Rule Making" is attached (Attachment 1). The Environmental Quality Commission's authority to regulate field burning is established in the following Oregon Revised Statutes (ORS):

a) ORS 468.450 authorizing the Commission to establish a schedule to identify the extent and type of burning to be allowed on each "marginal" day.

b) ORS 468.460 authorizing the Commission to promulgate rules controlling Willamette Valley field burning.

In addition, the Department has requested Oregon State University to review and comment upon proposed rule changes pursuant to ORS 468.460.

2. Alternatives and Evaluation

2.1 Proposed Rule Revisions

The EPA indicated in its March 10, 1980, letter and attachments that several rule revisions were necessary to allow approval of the proposed SIP revision. The proposed rules (Attachment II) have been drafted to address essentially all of the EPA's required and suggested revisions affecting field burning. These include a requirement for a specific annual acreage limitation, a daily limitation for the south Willamette Valley, and certain other revisions to the rules to improve their enforcibility. Other minor revisions are also proposed by staff to clarify the rules and correct previous minor errors.

The field burning rules adopted at the January EQC meeting did not include a specific annual acreage limitation. The limitation was referenced as "that amount allowable under either state or federal law." It was hoped this language would avoid a redrafting of the rules should the EPA decide to not accept the legislative limit of 250,000 acres. However, the EPA believes that until a suitable control mechanism is in place both National Ambient Air Quality Standards (NAAQS) and Prevention of Significant Deterioration (PSD) increments must be tied to a seasonal acreage limitation, therefore, the number of acres must be specified in the State Implementation Plan. They consider the language in the previously submitted rules vague and therefore unacceptable. In addition, should the state legislature subsequently remove any specific annual acreage limitation on field burning, neither federal law nor regulation would contain such a limit. Without such a limit the EPA believes it would not have a basis for the determination of attainment and maintenance of federal standards. In response to the EPA's concerns, it is proposed to include the statutory annual acreage limit of 250,000 acres in section 26-013(1).

The EPA was similarly concerned with regard to the attainment and maintenance of 24-hour ambient air quality standards and 24-hour PSD increments. In the January rule submittal it was proposed that the DEQ would implement a monitoring and control system designed to identify potential standards violation situations and regulate open field burning to avoid contributions to such violations. However, it was believed a monitoring system to track PSD increment usage could not be implemented in time for the 1980 season and it was proposed for 1981 and thereafter. For 1980, an acreage limitation was proposed for the south Willamette Valley which was designed to protect the PSD increments. The DEQ proposed to limit the daily burning in the south Willamette Valley during 1980 to the maximum amount burned on any one day during 1978, the baseline year for establishment of PSD increments.

Again, the EPA believes that specific acreage limitations are appropriate in lieu of other acceptable alternative methods for control and prevention of violations of standards due to field burning. Since the proposed monitoring system was not in place and functional at the time of the submittal nor were procedures in place for its operation, the EPA believed the proposed daily acreage limitations should be continued until such time as adequate monitoring is in place and should be given a specific value.

The Department would propose, through rule revision, to adopt a daily acreage limitation for the south Willamette Valley of 46,934 acres per day. This figure represents the maximum acreage burned in the south Willamette Valley on any one day during 1978. In addition, the reference to 1980 is removed.

Other minor rule revisions are proposed in response to EPA Enforcement Division review of the regulations and smoke management operational program. Though the conclusion of this review indicated that the regulations are enforceable, it indicated that effective regulation, either by the DEQ or, in the Department's absence, the EPA would be "resource consumptive and complex." This review and comments were included in the EPA's March 10, 1980, letter.

The Department has proposed a number of minor rule revisions in response to some of these concerns which are logically addressed in the rules. Other concerns with regard to the enforcement aspects of the smoke management program are addressed in revisions to the smoke management guideline document.

2.2 Revisions to the Smoke Management Guidelines

The guideline document was originally submitted to the EPA in support of the 180,000-acre SIP submittal and was designed to supplement the field burning rules. The rules provide for substantial discretion on the part of the Department and also allow for subjective decision making by smoke managers. In order to better understand and identify how such discretion would be used and subjective decisions made, the EPA requested a description of the operating procedures of the smoke management program. Though the guideline document is not anticipated nor designed to be a totally comprehensive description of program operations, it is designed to meet the needs of the EPA and suitably inform other interested parties of such operations.

The EPA, in its response of March 10, 1980, identified basically four concerns with the smoke management operational guldeline document submitted by the Department in January. In summary, the EPA indicated the guidelines did not provide an adequate description of:

a) The overall process for allowing burning on any given day.

b) The implementation of burning restrictions due to rainfall and relative humidity.

c) The implementation and restrictions on various burning techniques.

d) The methods whereby real-time monitoring will be used to identify and avoid potential violations of federal air quality standards.

The proposed modified guideline document (Attachment III) would address the four major areas of concern identified by the EPA. It would contain a more thorough description of the procedures for the identification of wind fields, the techniques whereby effective mixing heights are determined, the methods for classification of atmospheric conditions, and the determination of amounts and areas of burning to be released. In addition, an expanded discussion of expected impact areas would be included. The effects of rainfall and relative humidity on burning

procedures and decision making as well as the methods of implementation of various restrictions due to rainfall would also be addressed. The criteria by which prohibition conditions are established would be clarified.

The proposed guideline document would also include broadened discussions of the role of various ignition techniques in field burning, particularly with regard to fire hazard and the improvement of plume height and dispersion capabilities. Finally, the guideline document would also include a discussion of the integration of real-time monitoring into the management-decision process and the methods whereby the Department determines smoke intrusions.

2.3 Revision of the Impact Analysis Document

The EPA generally considers dispersion modeling to be the most suitable technique for identifying potential effects from new sources such as the additional acreage proposed in this SIP revision. Effects of such sources can thus be estimated for any area of concern within the capabilities of the model. Such models, to be reasonably accurate, must be based on appropriate assumptions regarding source strength and distribution and atmospheric dispersion characteristics. Also, the model should be validated using known emissions and air quality impact information. Unfortunately, no such dispersion model, applicable to the complex Willamette Valley field burning situation, is currently available, or expected to be available in the near future. Thus, the generalized estimates of field burning's impact on NAAQS and PSD increments have been made using other techniques.

In its original analysis of the impact of burning 250,000 acres per year, the Department relied heavily upon its 1978 field burning studies in which the impact of burning was determined for a variety of Willamette Valley locations. Since approximately 154,000 acres were burned during the 1978 season, impacts of that burning were proportionately "rolled up" to estimate the impacts of burning 250,000 acres per year. The impacts identified under this level of burning were then compared with existing federal standards for compliance. Though in general the approach used was conservative, it addressed only the smoke impacts of relatively few days in 1978 when field burning particulate effects proved to be significant. This analysis indicated two potential violations of federal standards: first, in the south Willamette Valley, a violation of the 24-hour PSD increment in the Lebanon area; and second, a violation of the 24-hour Total Suspended Particulate (TSP) standard in Junction City. Also, a violation of the annual TSP standard was predicted at Springfield, though a violation was also expected without the increase in field burning.

To address the potential PSD violation, the Department, by rule, restricted the daily acreage limit to that amount burned on the maximum burning day in the PSD baseline year, 1978. Therefore, no use of PSD increment was projected in the south valley. However, the EPA considered this analysis of the 24-hour Class II PSD increment inadequate because it did not address impacts everywhere to insure that a true maximum was being considered. Furthermore, the EPA did not accept the Department analysis which rolled up daily impacts in proportion to the increase in annual limitation.

To address the potential violation at Junction City, the Department proposed to implement a real-time monitoring system to be integrated into the smoke management decision-making process. Thus, burning could be reduced or prohibited in areas where monitoring indicated TSP levels high enough to jeopardize standards. A monitor was to be installed in Junction City for the 1980 season.

The EPA argued similarly with respect to the potential violations at Junction City indicating that an analysis based upon a roll-up technique or the application of additional impact values on top of existing or previously measured TSP levels was unacceptable. Also, the EPA would not accept an analysis which indicated the potential for violations of federal standards when the real-time monitoring system designed to avoid these violations was not in place and functional.

In general, the EPA would prefer to have the impacts of increased burning modeled or simulated such that they may be determined at any location for any level of burning.

Oregon Seed Council and City of Eugene technical staff members discussed with the EPA the original impact analysis submitted by the DEQ. The EPA staff indicated an alternative approach which would better meet the EPA's impact analysis requirements. Though dispersion modeling, the most accepted technique by the EPA at this time, is not available for the Willamette Valley, the basis for operating such a model, that is, the various meteorological regimes and burning scenarios, can be analyzed and impacts estimated from previously monitored burning. Provided burning and meteorological restrictions resulted in similar burning patterns, it was believed this approach would more nearly satisfy the EPA's requirements. The attached proposed analysis (Attachment IV), based upon current operational procedures and previous program performance, would not identify any potential violations of either NAAQS or PSD increments. The analysis also would conclude that it is feasible to burn 250,000 acres in a season.

The new impact analysis does project significant utilization of the 24-hour Prevention of Significant Deterioration increment for Total Suspended Particulates. Specifically, 80 percent usage of the 37 ug/m^3 24-hour increment is projected for the Lebanon area. Previous Department estimates indicated a somewhat lower maximum increment usage of 41 percent at Coburg. It is clear, however, that either analysis indicates significant increment usage.

The Department recognizes that these PSD increment consumption estimates will affect future airshed use by other new sources. It also recognizes that the current estimates of such consumption have been made based upon generalized burning scenarios and may be subject to refinement on further, more detailed, review. Therefore, the Department is prepared to reanalyze increment consumption for new sources on a case-by-case basis, using the most recently available information, techniques, and air quality data. Furthermore, the Department will continue developing modeling procedures capable of estimating impacts from the complex field burning sources.

2.4 Scheduling of the SIP Submittal

The EPA, in its letter of March 10, 1980, identified a number of deficiencies in the DEQ's submittal and requested either a withdrawal of the submittal by

the state or indicated it would begin procedures to disapprove the submittal. Though in previous submittals a third option has been offered, that of providing supplementary material to make the SIP revision acceptable, that option has not been offered at this time. It is believed that the EPA originally offered only the two possibilities mentioned to insure that they could meet the four-month time limitation for SIP revision disposition established in the Clean Air Act.

The EPA's most recent communication, March 27, 1980 (Attachment V), proposes a different procedure wherein the DEQ would replace its current submittal with an amended version. A general procedure and schedule for the review and processing of the proposed replacement submittal was also suggested. Under this approach, previous public notices and other information dissemination documents and procedures required by federal regulation would remain valid and in effect. In addition, the EPA would be guaranteed a four-month period from the date of receipt of the replacement in which to complete the processing of the submittal. Under this guidance DEQ would:

a) Close the official docket on the January 23, 1980 SIP submittal.

b) Replace that submittal with a new SIP revision, after EQC approval, consisting of: a) the regulation adopted January 18, 1980, and amended as may be appropriate after today's (April 18, 1980) public hearing; b) the updated smoke management guidelines; and c) the new technical support document.

The EPA would then attempt to meet the following compressed schedule:

a)	Replacement revision received	April 21, 1980
b)	Complete review and transmit	May 5, 1980
c)	Publish Notice of Preliminary Rule Making in Federal Register	May 9, 1980
d)	End comment period	June 9, 1980
e)	Prepare and mail Notice of Final Rule Making	June 23, 1980
f)	Publish Notice of Final Rule Making in Federal Register	July 4, 1980

This schedule, providing for an early July approval of the SIP package, would allow growers to make timely decisions with regard to early-season burning. It should be sufficiently early to allow acreage in excess of 180,000 acres to be burned, weather permitting.

2.5 Allocation of Acreage and Permit Issuance

A mid-season SIP approval means the Commission must make a decision with regard to the issuance of first-phase permits and operational rules for the 1980 season. Though under federal regulation, 1979 rules and a 180,000-acre limitation would be in effect at the time of first-phase permit issuance (June 1, 1980), it may be feasible to issue first-phase permits for 250,000 acres and operate under the proposed 1980 rules.

Staff would propose to follow a procedure similar to that used last year for permit issuance unless instructed otherwise by the Commission. The process may be outlined as follows:

a) On or before June 1, 1980, the Department would allocate acreage based on 250,000 acres and issue first-phase permits to seed growers. Permit language would include a caveat indicating the first-phase permits were issued subject to all applicable state and federal laws including the Clean Air Act and associated regulations (SIP).

b) The Department would allocate acreage to fire districts based upon a 180,000-acre limit. Thus, burning permits may only be validated for up to 180,000 acres.

c) The Department would issue burning releases under the more stringent 1980 rules while closely tracking the amount burned against the 180,000-acre limit.

d) If the EPA:

   1) Approves the SIP revision, the DEQ would reallocate to fire districts based upon 250,000 acres.

   2) Disapproves the SIP revision, the DEQ would retain the fire district allocations already issued and immediately issue new allocations to individual growers based upon 180,000 acres.

The alternative expressed in d)2) above has the potential to restrict late-season burners since a disproportionate share of the 180,000-acre limitation could be used up by early-season burners operating under a 250,000-acre limit. This disparate effect should be minimized provided the EPA responds within the time frame identified in their proposed schedule. An earlier response by EPA than that shown in their proposed schedule would further reduce the probability of a significant disparity between early and late season burner accomplishments.

It is important to note that, like last year, following this procedure may result in the issuance of a Notice of Violation by the EPA.

3. Summation

The EPA has reviewed the Department's January 23, 1980, State Implementation Plan (SIP) revision submittal and found it unacceptable. In rejecting the submittal the EPA identified an extensive list of deficiencies in the submitted documents and indicated that the proposed revision would be disapproved if not withdrawn by the Department.

The Oregon Seed Council, the City of Eugene, and the DEQ collaborated on extensive revisions to the January 23 impact analysis, smoke management operational guidelines, and rules. The EPA has expressed, preliminarly, general satisfaction with the proposed replacement package.

The revised impact analysis addresses many concerns of the EPA by resolving previously projected standards violations. However, the revised analysis also identifies considerable consumption of Prevention of Significant Deterioration increment in the Lebanon area. Since this analysis is based upon generalized burning scenarios, the Department is prepared to make specific case-by-case reanalysis of PSD increment consumption for new sources based upon the most recent information and air quality data.

The Department seeks adoption of the proposed revised rules and approval of technical support documents after public hearing at the April 18, 1980, Environmental Quality Commission meeting. The revised rules and technical support documents would then be submitted as a replacement for the previously submitted, January 23, 1980, SIP revision.

Submitting the reworked documents as a replacement for the January 23, 1980, submittal would:

a) Allow previous public notices regarding the January 23 field burning SIP revision to remain effective.

b) Allow the EPA up to four months, from date of receipt of the replacement submittal, for processing of the revision.

Since the EPA approval of the proposed SIP revision is expected after the June 1, 1980, statutory deadline for issuance of first-phase permits, the staff proposes, unless otherwise instructed by the Commission, to issue first-phase permits based upon 250,000 acres to individual growers but limit burning, through fire district allocations, to 180,000 acres until such time as the proposed SIP revision is approved. Staff further proposes to operate the smoke management program under the proposed 1980 rules, if adopted. Should the SIP revision be disapproved the Department would immediately reissue allocations to growers based upon 180,000 acres.

4. Director's Recommendation

Based upon the information set forth in pages 1 through 9 of the Director's April 18, 1980, staff report to the Commission, the testimony in the record of the December 14, 1979, and April 18, 1980, public hearings, and the January 18, 1980, EQC meeting, it is recommended that the Environmental Quality Commission act as follows:

a) Designate as its final Statement of Need for Rule Making the Statement of Need set forth in Attachment I to the Director's staff report.

b) Adopt as permanent rules the proposed rules set forth in Attachment II to the Director's staff report, such rules to become effective upon their prompt filing with the Secretary of State.

c) Approve as supporting technical documentation to the proposed rule revision the smoke management operational guidelines set forth in Attachment III and the field burning particulate impact analysis set forth in Attachment IV to the Director's staff report.

d) Instruct the staff to submit, as a replacement for the January 23, 1980 SIP submittal, the revised rules set forth in Attachment II and the additional supporting documentation set forth in Attachments III and IV for approval by the Environmental Protection Agency as a revision to the Oregon State Implementation Plan.

Bill

WILLIAM H. YOUNG

Attachments:
- I Statement of Need for Rule Making
- II Proposed Field Burning Rules, OAR Chapter 340, Sections 26-005 through 26-030
- III Oregon Field Burning Smoke Management Program Operational Guidelines
- IV An Analysis of Particulate Air Quality Impact in the Willamette Valley Resulting from Increased Field Burning
- V Letter to William H. Young, Director, DEQ, from Donald P. Dubois, Regional Administrator, US EPA, Region X, March 27, 1980

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686-7837
4/3/80

ATTACHMENT I

Agenda Item H, April 18, 1980, EQC Meeting
Public Hearing and Proposed Adoption of Amendments to Oregon Agricultural Burning Rules, OAR Chapter 340, Section 26-005 Through 26-030 and to Consider Inclusion of the Proposed Amendments and Technical Support Documentation as a Revision to Oregon's State Implementation Plan

STATEMENT OF NEED FOR RULE MAKING

Pursuant to ORS 183.335(7), this statement provides information on the Environmental Quality Commission's intended action to adopt a rule.

(1) Legal Authority.

Oregon Revised Statutes 468.020, 468.450, and 468.460.

(2) Need for the Rule.

Proposed amendment of open field burning regulations, OAR 340, 26-005 through 26-030 is needed to:

1. Incorporate changes made necessary by adoption by the 1979 Oregon Legislature of Senate Bill 472, Chapter 181, Oregon Laws, 1979, establishing new law regulating open field burning;

2. Make operational rule changes supportive of the potential increase in acreage to be open burned authorized by SB 472; and,

3. Clarify the existing rules and improve their enforcibility.

All such changes are required to achieve Environmental Protection Agency acceptance of a field burning State Implementation Plan revision.

(3) Principle Documents Relied Upon in This Rule Making.

1. Staff reports, William H. Young, director, Department of Environmental Quality, presented at the August 6, November 16, December 14, 1979, and January 18 and April 18, 1980, EQC meetings.

2. Record of the Environmental Quality Commission meetings, August 6, November 16, December 14, 1979, and January 18 and April 18, 1980.

3. Personal communication with Terry Smith, environmental analyst, City of Eugene, August 3 and August 22, 1979.

4. Personal communication with Charles D. Craig, smoke management specialist, Oregon Seed Council, October 17 and October 22, 1979.

5. Personal communication with David S. Nelson, executive secretary, Oregon Seed Council, October 21 and October 17, 1979.

6. Personal communication with Terry Smith, environmental analyst, City of Eugene, November 28 and December 18, 1979, and February 25, March 6, and March 11, 1980.

7. Personal communication with Charles D. Craig, smoke management specialist, Oregon Seed Council, November 28 and December 18, 1979, and February 13, February 25, March 6, March 11, March 14, and March 27, 1980.

8. Personal communication with John Core, Department of Environmental Quality, November 27, 1979, and January 18, March 14, and March 17, 1980.

9. Proposed regulations regarding Prevention of Significant Deterioration, U. S. Environmental Protection Agency, in Federal Register, September 5, 1979.

10. "Proposal for an Air Quality Performance Regulation for Field Burning Smoke Management," Terry Smith, environmental analyst, City of Eugene, August 3, 1979.

11. "Analysis of Field Burning Performance Standard," memorandum from Charles D. Craig, Oregon Seed Council, to David S. Nelson, executive secretary, Oregon Seed Council, September 27, 1979.

12. Memorandum from David O. Chilcote, agronomist, OSU, to Scott A. Freeburn, Department of Environmental Quality, December 7, 1979.

13. Memorandum of Understanding between the City of Eugene and the Oregon Seed Council, December 13, 1979.

14. Personal communication with David Bray, U. S. Environmental Protection Agency, February 20, March 4, and March 14, 1980.

15. "Oregon Field Burning Smoke Management Operational Guidelines," Department of Environmental Quality.

16. Letter to William H. Young, director, Department of Environmental Quality, from Donald P. Dubois, U. S. Environmental Protection Agency, Region X, received March 10, 1980.

17. "An Analysis of Particulate Air Quality Impact in the Willamette Valley Resulting from Increased Field Burning," City of Eugene, Oregon Seed Council, and Department of Environmental Quality.

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4/3/80

ATTACHMENT II

DEPARTMENT OF ENVIRONMENTAL QUALITY
Chapter 340

Agricultural Operations
AGRICULTURAL BURNING

26-005 DEFINITIONS. As used in this general order, regulation and schedule, unless otherwise required by context:

(1) Burning seasons:

(a) "Summer Burning Season" means the four month period from July 1 through October 31.

(b) "Winter Burning Season" means the eight month period from November 1 through June 30.

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

(3) "Marginal Conditions" means conditions defined in ORS 468.450(1) under which permits for agricultural open burning may be issued in accordance with this regulation and schedule.

(4) "Northerly Winds" means winds coming from directions in the north half of the compass, at the surface and aloft.

(5) "Priority Areas" means the following areas of the Willamette Valley:

(a) Areas in or within 3 miles of the city limits of incorporated cities having populations of 10,000 or greater.

(b) Areas within 1 mile of airports servicing regularly scheduled airline flights.

(c) Areas in Lane County south of the line formed by U. S. Highway 126 and Oregon Highway 126.

(d) Areas in or within 3 miles of the city limits of the City of Lebanon.

(e) Areas on the west side of and within 1/4 mile of these highways; U. S. Interstate 5, 99, 99E, and 99W. Areas on the south side of and within 1/4 mile of U. S. Highway 20 between Albany and Lebanon, Oregon Highway 34 between Lebanon and Corvallis, Oregon Highway 228 from its junction south of Brownsville to its rail crossing at the community of Tulsa.

(6) "Prohibition Conditions" means atmospheric conditions under which all agricultural open burning is prohibited (except where an auxiliary fuel is used such that combustion is nearly complete, or an approved sanitizer is used, or burning is specifically authorized by the Department for experimental [or-test] purposes pursuant to subsection 26-013(6) of this regulation or for the purpose of confirming forecasted atmospheric dispersion conditions).

(7) "Southerly Winds" means winds coming from directions in the south half of the compass, at the surface and aloft.

(8) "Ventilation Index (VI)" means a calculated value used as a criterion of atmospheric ventilation capabilities. The Ventilation Index as used in these rules is defined by the following identity:

$$VI = \frac{\text{(Effective mixing height ((feet))}}{1000} \times \text{(Average wind speed through the effective mixing height (knots))}$$

(9) "Willamette Valley" means the areas of Benton, Clackamas, Lane, Linn, Marion, Multnomah, Polk, Washington and Yamhill Counties lying between the crest of the Coast Range and the crest of the Cascade Mountains, and include the following:

(a) "South Valley," the areas of jurisdiction of all fire permit issuing agents or agencies in the Willamette Valley portion of the Counties of Benton, Lane or Linn.

(b) "North Valley," the areas of jurisdiction of all other fire permit issuing agents or agencies in the Willamette Valley.

(10) "Commission" means the Environmental Quality Commission.

(11) "Local Fire Permit Issuing Agency" means the County Court or Board of County Commissioners or Fire Chief or a Rural Fire Protection District or other person authorized to issue fire permits pursuant to ORS 477.515, 477.530, 476.380, or 478.960.

(12) "Open Field Burning Permit" means a permit issued by the Department pursuant to ORS 468.458.

(13) "Fire Permit" means a permit issued by a local fire permit issuing agency pursuant to ORS 477.515, 477.530, 476.380 or 478.960.

(14) "Validation Number" means a unique three-part number issued by a local fire permit issuing agency which validates a specific open field burning permit for a specific acreage of a specific day. The first part of the validation number shall indicate the number of the month and the day of issuance, the second part the hour of authorized burning based on a 24 hour clock and the third part shall indicate the size of acreage to be burned (e.g., a validation number issued August 26 at 2:30 p.m. for a 70 acre burn would be 0826-1430-070).

(15) "Open Field Burning" means burning of any perennial grass seed field, annual grass seed field or cereal grain field in such manner that combustion air and combustion products are not effectively controlled.

(16) "Backfire Burning" means a method of burning fields in which the flame front does not advance with the existing surface winds. The method requires ignition of the field only on the downwind side.

(17) "Into-the-Wind Strip Burning" means a modification of backfire burning in which additional lines of fire are ignited by advancing directly into the existing surface wind after completing the initial backfires. The technique increases the length of the flame front and therefore reduces the time required to burn a field. As the initial burn nears approximately 85% completion, the remaining acreage may be burned using headfiring techniques in order to maximize plume rise.

(18) "Perimeter Burning" means a method of burning fields in which all sides of the field are ignited as rapidly as practicable in order to maximize plume rise. Little or no preparatory backfire burning shall be done.

(19) "Regular Headfire Burning" means a method of burning fields in which substantial preparatory backfiring is done prior to ignition of the upwind side of the field.

(20) "Approved Alternative Method(s)" means any method approved by the Department to be a satisfactory alternative method to open field burning.

(21) "Approved Interim Alternative Method" means any interim method approved by the Department as an effective method to reduce or otherwise minimize the impact of smoke from open field burning.

(22) "Approved Alternative Facilities" means any land, structure, building, installation, excavation, machinery, equipment or device approved by the Department for use in conjunction with an Approved Alternative Method or an Approved Interim Alternative Method for field sanitation.

(23) "Drying Day" means a 24-hour period during which the relative humidity reached a minimum less than 50% and no rainfall [~~occurred~~] was recorded at the nearest measuring site.

(24) "Basic Quota" means an amount of acreage established for each permit jurisdiction, including fields located in priority areas, in a manner to provide, as reasonably as practicable, an equitable opportunity to burn.

(25) "Priority Area Quota" means an amount of acreage established for each permit jurisdiction, for fields in priority areas, in a manner to provide, as reasonably as practicable, an equitable opportunity to burn.

(26) "Effective Mixing Height" means either the maximum height of actual plume rise as [measured] determined by aircraft measurement or the calculated mixing height, whichever is greater.

(27) "Cumulative Hours of Smoke Intrusion in the Eugene-Springfield Area" means the average of the totals of cumulative hours of smoke intrusion [nephelometer readings] recorded for [at] the Eugene site and the Springfield site. [~~sites which exceed the preexisting background readings by 1.8 x 10^{-4} b-scat units or more and which have been determined by the Department to have been significantly contributed to by field burning. For each hour of nephelometer readings which exceed the preexisting background readings by 5.0 x 10^{-4} b-scat or more, two hours shall be added to the total cumulative hours for that site. After September 15 of each year, for each hour of nephelometer readings which exceed the preexisting background readings by 4.0 x 10^{-4} b-scat or more, two hours shall be added to the total cumulative hours for that site.~~] Provided the Department determines a smoke intrusion to have been significantly contributed to by field burning, it shall record for each hour of the intrusion which causes the nephelometer hourly reading to exceed background levels (the average of the three hourly readings immediately prior to the intrusion) by:

(a) 5.0×10^{-4} b-scat units or more, two hours of smoke intrusion;

(b) 4.0×10^{-4} b-scat units or more, for intrusions after September 15 of each year, two hours of smoke intrusion;

(c) 1.8×10^{-4} b-scat units or more but less than the applicable value in (a) or (b), one hour of smoke intrusion.

26-010 GENERAL PROVISIONS. The following provisions apply during both summer and winter burning seasons in the Willamette Valley unless otherwise specifically noted.

(1) Priority for Burning. On any marginal day, priorities for agricultural open burning shall follow those set forth in ORS 468.450 which give perennial grass seed fields used for grass seed production first priority, annual grass seed fields used for grass seed production second priority, grain fields third priority and all other burning fourth priority.

(2) Permits required.

(a) No person shall conduct open field burning within the Willamette Valley without first obtaining a valid open field burning permit from the Department and a fire permit and validation number from the local fire permit issuing agency for any given field for the day that the field is to be burned.

(b) Applications for open field burning permits shall be filed on Registration Application forms provided by the Department.

(c) Open field burning permits issued by the Department are not valid until acreage fees are paid pursuant to ORS 468.480(1)(b) and a validation number is obtained from the appropriate local fire permit issuing agency for each field on the day the field is to be burned.

(d) As provided in ORS 468.465(1), permits for open field burning of cereal grain crops shall be issued only if the person seeking the permits submits to the issuing authority a signed statement under oath or affirmation that the acreage to be burned will be planted to seed crops (other than cereal grains, hairy vetch, or field pea crops) which require flame sanitation for proper cultivation.

(e) Any person granted an open field burning permit under these rules shall maintain a copy of said permit at the burn site or be able to readily demonstrate authority to burn at all times during the burning operation and said permit shall be made available for at least one year after expiration for inspection upon request by appropriate authorities.

(f) At all times proper and accurate records of permit transactions and copies of all permits shall be maintained by each agency or person involved in the issuance of permits, for inspection by the appropriate authority.

(g) Open field burning permit issuing agencies shall submit to the Department on forms provided, weekly summaries of field burning activities in their permit jurisdiction during the period July 1 to October 15. Weekly summaries shall be mailed and postmarked no later than the first working day of the following week.

(3) Fuel conditions shall be limited as follows:

(a) All debris, cuttings and prunings shall be dry, cleanly stacked and free of dirt and green material prior to being burned, to insure as nearly complete combustion as possible.

(b) No substance or material which normally emits dense smoke or noxious odors may be used for auxiliary fuel in the igniting of debris, cuttings or prunings.

(4) In accordance with ORS 468.450 the Department shall establish a schedule which specifies the extent and type of burning to be allowed each day. During the time of active field burning, the Department shall broadcast this schedule over the Oregon Seed Council radio network operated for this purpose, on an as needed basis, depending on atmospheric and air quality conditions.

(a) Any person open burning or preparing to open burn under these rules shall conduct the burning operation in accordance with the Department's burning schedule.

(b) Any person open burning or preparing to open burn fields under these rules shall monitor the Department's field burning schedule broadcasts and shall conduct the burning operations in accordance with the announced schedule.

(5) Any person open field burning under these rules shall actively extinguish all flames and major smoke sources when prohibition conditions are imposed by the Department. [~~Normal-after-smoulder-excepted.~~]

26-011 CERTIFIED ALTERNATIVE TO OPEN FIELD BURNING.

(1) The Department may certify approved alternative methods of field sanitation and straw utilization and disposal on a permanent or interim basis provided the applicant for such certification:

(a) Provides information adequate to determine compliance with such rules and emissions standards as may be developed pursuant to subsection (2) of this section as well as other State air, water, solid waste, and noise laws and regulations; and

(b) Conducts the approved alternative method and operates any associated equipment subject to subsections (2) and (3) of this section [~~or-other-operational-standards-as-may-be-established-by-the-Department~~].

(2) Pursuant to ORS 468.472 the Commission shall establish rules and emission standards for alternative methods to open field burning. Such standards shall be set to insure an overall improvement in air quality as a result of the use of the alternative as compared to the open field burning eliminated by such use.

(3) Mobile field sanitizers and other alternative methods of field sanitation specifically approved by the Department, and propane flamers are considered alternatives to open field burning for the purposes of fee refunds pursuant to ORS 468.480 and may be used subject to the following provisions:

(a) Open fires away from the machines shall be actively extinguished [~~as rapidly-as-practicable~~].

(b) Adequate water supply shall be available to extinguish open fires resulting from the operation of field sanitizers.

(4) [~~(c)~~] Propane flamers may be used as an approved alternative to open field burning provided that all of the following conditions are met:

(a) Field sanitizers are not available or otherwise cannot accomplish the burning.

(b) The field stubble will not sustain an open fire.

(c) One of the following conditions exist:

(A) The field has been previously open burned and appropriate fees paid.

(B) The field has been flailchopped, mowed, or otherwise cut close to the ground and loose straw has been removed to reduce the straw fuel load as much as practicable.

26-012 REGISTRATION AND AUTHORIZATION OF ACREAGE TO BE OPEN BURNED.

(1) On or before April 1 of each year, all acreages to be open burned under this rule shall be registered with the local fire permit issuing agency or its authorized representative on forms provided by the Department. A nonrefundable $1.00 per acre registration fee shall be paid at the time of registration.

(2) Registration of acreage after April 1 of each year shall require:

(a) Approval of the Department.

(b) An additional late registration fee of $1.00 per acre if the late registration is determined by the Department to be the fault of the late registrant.

(3) Copies of all Registration/Application forms shall be forwarded to the Department promptly by the local fire permit issuing agency.

(4) The local fire permitting agency shall maintain a record of all registered acreage by assigned field number, location, type of crop, number of acres to be burned and status of fee payment for each field.

(5) Burn authorizations shall be issued by the local fire permit issuing agency up to daily quota limitations established by the Department and shall be based on registered feepaid acres and shall be issued in accordance with the priorities established by subsection 26-010(1) of these rules, except that fourth priority burning shall not be permitted from July 15 to September 15 of any year unless specifically authorized by the Department.

(6) No local fire permit issuing agency shall authorize open field burning of more acreage than may be sub-allocated annually to the District by the Department pursuant to section 26-013(5) of these rules.

26-013 LIMITATION AND ALLOCATION OF ACREAGE TO BE OPEN BURNED.

(1) Except for acreage to be burned under 26-013(6) and (7), the maximum acreage to be open burned under these rules shall not exceed [~~that amount authorized under applicable State and Federal law.~~] 250,000 acres.

(2) Any revisions to the maximum acreage to be burned, allocation procedures, permit issuing procedures or any other substantive changes to these rules affecting the open field burning program for any year shall be made prior to June 1 of that year. In making these rule changes the Commission shall consult with Oregon State University (OSU) and may consult with other interested agencies.

(3) Acres burned on any day by approved alternative methods shall not be applied to open field burning acreage allocations or quotas, and such operations may be conducted under either marginal or prohibition conditions.

(4) In the event that total registration is less than or equal to the acreage allowed to be open burned under section 26-013(1) all registrants shall be allocated 100 percent of their registered acres.

(5) In the event that total registration exceeds the acreage allowed to be open burned under 26-013(1) the Department may issue acreage allocations to growers totaling not more than 110 percent of the acreage allowed under section 26-013(1). The Department shall monitor burning and shall cease to issue burning quotas when the total acreage reported burned equals the maximum acreage allowed under section 26-013(1).

(a) Each year the Department shall sub-allocate 110 percent of the total acreage allocation established by the Commission, as specified in section 26-013(1) to the respective growers on a pro rata basis of the individual acreage registered as of April 1 to the total acreage registered as of April 1.

(b) The Department shall sub-allocate the total acre allocation established by the Commission, as specified in section 26-013(1) to the respective fire permit issuing agencies on a pro rata share basis of the acreage registered within each fire permit issuing agency's jurisdiction as of April 1 to the total acreage registered as of April 1.

(c) In an effort to insure that permits are available in areas of greatest need, to coordinate completion of burning, and to achieve the greatest possible permit utilization, the Department may adjust, in cooperation with the fire districts, allocations of the maximum acreage allowed in section 26-013(1).

(d) Transfer of allocations for farm management purposes may be made within and between fire districts on a one-in/one-out basis under the supervision of the Department. Transfer of allocations between growers are not permitted after the maximum acres specified in section 26-013(1) have been burned within the Valley.

(e) Except for additional acreage allowed to be burned by the Commission as provided for in (6) and (7) of this subsection no fire district shall allow acreage to be burned in excess of their allocations assigned pursuant to (b), (c) and (d) above.

(6) Notwithstanding the acreage limitations under 26-013(1), the Department may allow experimental open burning pursuant to ORS 468.490. Such experimental open burning shall be conducted only as may be specifically authorized by the Department and will be conducted for gathering of scientific data, or training of personnel or demonstrating specific practices. The Department shall maintain a record of each experimental burn and may require a report from any person conducting an experimental burn stating factors such as:

1. Date, time and acreage of burn.
2. Purpose of burn.
3. Results of burn compared to purpose.
4. Measurements used, if any.
5. Future application of results of principles featured.

(a) Experimental open burning, exclusive of that acreage burned by experimental open field sanitizers, shall not exceed 7500 acres annually.

(b) For experimental open burning the Department may assess an acreage fee equal to that charged for open burning of regular acres. Such fees shall be segregated from other funds and dedicated to the support of smoke management research to study variations of smoke impact resulting from differing and various burning practices and methods. The Department may contract with research organizations such as academic institutions to accomplish such smoke management research.

(7) Pursuant to ORS 468.475 the Commission may permit the emergency open burning under the following procedures:

(a) A grower must submit to the Department an application form for emergency field burning requesting emergency burning for one of the following reasons;

(A) Extreme hardship documented by:

An analysis and signed statement from a CPA, public accountant, or other recognized financial expert which establishes that failure to allow emergency open burning as requested will result in extreme financial hardship above and beyond mere loss of revenue that would ordinarily accrue due to inability to open burn the particular acreage for which emergency open burning is requested. The analysis shall include an itemized statement of the applicant's net worth and include a discussion of potential alternatives and probable related consequences of not burning.

(B) Disease outbreak, documented by:

An affidavit or signed statement from the County Agent, State Department of Agriculture or other public agricultural expert authority that, based on his personal investigation, a true emergency exists due to a disease outbreak that can only be dealt with effectively and practicably by open burning.

The statement must also include at least the following:

i) time field investigation was made,
ii) location and description of field,
iii) crop,
iv) infesting disease,
v) extent of infestation (compared to normal),
vi) necessity and urgency to control,
vii) availability, efficacy and practicability of alternative control procedures,
viii) probable damages or consequences of non-control.

(C) Insect infestation, documented by:

Affidavit or signed statement from the County Agent, State Department of Agriculture or other public agricultural expert authority that, based on his personal investigation, a true emergency exists due to an insect infestation that can only be dealt with effectively and practicably by open burning. The statement must also include at least the following:

i) time field investigation was made,
ii) location and description of field,
iii) crop,
iv) infesting insect,
v) extent of infestation (compared to normal),
vi) necessity and urgency to control,
vii) availability, efficacy, and practicability of alternative control procedures,
viii) probable damages or consequences of non-control.

(D) Irreparable damage to the land documented by:

An affidavit or signed statement from the County Agent, State Department of Agriculture, or other public agricultural expert authority that, based on his personal investigation, a true emergency exists which threatens irreparable damage to the land and which can only be dealt with effectively and practicably by open burning. The statement must also include at least the following:

i) time of field investigation,
ii) location and description of field,
iii) crop,
iv) type and characteristics of soil,
v) slope and drainage characteristics of field,

vi) necessity and urgency to control,
vii) availability, efficacy and practicability of alternative control procedures,
viii) probable damages or consequences of non-control.

(b) Upon receipt of a properly completed application form and supporting documentation the Commission shall within 10 days, return to the grower its decision.

(c) An open field burning permit, to be validated [~~upon~~] subject to daily quota releases and payment of the required fee, shall be issued by the Department for that portion of the requested acreage which the Commission has approved.

(d) Application forms for emergency open field burning provided by the Department must be used and may be obtained from the Department either in person, by letter or by telephone request.

(8) The Department shall act, pursuant to this section, on any application for a permit to open burn under these rules within 60 days of registration and receipt of the fee provided in ORS 468.480.

(9) The Department may on a fire district by fire district basis, issue limitations more restrictive than those contained in these regulations when in their judgment it is necessary to attain and maintain air quality.

26-015 WILLAMETTE VALLEY SUMMER BURNING SEASON REGULATIONS

As part of the smoke management program provided for in ORS 468.470 the Department shall schedule the time, places, and amounts of open field burning according to the following provisions:

(1) As provided for in ORS 468.450 atmospheric conditions will be classified as marginal or prohibition conditions under the following criteria:

(a) Marginal Class N conditions: Forecast northerly winds and a ventilation index greater than 12.5.

(b) Marginal Class S conditions: Forecast southerly winds and a ventilation index greater than 12.5.

(c) Prohibition conditions: A ventilation index of 12.5 or less.

(2) Limitations on Burning Hours.

(a) Burning hours shall be limited to those specifically authorized by the Department each day.

(b) Unless otherwise specifically limited by the Department, burning hours may begin at 9:30 a.m. PDT, under marginal conditions but no open field burning may be started later than one-half hour before sunset or be allowed to continue later than one-half hour after sunset.

(c) The Department may alter burning hours according to atmospheric ventilation conditions when necessary to attain and maintain air quality.

(d) Burning hours may be reduced by the fire chief or his deputy when necessary to protect from danger by fire.

(3) Limitations on Locations and Amounts of Field Burning Emissions.

(a) Use of acreage quotas.

(A) In order to assure a timely and equitable distribution of burning, authorizations of acreages shall be issued in terms of single, multiple, or fractional basic quotas or priority area quotas as listed in Table 1, attached as Exhibit A and incorporated by reference into this regulation and schedule.

(B) Willamette Valley permit agencies or agents not specifically named in Table 1 shall have a basic quota and priority area quota of 50 acres only if they have registered acreage to be burned within their jurisdiction.

(C) The Department may designate additional areas as Priority Areas and may adjust the basic acreage quotas or priority area quotas of any permit jurisdiction where conditions in its judgment warrant such action.

(b) Distribution and limitation of burning under various classifications of atmospheric conditions.

(A) Prohibition. Under prohibition conditions, no fire permits or validation numbers for agricultural open burning shall be issued and no burning shall be conducted, except where an auxiliary liquid or gaseous fuel is used such that combustion is essentially completed, an approved field sanitizer is used, or where burning is specifically authorized by the Department for determining atmospheric dispersion conditions or for experimental burning pursuant to section 26-013(6) of this regulation.

(B) Marginal Class N Conditions. Unless specifically authorized by the Department, on days classified as Marginal Class N burning [~~may~~] shall be limited to the following:

(i) North Valley: one basic quota may be issued in accordance with Table 1 except that no acreage located within the permit jurisdictions of Aumsville, Drakes Crossing, Marion County District 1, Silverton, Stayton, Sublimity, and the Marion County portions of the Clackamas-Marion Forest Protection District shall be burned upwind of the Eugene-Springfield non-attainment area.

(ii) South Valley: one priority area quota for priority area burning may be issued in accordance with Table 1.

(C) Marginal Class S Conditions. Unless specifically authorized by the Department on days classified as Marginal Class S conditions, burning shall be limited to the following:

(i) North Valley: one basic quota may be issued in accordance with Table 1 in the following permit jurisdictions: Aumsville, Drakes Crossing, Marion County District 1, Silverton, Stayton, Sublimity, and the Marion County portion of the Clackamas-Marion Forest Protection District. One priority area quota may be issued in accordance with Table 1 for priority area burning in all other North Valley jurisdictions.

(ii) South Valley: one basic quota may be issued in accordance with Table 1.

(D) In no instance shall the total acreage of permits issued by any permit issuing agency or agent exceed that allowed by the Department for the marginal day except as provided for jurisdictions with 50 acres quotas or less as follows: when the Department has authorized one quota or less, a permit may be issued to include all the acreage in one field providing that field does not exceed 100 acres and provided further that no other permit is issued for that day. Permits shall not be so issued on two consecutive days.

(c) Restrictions on burning based upon air quality.

(A) The Department shall establish the minimum allowable effective mixing height required for burning based upon cumulative hours of smoke intrusions in the Eugene-Springfield area as follows:

(i) Except as provided in (ii) of this subsection, burning shall not be permitted on a marginal day whenever the effective mixing height is less than the minimum allowable height specified in Table 2, attached as Exhibit B and incorporated by reference into this regulation.

(ii) Not withstanding the effective mixing height restrictions of (i) above, the Department may authorize up to 1000 acres total for the Willamette Valley, each marginal day on a field-by-field or area-by-area basis.

(B) [During-1980,] The total acreage burned in the south Valley under southerly winds shall not exceed [the-maximum-acreage-burned] , on a single day, [in-the-south Valley-during-1978] 46,934 acres.

(C) The Department shall prohibit burning if, based upon real-time monitoring, a violation of federal or state air quality standards is projected to occur.

(D) The Department may on a field-by-field or area-by-area basis prohibit the burning of fields which result in excessive low-level smoke.

(d) Special restrictions on priority area burning.

(A) No priority acreage may be burned on the upwind side of any city, airport, or highway within the same priority area.

(B) No south priority acreage shall be burned upwind of the Eugene-Springfield non-attainment area.

(e) Restrictions on burning techniques.

(A) The Department shall require the use of into-the-wind strip-lighting on annual grass seed and cereal crop fields when fuel conditions or atmospheric conditions are such that use of into-the-wind strip-lighting as determined by observation of test fires or prior general burning would reduce ground level smoke concentrations [effects,] and specifically, except under conditions when wind directions are between 20 degrees and 90 degrees, the Department shall require such use when [:--(i) burning-occurs-shortly-after-restrictions-on-burning-due-to-rainfall-have-been-lifted or-when-the-fields-to-be-burned-are-wet;-or-(ii)] it is estimated that [plume-rise] an effective mixing height over 3500 feet will not occur.

(B) The Department shall require the use of perimeter burning on all [dry] fields where no severe fire hazard conditions exist and where strip-lighting is not required. "Severe fire hazards" for purposes of this subsection means where adjacent and vulnerable timber, brush, or buildings exist next to the field to be burned.

(C) The Department shall require regular headfire burning on all fields where a severe fire hazard exists.

(f) Restrictions on burning due to rainfall and relative humidity.

(A) Burning shall not be permitted in an area for one drying day for each 0.10 inch of rainfall received at the nearest measuring station up to a maximum of four consecutive drying days.

(B) The Department may on a field-by-field or area-by-area basis waive the restrictions of (A) above when dry fields are available through special preparation or unusual rainfall patterns and wind direction and dispersion conditions are appropriate for burning with minimum smoke impact.

(C) Burning shall not be permitted in an area when relative humidity at the nearest measuring station exceeds 50 percent under forecast northerly winds or 65 percent under forecast southerly winds.

[(B)-The-Department-may-on-a-field-by-field-or-area-by-area-basis-prohibit-the burning-of-fields-containing-high-moisture-content-stubble-or-regrowth-material which,-when-burned,-would-result-in-excessive-low-level-smoke.]

26-030 WINTER BURNING SEASON REGULATION.

(1) Classification of atmospheric conditions:

(a) Atmospheric conditions resulting in computed air pollution index values in the high range, values of 90 or greater, shall constitute prohibition conditions.

(b) Atmospheric conditions resulting in computed air pollution index values in the low and moderate ranges, values less than 90, shall constitute marginal conditions.

(2) Extent and Type of Burning.

(a) Burning Hours. Burning hours for all types of burning shall be from 9:00 a.m. until 4:00 p.m., but may be reduced when deemed necessary by the fire chief or his deputy. Burning hours for stumps may be increased if found necessary to do so by the permit issuing agency. All materials for burning shall be prepared and

the operation conducted, subject to local fire protection regulation to insure that it will be completed during the allotted time.

(b) Certain Burning Allowed Under Prohibition Conditions. Under prohibition conditions no permits for agricultural open burning may be issued and no burning may be conducted, except where an auxiliary liquid or gaseous fuel is used such that combustion is essentially complete, or an approved field sanitizer is used.

(c) Priority for Burning on Marginal Days. Permits for agricultural open burning may be issued on each marginal day in each permit jurisdiction in the Willamette Valley, following the priorities set forth in ORS 468.450 which gives perennial grass seed fields used for grass seed production first priority, annual grass seed fields used for grass seed production second priority, grain fields third priority and all other burning fourth priority.

26-025 CIVIL PENALTIES. In addition to any other penalty provided by law:

(1) Any person who intentionally or negligently causes or permits open field burning contrary to the provisions of ORS 468.450, 468.455, 468.480, 476.380 and 478.960 shall be assessed by the Department a civil penalty of at least $20, but not more than $40 for each acre so burned.

(2) Any person planting contrary to the restrictions of subsection (1) of ORS 468.465 shall be assessed by the Department a civil penalty of $25 for each acre planted contrary to the restrictions.

(3) Any person who violates any requirements of these rules shall be assessed a civil penalty pursuant to OAR Chapter 340, Division 12, CIVIL PENALTIES.

26-030 TAX CREDITS FOR APPROVED ALTERNATIVE METHODS, APPROVED INTERIM ALTERNATIVE METHODS OR APPROVED ALTERNATIVE FACILITIES.

(1) As provided in ORS 468.150, approved alternative methods or approved alternative facilities are eligible for tax credit as pollution control facilities as described in ORS 468.155 through 468.190.

(2) Approved alternative facilities eligible for pollution control facilities tax credit shall include:

(a) Mobile equipment including but not limited to:

(A) Straw gathering, densifying and handling equipment.

(B) Tractors and other sources of motive power.

(C) Trucks, trailers, and other transportation equipment.

(D) Mobile field sanitizers and associated fire control equipment.

(E) Equipment for handling all forms of processed straw.

(F) Special straw incorporation equipment.

(b) Stationary equipment and structures including but not limited to:

(A) Straw loading and unloading facilities.

(B) Straw storage structures.

(C) Straw processing and in plant transport equipment.

(D) Land associated with stationary straw processing facilities.

(E) Drainage tile installations which will result in a reduction of acreage burned.

(3) Equipment and facilities included in an application for certification for tax credit under this rule will be considered at their current depreciated value and in proportion to their actual use to reduce open field burning as compared to their total farm or other use.

(4) Procedures for application and certification of approved alternative facilities for pollution control facility tax credit.

(a) Preliminary certification for pollution control facility tax credit:

(A) A written application for preliminary certification shall be made to the Department prior to installation or use of approved alternative facilities in the first harvest season for which an application for tax credit certification is to be made. Such application shall be made on a form provided by the Department and shall include but not be limited to:

(i) Name, address and nature of business of the applicant.

(ii) Name of person authorized to receive Department requests for additional information.

(iii) Description of alternative method to be used.

(iv) A complete listing of mobile equipment and stationery facilities to be used in carrying out the alternative methods and for each item listed include:

(a) Date or estimated future date of purchase.

(b) Percentage of use allocated to approved alternative methods and approved interim alternative methods as compared to their total farm or other use.

(v) Such other information as the Department may require to determine compliance with state air, water, solid waste, and noise laws and regulations and to determine eligibility for tax credit.

(B) If, upon receipt of a properly completed application for preliminary certification for tax credit for approved alternative facilities the Department finds the proposed use of the approved alternative facilities are in accordance with the provisions of ORS 468.175, it shall, within 60 days, issue a preliminary certification of approval. If the proposed use of the approved alternative facilities are not in accordance with provisions of ORS 468.175, the Commission shall, within 60 days, issue an order denying certification.

(b) Certification for pollution control facility tax credit.

(A) A written application for certification shall be made to the Department on a form provided by the Department and shall include but not be limited to the following:

(i) Name, address and nature of business of the applicant.

(ii) Name of person authorized to receive Department requests for additional information.

(iii) Description of the alternative method to be used.

(iv) For each piece of mobile equipment and/or for each stationary facility, a complete description including the following information as applicable:

(a) Type and general description of each piece of mobile equipment.

(b) Complete description and copy of proposed plans or drawings of stationary facilities including buildings and contents used for straw storage, handling or processing of straw and straw products or used for storage of mobile field sanitizers and legal description of real property involved.

(c) Date of purchase or initial operation.

(d) Cost when purchased or constructed and current value.

(e) General use as applied to approved alternative methods and approved interim alternative methods.

(f) Percentage of use allocated to approved alternative methods and approved interim alternative methods as compared to their farm or other use.

(B) Upon receipt of a properly completed application for certification for tax credit for approved alternative facilities or any subsequently requested additions to the application, the Department shall return within 120 days the decision

of the Commission and certification as necessary indicating the portion of the cost of each facility allocable to pollution control.

(5) Certification for tax credits of equipment or facilities not covered in OAR Chapter 340, Section 26-030(1) through 26-030(4) shall be processed pursuant to the provisions of ORS 468.165 through 468.185.

(6) Election of type of tax credit pursuant to ORS 468.170(5).

(a) As provided in ORS 468.170(5), a person receiving the certification provided for in OAR Chapter 340, Section 26-030(4)(b) shall make an irrevocable election to take the tax credit relief under ORS 316.097, 317.072, or the ad volorem tax relief under ORS 307.405 and shall inform the Department of his election within 60 days of receipt of certification documents on the form supplied by the Department with the certification documents.

(b) As provided in ORS 468.170(5) failure to notify the Department of the election of the type of tax credit relief within 60 days shall render the certification ineffective for any tax relief under ORS 307.405, 316.097 and 317.072.

EXHIBIT A

TABLE I

FIELD BURNING ACREAGE QUOTAS

NORTH VALLEY AREAS

County/Fire District	Quota	
North Valley Counties	Basic	Priority
Clackamas County		
Canby RFPD	50	0
Clackamas County #54	50	0
Clackamas-Marion FPA	100	0
Estacada RFPD	75	0
Molalla RFPD	50	0
Monitor RFPD	50	0
Scotts Mills RFPD	50	0
Total	425	0
Marion County		
Aumsville RFPD	100	0
Aurora-Donald RFPD	50	50
Drakes Crossing RFPD	100	0
Hubbard RFPD	50	0
Jefferson RFPD	225	50
Marion County #1	200	50
Marion County Unprotected	50	50
Mt. Angel RFPD	50	0

TABLE I

(continued)

County/Fire District	Quota	
North Valley Counties	Basic	Priority
Marion County (continued)		
St. Paul RFPD	125	0
Salem City	50	50
Silverton RFPD	600	0
Stayton RFPD	300	0
Sublimity RFPD	500	0
Turner RFPD	50	50
Woodburn RFPD	125	50
Total	2575	350
Polk County		
Spring Valley RFPD	50	0
Southeast Rural Polk	400	50
Southwest Rural Polk	125	50
Total	575	100
Washington County		
Cornelius RFPD	50	0
Forest Grove RFPD	50	0
Forest Grove, State Forestry	50	0

TABLE I

(continued)

County/Fire District	Quota	
North Valley Counties	Basic	Priority
Washington County (continued)		
Hillsboro	50	50
Washington County RFPD #1	50	50
Washington County RFPD #2	50	50
Total	300	150
Yamhill County		
Amity #1 RFPD	125	50
Carlton RFPD	50	0
Dayton RFPD	50	50
Dundee RFPD	50	0
McMinnville RFPD	150	75
Newberg RFPD	50	50
Sheridan RFPD	75	50
Yamhill RFPD	50	50
Total	600	325
North Valley Total	4475	925

TABLE I

(continued)

SOUTH VALLEY AREAS

County/Fire District	Quota	
South Valley Counties	Basic	Priority
Benton County		
County Non-District & Adair	350	175
Corvallis RFPD	175	125
Monroe RFPD	325	50
Philomath RFPD	125	100
Western Oregon FPD	100	50
Total	1075	500
Lane County		
Coburg RFPD	175	50
Creswell RFPD	75	100
Eugene RFPD (Zumwalt RFPD)	50	50
Junction City RFPD	325	50
Lane County Non-District	100	50
Lane County RFPD #1	350	150
Santa Clara RFPD	50	50
Thurston-Walterville	50	50
West Lane FPD	50	0
Total	1225	550

TABLE I

(continued)

County/Fire District	Quota	
South Valley Counties	Basic	Priority
Linn County		
Albany RFPD (inc. N. Albany, Palestine, Co. Unprotected Areas)	625	125
Brownsville RFPD	750	100
Halsey-Shedd RFPD	2050	200
Harrisburg RFPD	1350	50
Lebanon RFPD	325	325
Lyons RFPD	50	0
Scio RFPD	175	50
Tangent RFPD	925	325
Total	6250	1225
South Valley Total	8550	2275

EXHIBIT B

TABLE 2

MINIMUM ALLOWABLE EFFECTIVE MIXING HEIGHT
REQUIRED FOR BURNING BASED UPON THE CUMULATIVE HOURS
OF SMOKE INTRUSION IN THE EUGENE-SPRINGFIELD AREA

Cumulative Hours of Smoke Intrusion in the Eugene-Springfield Area	Minimum Allowable Effective Mixing Height (feet)
0 - 14	no minimum height
15 - 19	4,000
20 - 24	4,500
25 and greater	5,500

ATTACHMENT III

OREGON FIELD BURNING

SMOKE MANAGEMENT PROGRAM OPERATIONAL GUIDELINES

1. Background

1.1 Grass Seed Industry

Annual grass seed industry production in Oregon registers over 200 million pounds of seed from nearly 300 thousand acres in production. More than 150 thousand acres are reported burned each year in the Willamette Valley for the purposes of weed and disease abatement and residue removal. Some 800 farms, 1,800 families, are in direct seed production while associated industries support many more people.

1.2 Willamette Valley Field Burning Climatology

The position of the Eastern Pacific high pressure cell during the summertime is responsible for frequent limited ventilation and persistent north winds in Northwestern Oregon during July, August, September, and October. The strength of this high pressure cell is dynamic, or constantly changing, so its influence on atmospheric circulation within the Willamette Valley is constantly changing. Because of solar heating conditions at the surface and the occasional influx of relatively cool air aloft, vertical ventilation is sufficient to allow turbulent mixing to greater than 3,500 feet about one-third to one-half of the time. It is during these times that field burning smoke has a chance to escape from the confines of the Willamette Valley. Under conditions of higher mixing levels and northwesterly and westerly winds, major impact of field burning smoke in the more heavily populated areas of the Valley is usually avoided if the fields burned are sufficiently restricted by location and quantity.

The decreasing insolation of the late summer periods and the persistence of the Pacific high pressure cell over the Northwest sometimes produce extended periods of poor ventilation conditions. These are most notable in the Willamette Valley during September and October. During these periods of poor ventilation, poor visibility and smoky conditions are common and often cannot be related to specific sources.

Occasionally the influence of the Pacific high pressure cell is so weakened that a mass movement of air from the south or southwest occurs. This is usually accompanied by excellent ventilation conditions and, since the wind transports the smoke toward the northeast, relatively large acreages just north of Eugene can be burned without affecting the Eugene area. Such movements are also accompanied by increases in atmospheric moisture resulting in higher relative humidities and an increased potential for precipitation. Precipitation during the July through September period averages less than 2.5 inches.

1.3 Distribution of Acreage

The Willamette Valley is operationally divided into a north and south designation. The counties of Lane, Linn, and Benton are classified as "south Valley" while the remaining counties, Clackamas, Marion, Polk, Washington, and Yamhill, are considered "north Valley." About 85,000 acres are in production in the north Valley area while about 205,000 acres are in seed production in the south Valley.

1.4 Smoke-Sensitive Areas

There are specific areas which the smoke management program is designed to protect from smoke impact. These areas are designated in the rules as follows:

a) Areas within three miles of cities having populations of 10,000 or greater;
b) Areas within one mile of airports servicing regularly scheduled airline flights;
c) Areas within one-quarter mile to the west of the three major north-south highways, Interstate 5 and Highways 99E and 99W; and
d) Areas within one-quarter mile to the south of two major east-west highways, Highway 20 and 229.

These areas are given first priority for burning when winds are favorable for protection of the nearby smoke-sensitive object.

Though the Department may establish priority areas under rule, no areas would be permanently identified except through the normal rule-making process. Temporary priority status may be authorized on a field-by-field basis if:

a) Burning under such status shall not adversely effect other priority areas; and
b) Such status is necessary due to a short-term event such as a recreational meeting or public gathering creating a smoke-sensitive area; or
c) Such status is necessary due to recent construction or shifts in population resulting in a new smoke-sensitive area.

Although these areas are protected by a special priority designation, local fire officials work closely with seed growers and other smoke management personnel to protect schools, nursing homes, scheduled public events, etc., from detrimental smoke impact.

1.5 Principal Parties

The Department of Environmental Quality (DEQ) works to develop rules governing smoke management and a set of operational procedures and criteria which protect the public from deleterious smoke impacts and yet provide adequate burning opportunities.

The Oregon Seed Council (OSC) represents the seed industry and assists the DEQ in development of manangement strategies for field burning. The OSC also provides, through contract with the DEQ, operational support which includes a radio communications system, aerial surveillance, and organization arrangements with growers and local fire districts.

Some 65 local fire protection districts serve to issue permits, collect fees, and organize burning operations. Fire officials provide practical considerations to management concerning fire safety, fuel and weather conditions, and registration and permit issuance procedures. Of course, the fire district office is a vital information source in enforcement activities. Weekly reports sent to the DEQ from fire districts create the spatial and temporal data base for acreage burned. (See Attachment 1.)

1.6 Legal Authority

Authority to regulate open field burning is given to the Environmental Quality Commission (EQC) by Oregon Laws 1979, Chapter 181. The DEQ is given a more specific charge to conduct a smoke management program. The rules by which the smoke management program is operated are embodied in Chapter 340 of the Oregon Administrative Rules. Set forth in these documents are registration and permit procedures with an associated fee structure. Meteorological, fuel, and air quality guidelines are determined. Finally, a civil penalty schedule is established for infractions of the rules or law.

2. Control of Burning

2.1 Registration of Fields

By April 1 of each year all acreage to be open burned must be registered with the DEQ. Registration tasks are accomplished at and by the local fire district offices. The registration includes information as to the location and amount of acres to be burned (see Attachment 2). Pertinent data regarding the growers, fire districts, and grass types are also included. This registration forms the data base for permit issuance, daily control measures, impact assessment, and an ongoing research program.

2.2 Issuance of First-Phase Permits

Within 60 days of registration, first-phase permits are issued by the DEQ to individuals who registered prior to April 1 for a pro rata share of the legal maximum of permitted acres which may be open burned (see Attachment 3.) The first-phase permit physically consists of permit conditions with a completed copy of the affected registration form reproduced on the reverse side. First-phase permits are distributed by the DEQ and retained at the local fire district to await final validation at the actual time when burning is allowed.

2.3 Daily Acreage Control

2.3.1 Burn Authorization (Quota) Releases

Quota size is selected to give an equitable opportunity to burn to all fire districts. A quota represents a specific acreage amount available for burning for each fire district. In most cases it is proportional to the amount of acreage normally registered in that district. Quotas are released by the DEQ on a single, multiple, or fractional basis for specific periods of time depending upon meteorological conditions. Determination of quota releases is detailed in section 3.2.2.

Releases of acreage for burning are accomplished through the Oregon State Fire Marshal's office and directly to fire districts and growers through use of radio messages. (See section 2.4.) Releases are issued as needed to accomplish burning without smoke impact but are given at least twice each day during the active burning season (roughly July 15 through September 15). Burn release information includes as a minimum:

a) Current time of day;
b) Identification of areas where burning is allowed:
c) Identification of amount of burning (number of quotas);
d) Beginning and ending times for burning; and
e) Identification of required ignition techniques.

In addition, such releases may also include:

f) Specific requirements or limitations on field fuel conditions or preparation; and
g) Other specific requirements.

Examples of specific releases of items a) through f) are given in Attachment 4 of these guidelines.

2.3.2 Validation of Permits

First-phase permits may be validated by local fire districts for an acreage amount up to the level specified by the DEQ in the quota release. Daily acreage amounts authorized by the DEQ are suballocated to growers by local fire permit-issuing agents according to mutually approved procedures. Thus, because the pertinent registration form is included, a validated permit indicates the amount of acreage (authorized by the permit agent), crop type, location, and time of the burning.

2.4 Use of Radio Advisories

Radio advisories are regularly broadcast to fire districts and growers (see Attachment 5) each morning and early afternoon to indicate forecast weather factors, current air quality, and the probability and likely location and time of burning to be expected during the day. Advisories are also broadcast

throughout the day as required by evolving burning conditions. The radio broadcast is also the means by which information regarding quota releases is distributed directly to growers for specified areas and time periods. All holders of validated permits must continuously monitor and burn in compliance with radio advisories. Therefore, radio announcements are used to modify or discontinue burning activity.

2.5 Enforcement

2.5.1 Field Investigations

Successful smoke management is built on a foundation of cooperative compliance with rules governing open burning. This compliance, however, is supported by coordinated inforcement activity involving the DEQ aerial surveillance, field inspectors, and permit agents. Direct observation by field inspectors and public complaints provide information of possible rule violations. The number of enforcement personnel active in investigations fluctuates according to burning activity and areas to be covered. Radio communications facilitate the vital coordinating function among those actively involved in investigating possible rule infractions during burning periods.

During normal daily activities enforcement personnel inspect fire district records, grower burning activity, and permits for compliance with applicable acreage limits, burning techniques and burning hours. Field inspectors also provide information on field fuel condition (qualitative), surface winds, and relative humidity. When a violation has occurred, field inspectors issue a notice of violation to the permit holder identifying the rule infraction that has been observed and that civil penalties may be assessed by the DEQ.

2.5.2 Civil Penalty Schedule

Civil penalties may be assessed according to the following schedule.

a) Any person burning without registration, valid permit, or paying of appropriate fees may be assessed at least $20 but not more than $40 per acre so burned.
b) Any person burning cereal grain crop residue and not planting a subsequent seed crop may be assessed $25 per acre for each acre so burned.
c) Any person found violating rules governing air quality may be assessed a civil penalty of up to $10,000 for each day of violation.

3. Management of Burning

3.1 Collection of Meteorological Data

3.1.1 Wind Direction

The direction of smoke transport is the key element in determining areas in which burning may occur and the determination of northerly or southerly flow is required for certain burn decisions. (See Attachment 9.) Wind direction data

is obtained from upper air and surface National Weather Service (NWS) observing stations at Salem and Medford. Pilot balloons taken at Eugene, Halsey, Silverton, Alsea, Zigzag, and Yaquina Head are used to help build a coherent picture of the transport wind field. Surface wind measurements are received from NWS stations as well as DEQ and OSC meteorological stations.

Wind information from the NWS is transmitted to the DEQ by teletype communications. Surface winds from DEQ stations will be available after the 1979 season on a real-time basis through use of the Department's Data Acquisition System. OSC meteorological stations (located principally at local fire stations) may be interrogated by radio through local fire officials. All of these sites are identified as to location in Attachments 5, 6, and 7.

3.1.2 Wind Speed

Wind speed data is available from all of the above-mentioned sources. Wind speeds that are light at the surface but increasing substantially through the mixed layer are optimal for good plume rise and smoke transport. Strong surface winds tend to fracture plumes and create excessive low level smoke concentrations. Light winds aloft do not provide adequate transport, thus downward mixing may reintroduce smoke to the surface layer. As with wind direction, wind speed is substantially affected by surface heating patterns and synoptic scale pressure changes.

A specific correlation between wind speed and smoke plume activity cannot be calculated because of other interdependant factors such as fuel conditions and atmospheric stability. However, experience indicates surface winds below 10 mph do not inhibit plume rise appreciably. Wind speeds between 10 mph and 15 mph tend to fracture plumes and hinder plume rise by entrainment of colder ambient air. Very little burning may be accomplished at higher speeds due to difficulties in fire control and turbulent transport of smoke back to the surface.

3.1.3 Mixing Height, Effective Mixing Height, and Ventilation Index

The depth of the mixed layer normally grows through the day and collapses rather quickly in the evening in response to surface heating effects. In the absence of differential temperature advections through the mixed layer, the mixing height is calculated by the Department from an accurate maximum temperature forcast applied to the morning temperature sounding taken by the NWS. Specifically, when plotted on a pseudo-adiabatic chart, the intersection of a line of constant potential temperature (identified by the maximum forecast surface temperature and the surface pressure) and the atmospheric temperature sounding profile identifies the top of the mixed layer. Typically, the calculated mixing height determined by this method is compared to NWS and Department of Forestry forecasts for consistency.

The mixing height as calculated from the pseudo-adiabatic chart represents a minimum estimate of atmospheric mixing. Sky cover, atmospheric moisture, insolation, atmospheric stability above the point of intersection, wind speed, and wind shear can effect the eventual dispersion of pollutant. In addition, bouyant or high velocity plumes can often, through their own energy, overcome atmospheric limitations to vertical dispersion and effectively increase the mixing height.

To better ascertain actual atmospheric mixing capabilities the DEQ observes and measures plume rise from test fires or general burning as part of its routine aerial observations. The maximum plume rise attained by these burns is more representative of actual dispersion capabilities.

The "effective mixing height" is then defined as either the observed plume height or calculated (as described above) mixing height, whichever is greater. Almost always, measured plumed rise will define the effective mixing height, however, if high surface wind speeds exist or a burn proceeds slowly plume energy will be sufficiently low that the mixing height, as calculated, will be the limitation to vertical movement.

Once the effective mixing height has been determined and upper level wind data collected the ventilation index (VI) may be calculated. The ventilation index is simply the product of the effective mixing height (in feet) and the average wind speed (in knot) through that mixed layer divided by 1000. The average wind speed is determined by averaging the surface and 1000-foot interval winds through the mixed layer. Examples of VI calculation are shown in Attachment 10.

Ventilation indices are calculated for the most recent data available for Willamette Valley sites. Thus, atmospheric temperature profiles are from NWS rawinsonde data (Salem) or aircraft soundings and observations conducted by the DEQ or the OSC. Upper level wind speed information would be available from those pilot balloon and rawinsonde sites located in the Willamette Valley, identified in Attachment 6.

3.1.4 Rainfall

Rainfall is measured at NWS observing stations and reported to the DEQ offices by teletype. In addition, rainfall gauges are collocated with OSC meteorological stations at local fire stations and other sites. The DEQ interrogates these OSC sites by radio or telephone to determine rainfall patterns and amounts. This information is then used in identifying likely high fuel moisture content areas (see section 3.3.1.), and for the institution of restrictions on burning.

3.1.5 Weather Forecasts

Forecast briefings are received from the National Weather Service office in Portland at least twice each day at 0730 and 1230. Synoptic and meso-scale meteorological patterns are discussed to assist in developing burn releases. During this briefing the NWS provides forecasts of maximum temperature, minimum relative humidity, and surface and upper level winds. In addition, variations in regional wind flow fields (development of marine air intrusions, thermal troughs, etc.) due to daily heating patterns are discussed. These briefings provide the basis for early morning grower briefing and selection of test fire sites.

Additional forecast updates are received from the NWS and the Oregon Department of Forestry Fire Weather office on an as-needed basis. Contacts with the Fire Weather office are made by telephone or radio often during periods of active burning periods.

3.1.6 Aerial Observation

Open field burning activity, including both test fires (section 3.1.7) and general or localized burning, is under direct aerial observation by DEQ management personnel. Such observation is accomplished through use of aircraft obtained under a seasonal lease, for the purpose, by the Oregon Seed Council. By maintaining essentially constant observation, immediate responses are possible (facilitated by radio communications) to changing conditions. Aerial observation is also used to make rapid, accurate assessments of plume height and trajectory which cannot be practically accomplished from the ground. Of course, use of aircraft also allows the large distances between areas of burning to be covered in a timely manner. In addition, use of aircraft facilitates:

a) Measurement of atmospheric temperature soundings on an as-needed basis;
b) Observation and precise timing of forecast weather changes; and
c) Immediate identification of micro-meteorological changes.

3.1.7 Test Fires

The aforementioned meteorological elements are good clues to predicting the nature of smoke plume activity. But the only true indicator of how these factors combined with fuel conditions interact is the test fire. Test fires are scheduled daily by the Department in areas and at times when conditions seem favorable for successful burning. The test fire components of plume rise, low level emissions, and downwind transport are examined prior to general quota releases. After general burning is authorized, then each fire effectively becomes a "test fire" to evaluate for possible further modification of burning activity.

So that atmospheric dispersion capabilities can be assessed, rather than the peculiarities of a given grower/field combination, the Department finds an "optimized" test fire to be the most practical for observations. Thus, the DEQ stipulates certain requirements regarding test fires which help reduce variability in results. These requirements are summarized as follows:

a) Field size should be between 40 and 80 acres.
b) Ignition time and general location must be as specified by the DEQ.
c) Field fuel conditions must be good--representative of the best available in the area.
d) Lighting of the field must not be hampered. Fields with irregular shapes and known fire hazards are not acceptable.
e) Best rapid ignition or strip-lighting techniques (as requested) must be used.
f) Grass types must be representative of general burning. Known slow-burning varieties are not acceptable.

With such requirements in place, the DEQ personnel can directly observe an optimal fire and make consistent estimates regarding the appropriateness of general burning.

Scheduling of test fires is accomplished by OSC personnel upon request from the DEQ. OSC personnel contact local fire districts who in turn keep lists of eligible test fire fields. Growers are contacted by the local fire district. Though location and time of ignition change from day to day all of the aforementioned requirements are implicit in requests for test fires.

In general, burning releases are made only after the results of a test fire (or perhaps several) have been observed and estimates made of plume trajectory, low level smoke amounts, and impact areas. Under circumstances when field availability (see section 3.2.1) is low but ventilation good such that smoke impacts, if any, will be minimal, test fires are not observed prior to a burning release.

3.2 Determination and Allocation of Acreage for Burning

The specific procedures and criteria for determining areas and amounts of burning are illustrated through use of flow diagrams in Attachment 9. The flow charts illustrate the basic decision-making process which must be applied each day or several times each day as weather conditions change. Though the smoke management program is based on theories of meteorological dispersion capabilities, it is an operational program and many decision criteria are empirically derived from successful burning operations.

In identifying criteria for quota releases for a given area, the burning time available for that area is also described since, in general, burning may begin when the criteria are met. Thus, no specific procedure is set out for identification of burning hours. Further, it is important to note that the decision-making procedures outlined in Attachment 9 are reviewed whenever weather conditions or significant parameters change. Thus, burning hours are best described as the period for which authorization to burn is given rather than pre-set times during the day.

Sections 3.2.1 through 3.2.5 review in a general way the basis for the decision-making procedures and criteria of Attachment 9.

3.2.1 Determination of Available Acreage and Field Conditions

During a normal season the acreage available for burning increases until harvesting is completed. Available acreage then decreases as burning is accomplished. The ability to fill an acreage quota changes in a more or less linear relationship with total acreage availability. Thus, even single quota releases are not filled very early and late in the season. The acreage available for burning at any time is monitored by the DEQ through frequent contacts with fire district officials, the OSC, growers, and by direct visual inspection. Fire district permit agents routinely report their ability to fill quotas during these early and late season periods, thus providing an estimate for Valley-wide quota usage.

The availability of acreage for burning is taken into account when the DEQ staff makes acreage releases. The procedure followed is outlined in Attachment 9. In general, the availability of acreage is needed in order to determine (a) whether fields are available and (b) to what degree quotas are likely to be filled. (See section 3.2.3.)

Much as available acreage is monitored through permit agents and OSC and DEQ field personnel so also are field fuel conditions. General estimates of fuel moisture content and amount of green regrowth are reported regularly to management personnel along with rainfall data. Also, when burning is limited to field-by-field releases, fuel conditions of the specific field are reported to the Department prior to authorization. The procedure for such individual authorizations is outlined in Attachment 9.

3.2.2 Determination of Burn Areas

Areas for burning are chosen primarily on the basis of wind direction. Though wind speed and thermal stability are important, areas of concentrated burning are usually downwind of major population areas, major highways, and busy airports. Upwind burning of these areas is allowed at a reduced level, however, when light surface winds and good vertical mixing are sufficient to maintain acceptable surface air quality. This practice is possible to a limited extent because of superior smoke dispersion under these conditions.

The potentially large number of permutations of surface and transport winds may be limited to a few regimes typically observed in the Willamette Valley. These regimes and likely areas of burning are summarized in Attachment 8. Some variation in wind flow direction occurs due to storm pattern movement and diurnal heating effects which are important in modifying burning areas. Thus, areas designated as acceptable for burning are described only generally in the attachment.

In general, areas are selected to insure rapid clearing of the Valley and to minimize possibilities of residual or drainage smoke in the Valley overnight. Thus, west Valley acreages are burned using winds with easterly components and vice versa. Good ventilation conditions, which provide smoke clearing in two to three hours may allow cross-Valley smoke transport. Under these circumstances, close tracking of low level smoke impacts is maintained to insure acceptable levels are not exceeded. Specific procedures for selecting areas for burning to protect important receptors are summarized in Attachment 9.

Wind flow fields are developed for both surface and upper levels, particularly the top of the mixed layer since the major proportion of the smoke is concentrated here. Upper level flow directions are plotted based upon pilot balloon and rawinsonde data received daily. From these plots and allowing for transverse horizontal dispersion, potential impact areas at long distances, 10 to 60 miles downwind, may be identified for any proposed burning. If such trajectories indicate impact on major cities or other sensitive areas, burning is limited accordingly in the proposed area. Thus, upwind for a given receptor (city, AQMA, priority area, etc.) includes any area where if pollutants were emitted some portion would, through advection and dispersion, reach the receptor. Often the "backward" plume concept is applied to the wind flow field to determine areas from which burning emissions would cause receptor impacts, particularly in Eugene-Springfield and Portland.

Surface wind flow fields are developed in a similar manner based upon wind observations and augmented by smoke observation and experience with local terrain-induced flow phenomena. Since information on local surface winds is available on a real-time basis, revisions to the surface flow field may be made routinely throughout each day.

Parameters affecting transverse dispersion are extremely difficult to prejudge and such estimates are based largely upon test fire results. Initial trajectory estimates assuming a one mile source width and a 30° dispersion cone have proved useful and conservative under normal burning situations.

3.2.3 Determination of Amounts of Burning (Quota Releases)

Wind speed and mixing height define the atmospheric volume available for smoke dispersal per unit time. Wind speed normally increases with height in the mixed layer which implies smoke transport is closely related to plume height. Plume rise is partially determined by surface temperature which indicates a need to maintain some minimum amount of solar heating of the surface. Burning authorizations include the quantity of burning allowed in a specified time period in an attempt to match atmospheric loading with transport and diffusion capabilities. Thus, burning authorizations via radio broadcasts may modify the quantity and duration of burning on a field-by-field or area-by-area basis.

As defined by rule, burning with a ventilation index (VI) of 12.5 or less is unacceptable and only test fires will be authorized under these circumstances. This value corresponds with a mixed layer depth of 2,500 feet and mean wind speed of five knots.

Normally, a general quota release is considered when vertical mixing (effective mixing height) exceeds 3,500 feet and transport winds are six to ten knots (VI > 25) provided wind directions are appropriate. Under such a single quota would be released for designated areas. If favorable weather conditions continue and smoke impacts remain acceptable, under air quality review procedures additional quotas may be released to provide an "even flow" of burning.

Multiple quota releases are not considered except when VI values exceed approximately 45. Under such conditions, two quotas of acreage may be sustained at all times during the burning period. Again, the continuation of such conditions may allow additional quotas to be released.

Good ventilation conditions are sometimes accompanied by strong surface winds (> 15 knots). Under these circumstances, acreage releases described in the previous paragraphs are reduced (often to zero) due to the excessive surface level smoke created. (See section 3.1.2.) Test fires are relied upon to estimate potential impacts under such circumstances.

When limited overall ventilation conditions exist (12.5 < VI < 25), but wind directions are appropriate for minimum impact in some areas, area-by-area or field-by-field burning of acreage may be authorized and conducted under close observation by the Department. Since the main objective of such burning is to

avoid direct impacts on sensitive areas, no general acreage limits are applicable. Acreage releases and their locations are authorized directly by the aerial observer or, at his instruction, by local fire district personnel. Under these circumstances burning amounts are limited so that residual smoke and smoke entrained in downslope drainage winds will not accumulate in the Valley.

Upon occasion, other factors are more significant restrictions on the potential acreage burned than a quota limitation. Specifically, time for burning may be limited by the Department or an advancing, precipitating, storm front. Likewise, sufficient acreage may not be ready for burning when the quota is released (see section 3.2.1). Under these limited circumstances the Department may make acreage releases which would not otherwise be considered. For example, the DEQ may release two quotas when only one quota would normally be considered. Such releases are designed to prevent an unnecessary localized limitation on burning but with the knowledge, based upon review procedures identified in Attachment 9, that excessive amounts of burning will not be completed.

3.2.4 Determination of "NO BURN" Areas

When optimum ventilation conditions exist such that burning is allowed over large areas, the smoke management task, in part, is to identify specific areas in which burning is not appropriate. Typically, these areas are within a short distance directly upwind of a highway, town, or airport, however, long distances must be considered when impact on Eugene and other major cities is a potential. Continuous aerial and surface surveillance and radio communication are used to tailor burning activities to avoid specific area smoke impacts. Burning authorizations instruct fire districts to cease or curtail permit issuance and require that permit holders discontinue lighting fields when those activities are impacting smoke-sensitive areas. No general burning is released in areas upwind of the cities of Eugene and Portland.

3.2.5 Modification of Area and Amount of Burning

At stated in the introduction to this section adjustments are made to the burning activity throughout the day through radio advisories. Evolving weather and fuel conditions require modified levels of activity such that air quality criteria are met and maximum burning may be conducted under optimal conditions. Continuous aerial and surface based management personnel, coordinated through radio communications, provide information for making decisions regarding the need for modifications. This daily review process is illustrated in Attachment 11.

3.3 Control of Emissions

Procedures and criteria for minimizing emissions are required by rule. The operational decision making, as it affects burn releases, progress is outlined in Attachment 9. The procedure is closely tied to the rules and is outlined here in order to identify the process for authorizing the burning of "dry" fields.

3.3.1 Burning Restriction Due to Rainfall

Burning is prohibited in any area when fuel moisture content is sufficiently high to cause excessive ground-level smoke as determined by the DEQ observations. An area restriction on burning is also established when it is raining. Further, burning is prohibited for one drying day (24-hour period with no precipitation and a minimum relative humidity of 50 percent or less) for each 0.10 inch of rainfall for up to four days. Rainfall data for determination of rainfall restrictions is received from NWS surface observation sites and all OSC meteorological sites identified on Attachments 6 and 7, respectively. Beginning and ending times for rainfall are noted by the NWS in hourly observation. For identification of these times in other areas the Department relies upon reports of fire district permit agents or other observers. When rainfall is measured but not observed, it is assumed to have ended at 7:00 a.m., time of the morning meteorological data review. Either the observed end of rainfall or this 7:00 a.m. time identifies the start of a drying day provided relative humidity restrictions are eventually met.

Due to the number of rainfall sites non-uniform rainfall patterns are readily determined. Rainfall estimates are made for remote areas based on nearest recorded amounts. The basic rainfall restriction is not enforced when dry areas are identified due to such non-uniform precipitation patterns. Areas having dry fields are checked by use of test fires in that area or by qualitative inspection by field inspectors or permit agents.

After rainfall, a field's drying time may be markedly reduced by tedding or fluffing the loose straw. Rainfall restrictions on burning may be waived under these circumstances provided:

a) At least two hours of drying time (RHL 50%) since the field was treated;
b) The local permit agent or DEQ field inspector judges the field fuel conditions to be essentially equivalent to those that would prevail after normal drying day requirements had been met; and
c) Burning is completed in compliance with all other field burning regulations.

Relative humidity (RH) assessments, as they affect the determination of drying days, are based on NWS surface observations. Interplations are made for areas remote to those sites. RH measurements are also taken, using phychrometry, at local fire districts to determine whether the 50 percent minimum RH requirement is met. This information is reported to the DEQ by radio or telephone.

Emissions are further reduced under present rules by prohibiting burning under north winds when the relative humidity exceeds 50 percent and similarly under south winds at 65 percent as listed in the rules. Such RH determinations are again based upon NWS and OSC meteorological site measurements. In addition, the Department has real-time access to sensible and dewpoint temperature measurements from telemetered meteorological sites (Attachment 7). Thus, RH is monitored on a real-time basis and closely tracked. Burn authorizations may be immediately issued or withdrawn in order to comply with existing rules.

3.3.2 Restriction on Burning Techniques

When fuel and weather factors are appropriate, a perimeter field ignition pattern is specified in the burning authorization message so that ground level smoke is minimized. In general, the results, in terms of effective plume development (with minimum ground level smoke), are enhanced by rapid ignition methods. Hence, the current rule language requiring all sides to be lit "as rapidly as practicable." For most farm applications this means use of multiple lighting vehicles for field ignition. Though the number of igniters needed for successful ignition varies with field shape and meteorological and fuel conditions, experimentation has shown one vehicle per side of field to work successfully for field sizes typical to the Willamette Valley. On smaller fields this basic relationship need not be met since successful perimeter lights have been demonstrated with fewer vehicles on sufficiently small fields. For purposes of interpreting as rapidly as practicable, the DEQ would in general require:

a) A minimum of backfiring, both in length and duration; sufficient only to protect against adjacent fire hazard; and
b) Rapid accomplishment of the ignition of the field perimeter using as many vehicles or other igniting units as necessary to simulate efforts by Oregon State University in its rapid ignition experiments. Representative ignition times are shown below:

Field Size (acres)	Ignition Time (minutes)
84	4
101	2
114	3
173	3
128	4

The DEQ would assess other lighting systems (dragline systems, helicopter drip torch, etc.) on individual bases to insure ignition speed would be equivalent to that provided by the use of land vehicles as outlined above.

Since fire control may be most difficult with the perimeter ignition, a waiver of this requirement is granted when specifically requested by local fire officials after they have judged that an unacceptable fire hazard exists. In the event of this waiver, conventional headfiring is used which includes backfiring a protective margin away from the fire hazard, e.g., timber, brush, buildings.

Into-the-wind strip-lighting is specified in the burning release when burning is allowed within the first 24-hour period after restrictions due to rainfall have been lifted. This technique is also required when fuel or atmospheric factors are projected (or verified by test fire) to prevent plume rise from exceeding 3,500 feet.

In all burning techniques rapid ignitions and rapid mop-up procedures are actively supported both in rule and procedurally in order to minimize ground level smoke. Education in rapid ignition techniques and results and methods to minimize back-firing is provided to growers and fire districts prior to each field burning season.

3.4 Use of Air Quality Data

Specific procedures and criteria for the use of air quality information in the regulation burning are identified in Attachment 9. The criteria are based upon air quality monitoring and subsequent impact analysis, visibility-related safety requirements for airports and highways, and aesthetic values judged from citizen input.

3.4.1 Visibility

Hourly visibility observations are taken at Portland, Hillsboro, Salem, and Eugene, and received at the DEQ office via NWS teletype. This data is used to help identify ambient air quality, ventilation characteristics, and smoke intrusions. In general, visual range observations of ten miles or less not affected by field burning smoke is cause for prohibition of proposed burning activity in the areas so affected.

Nephelometers are used as reliable indicators of smokiness. Data from a nephelometer in Eugene, as well as other sites (Attachment 6), will be telemetered to the Eugene office. Trends in nephelometer values or "b-scat" indicate smoke intensity and overall ventilation capabilities. Visibility and "b-scat" may be related such that nephelometer-instrumented sites and the airports form a complementary data network.

Since nephelometers are insensitive to ambient humidity, sun angle, and darkness, they have prevailed over visibility observations as the standard by which smoke intrusions are analyzed. In general, smoke intrusions are identified and analyzed according to rule whenever an increase in b-scat value of 1.8×10^{-4} or greater occurs. Analysis of the contributing source is based on knowledge of source activity and plume trajectory. During the active field burning season (July 15 through September 15) this system works well since other smoke source activity is limited and background fine particulate levels are low. In addition, field burning smoke intrusions generally result in abrupt and significant changes in fine particulate (and light scattering) levels. During this period identification of field burning as a significant source of an intrusion requires little judgment.

After September 15, atmospheric stability and other source activity, notably slash burning and space heating, increase. In general, higher background particulate levels prevail and wind flow fields are weaker making source identification more difficult. If, after normal analysis is completed, a single source is not identified, estimates are made of various source contributions based upon proximity, relative emission levels, atmospheric temperature profile and source elevation, and, if the impact is long lasting, diurnal changes in pollutant levels. In these instances where the exact cause is not clear and

estimates are made of source contribution, field burning is judged to be a significant contributor if alone it would have caused an increase in nephelometer readings of 1.8×10^{-4} b-scat units. Therefore, whenever nephelometer values increase or, from visual observations, are predicted to increase by 1.8×10^{-4} b-scat or more at any Eugene-Springfield site, burning upwind of the area will be prohibited.

When field burning has been adjudged to be a significant contributor to a smoke intrusion, "hours of smoke intrusions" are calculated to determine whether minimum effective mixing height requirements must be implemented. The procedure for calculating "hours of smoke for the Eugene-Springfield area" is outlined below:

A. For each site (Eugene downtown and Springfield downtown):

1. Average the three hourly nephelometer readings immediately prior to the hour in which the intrusion began to establish the "background" level.
2. Count the total number of hourly readings which are greater than the background level by 5.0×10^{-4} b-scat (4.0×10^{-4} b-scat if the intrusion occurred after September 15) or more.
3. Count the total number of hourly readings which are greater than the background level by 1.8×10^{-4} b-scat or more.
4. Add the hours determined in steps 2 and 3 to the total hours of smoke intrusion from any previous intrusions that season.

B. Average the cumulative hour totals calculated in step A.4. for the two sites.

C. Compare the value calculated in B with Table 2, OAR Chapter 340, Section 26 to determine the minimum allowable effective mixing height for burning.

Once the minimum allowable effective mixing height is established general burning will remain prohibited until such time as calculated mixing height or observed plume rise indicate better vertical mixing conditions exist. Regardless of mixing height minimum rules allow for up to 1,000 acres to be burned on a marginal day. Such burning would be closely monitored by management personnel with releases made on an area-by-area or field-by-field basis.

3.4.3 Twenty-Four Hour Total Suspended Particulate (TSP) Projections

Since field burning is a major source of fine particulate its effects on TSP levels is closely tracked. In general, this is accomplished through use of the aforementioned nephelometer network. Nephelometers are located in all TSP non-attainment areas as well as Lebanon, Coburg, Halsey, Junction City, and Corvallis. Projected TSP violations from any of these sites (based upon site-by-site b-scat-hour/TSP correlations) results in curtailment of burning upwind of the affected areas. Telemetering of all of these sites, scheduled for completion prior to the 1980 season, will allow real-time surveillance of all areas in the Willamette Valley (attainment and non-attainment) for violations.

In addition to nephelometers, automatic particle monitoring (APM) in Eugene-Springfield and Portland provide TSP data for those areas. Projected violations of 24-hour TSP standards, based upon APM hourly readings, also causes prohibition of burning upwind of the two cities.

3.4.4 Air Stagnation Advisories

The NWS provides a meteorological assessment of atmospheric ventilation by issuing dispersion forecasts. These forecasts include mixing height and transport wind speed and direction. An Air Stagnation Advisory is issued by the NWS when the following minimum ventilation criteria are imminent:

a) Less than 2,000 feet of mixing height;
b) Less than 5 mph wind speed;
c) No precipitation; and
d) A continuation of the above conditions for 36 hours.

This advisory serves as an indicator that little or no field burning may be successfully accomplished. Field burning is, therefore, prohibited during an Air Stagnation Advisory period.

3.4.5 Episode Alert (Ozone)

Ambient concentrations of ozone are continuously monitored in the Willamette Valley. Alert levels have been established for this pollutant and notification procedures have been developed to warn smoke managers when alert levels occur. When alert conditions are in effect, field burning activities are suspended to avoid aggravation of the potentially hazardous air quality conditions. Thus, under present regulations field burning will be prohibited whenever ozone levels reach 0.10 ppm.

List of Attachments

Attachment No.	Description
1	Weekly Fire District Report Form
2	DEQ Reigstration/Application Form
3	DEQ Permit Form
4	Burning Release Examples
5	Map of Radio Locations
6	Map of NWS Office Station
7	Map of DEQ and OSC Meteorological Sites
8	Table of Wind Regimes
9	Determination of Acreage Release
10	Calculation of Ventilation Index
11	Daily Operation Flow Chart

Do not write in this box.

F.D. _____

FIELD BURNING PROGRAM
AIR QUALITY DIVISION
Department of Environmental Quality
16 Oakway Mall
EUGENE, OREGON 97401 686-7837

WEEKLY OPEN FIELD BURNING REPORT

_____ Fire Department or District

_____/_____ to _____/_____ Page _____ of _____
(month/day) (month/day)

This report is to be completed and returned to the field burning office in Eugene weekly. The report must be completed and postmarked no later than Monday following the calendar week reported on.

	REGISTRATION NUMBER	LINE NUMBER	VALIDATION NUMBER Mo / Day / Time	ACRES BURNED	COMMENTS
1.			/ /		
2.			/ /		
3.			/ /		
4.			/ /		
5.			/ /		
6.			/ /		
7.			/ /		
8.			/ /		
9.			/ /		
10.			/ /		
11.			/ /		
12.			/ /		
13.			/ /		
14.			/ /		
15.			/ /		
			Total		

Fire district annual allocation _____

Total acres burned to date _____

Remaining allocation to be burned _____

Signature _____
(permit agent)

Date _____

STATE OF OREGON

DEPARTMENT OF ENVIRONMENTAL QUALITY
1979
FIELD BURNING REGISTRATION/APPLICATION FORM

FIELD REGISTRATI NO. _____

GROWER APPLICANT:_____ PHONE:_____
ADDRESS:_____ CITY:_____ ZIP:_____
FIRE DISTRICT:_____ PHONE:_____

	<---FIELD LOCATION---> TOWNSHIP	RANGE	SECTION	FIELD	ACRES	TYPE* (P/A/C)	CLASS** (P/R)	VALIDATION NUMBER MO./ DAY/ TIME/ ACRE
1	T-____ N S	R-____ E W	S-____	F-_____	_____	___	___	__/__/__/__
	FIELD DESC_____				FEE PAID_____			DATE_____
2	T-____ N S	R-____ E W	S-____	F-_____	_____	___	___	__/__/__/__
	FIELD DESC_____				FEE PAID_____			DATE_____
3	T-____ N S	R-____ E W	S-____	F-_____	_____	___	___	__/__/__/__
	FIELD DESC_____				FEE PAID_____			DATE_____
4	T-____ N S	R-____ E W	S-____	F-_____	_____	___	___	__/__/__/__
	FIELD DESC_____				FEE PAID_____			DATE_____
5	T-____ N S	R-____ E W	S-____	F-_____	_____	___	___	__/__/__/__
	FIELD DESC_____				FEE PAID_____			DATE_____
6	T-____ N S	R-____ E W	S-____	F-_____	_____	___	___	__/__/__/__
	FIELD DESC_____				FEE PAID_____			DATE_____
7	T-____ N S	R-____ E W	S-____	F-_____	_____	___	___	__/__/__/__
	FIELD DESC_____				FEE PAID_____			DATE_____

<OATH OR AFFIRMATION>

IN ACCORDANCE WITH ORS 468.465 AND OAR CHAPTER 340 SECTION 26-020(2)(D), IF THE CEREAL FIELDS LISTED ON LINES_____ ABOVE ARE OPEN BURNED, I, T UNDERSIGNED HEREBY CERTIFY UNDER OATH OR AFFIRMATION THAT THE NEXT CROP PLAN ON SAID FIELD WILL BE _____ WHICH IS A SEED CROP OTHER THAN A CEREAL GRAIN, HAIRY VETCH, OR FIELD PEAS AND REQUIRES FLAME SAN TATION FOR PROPER CULTIVATION. I UNDERSTAND THAT FAILURE TO PLANT A CROP AS CERTIFIED COULD RESULT IN A FINE OF $25 PER ACRE. IF THE SEED CROP SO PLANT FAILS TO GROW THROUGH NO FAULT OF MY OWN, I MAY APPLY TO THE DEQ TO PLANT CONTRARY TO THIS CERTIFICATION.

REGISTERED ACRES _____ X $1.00/ACRE = $_____

_____ _____
APPLICANT SIGNATURE DATE

_____ _____
FIRE DIST. REP. SIGNATURE DATE

*TYPE PERENNI
ANNUAL
CEREAL
**CLASS PRIOR
REGUL

Department of Environmental Quality

PERMIT TO OPEN FIELD BURN

(Not valid until acreage fees are paid and validation numbers are obtained)

Pursuant to Oregon Revised Statutes 468.458:

ne grower applicant listed on the reverse side hereof (hereinafter referred to as permittee") is authorized to open burn the fields listed on the reverse side hereof, ubject to the following conditions, limitations, terms and requirements.

. This permit shall be effective to authorize open burning of each field listed on the reverse side hereof only upon:
   a. Prior payment by the permittee of the required acreage fees for that field and recording of the date of payment and the initials of the actual recipient (County Court or Board of County Commissioners or fire chief of a rural fire protection district or his deputy representative, hereinafter called the "fire chief") of the payment upon the reverse side hereof, and
   b. Prior procurement by the permittee of a validation number for that acreage from the fire chief and the recording of that number on the reverse side hereof. A validation number shall be effective to authorize an acreage to be open burned only on the day the validation number is issued.

2. This permit (after payment of acreage fees and issuance of a validation number) authorizes open field burning subject to the following conditions:
   a. The permittee shall also obtain a fire permit from the local fire chief.
   b. The permittee shall at all times maintain this permit at the site of operation during burning or be able to readily demonstrate authority to burn.
   c. The permittee shall notify the fire chief not later than the day following the issuance of a validation number if the field was not burned. The permit may be revalidated at a later date only if the above cancellation notification is given.
   d. The permittee is prohibited from conducting open field burning in any location or at any time other than that described and authorized by this permit.
   e. The permittee shall retain this permit for one year from the expiration date shown below and shall produce the same for inspection by the Department upon request.
   f. The permittee shall monitor and burn in accordance with Department open field burning radio announcements and shall cease ongoing open field burning as rapidly as possible when a stop burning order is issued by the Department.

3. This permit shall remain in effect until such time it is used, expires or is modified or revoked by the Department.

4. No validation number shall be issued for any registered field which has been withdrawn or deleted from the registration and has therefore been lined out on the reverse side hereof.

5. The specific listing of requirements, terms, limitations and conditions contained herein shall not relieve the permittee from complying with all other laws such as but not limited to rules and regulations of the Department, Fire Districts and other pertinent regulations.

6. The Registration/Application form and the information provided thereon, as shown on the reverse side of this permit form, is hereby incorporated in and made part of this permit.

Expires June 30, 1980

William H. Young

WILLIAM H. YOUNG, Director

NOTICE

All field burning permits to be issued pursuant to rules of the Environmental [illegible] subject to all governing laws, including

Attachment 4

Burning Release Examples

Sample burning authorizations which include restrictions on burning by area, time, and ignition technique are given.

Example:

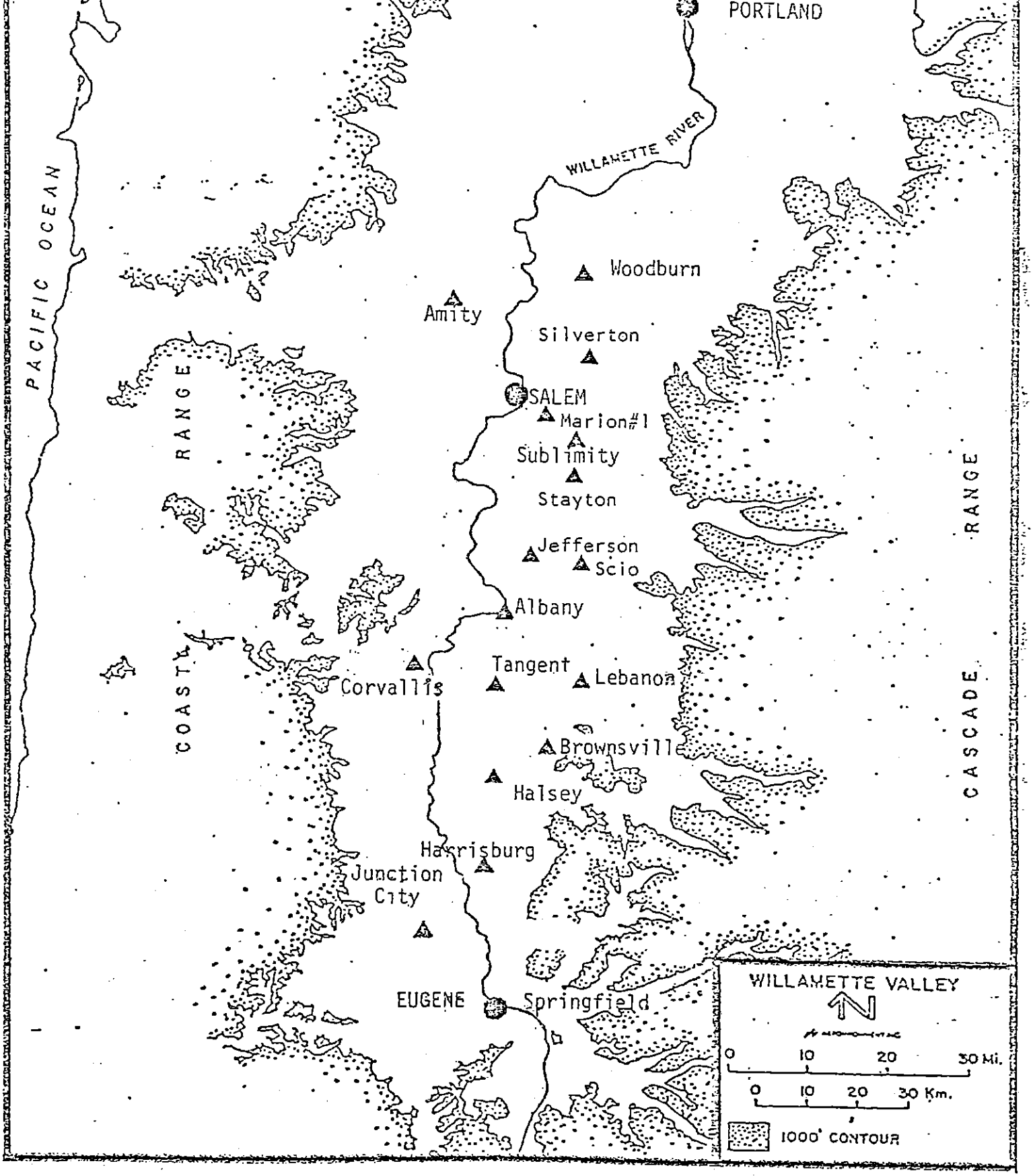
"This is the DEQ with the field burning advisory for August 22 at 2:00 p.m., PDT. Marginal conditions exist and one quota is authorized for burning in Clackamas and Marion Counties. All fires are to be out by 6:00 p.m., PDT. Into-the-wind strip-lighting is required on all annual and cereal fields due to a limited vertical mixing height. Burning is prohibited in all other permit jurisdictions." (Followed by a weather description and repeat of the message).

Example:

"This is the DEQ with a field burning Advisory for August 9 and 5:00 p.m., PDT. Prohibition conditions are now in effect for all areas east of Interstate 5 in the Lebanon, Albany, and Tangent fire districts. All fires in these areas are to be completed or extinguished as soon as possible and no additional fires are to be lit. All unused permits are to be returned to permit agents. All other areas now burning may continue until 6:00 p.m., PDT." (Followed by a weather description and repeat of the message.

Example:

"This is the DEQ with a field burning advisory message for July 26 at 1:30 p.m., PDT. Marginal conditions exist and one quota is released for Marion and Clackamas Counties, east of Highway 99E. All fires are to be out by 5:30 p.m., PDT. Into-the-wind strip-lighting is required on all annual fields except 'fluffed' fields may use perimeter lighting methods. Burning remains prohibited in all other permit jurisdictions." (Followed by weather description and repeat of message.)

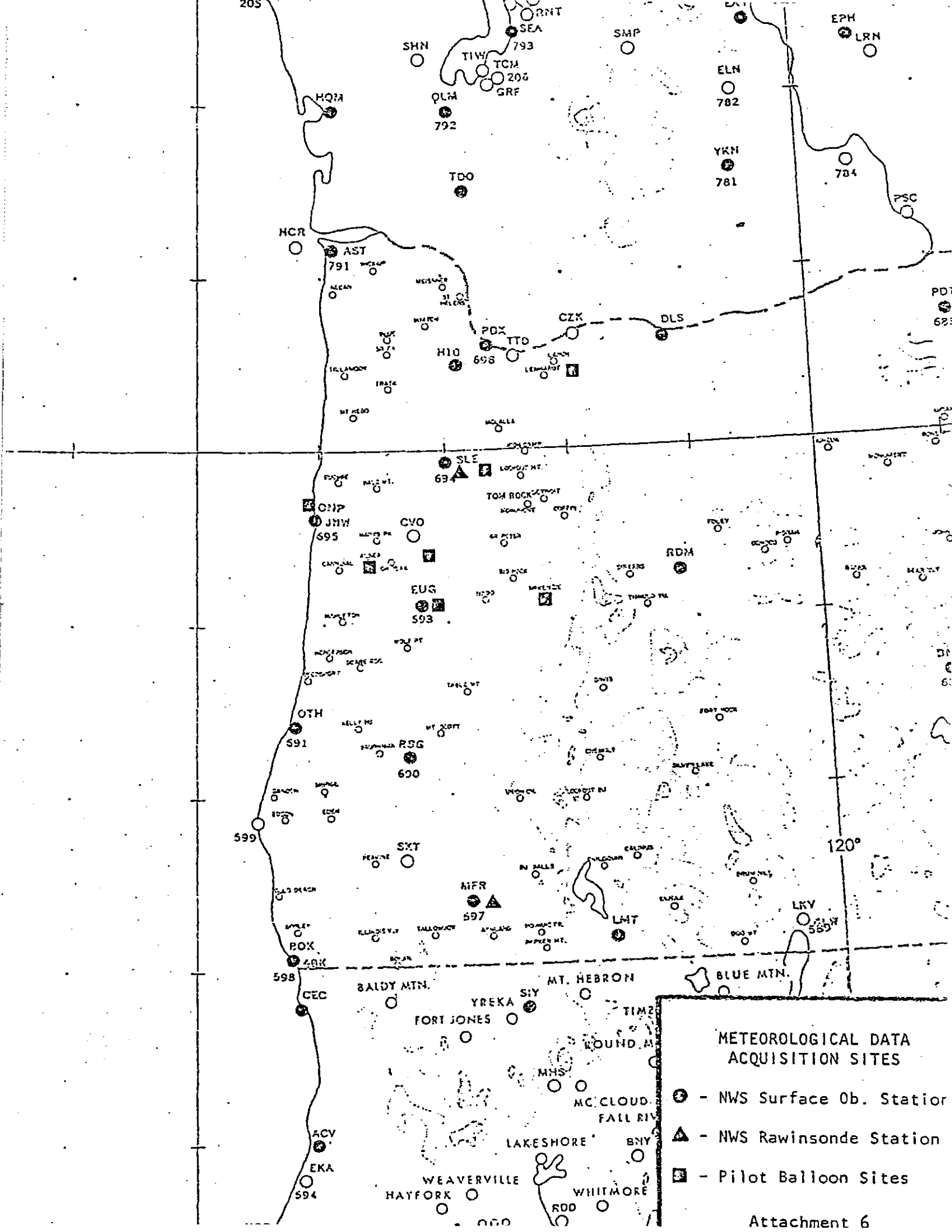


OREGON SEED COUNCIL FIELD BURNING RADIO NETWORK

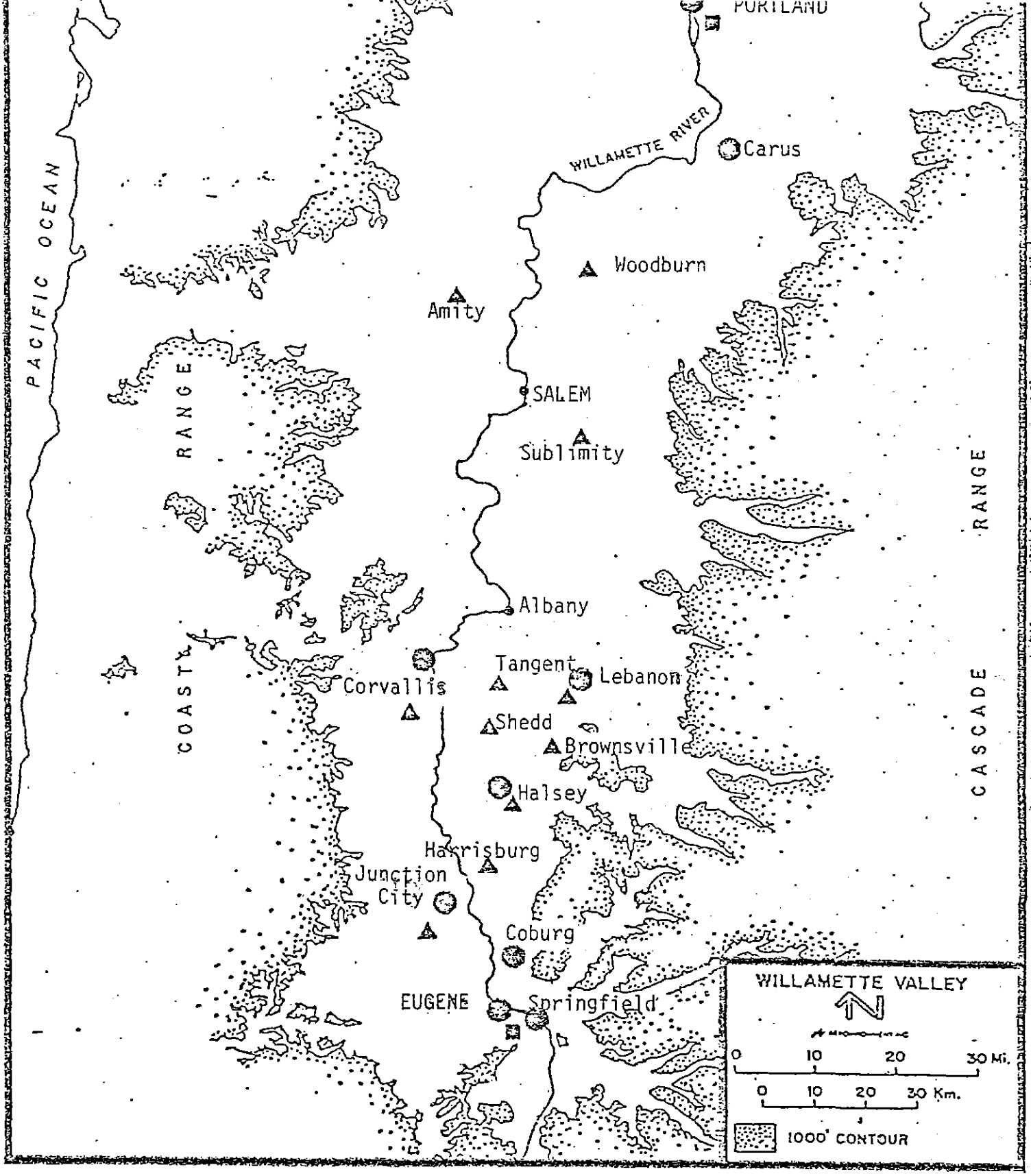
● - Base Station Transmitters (DEQ and OSC offices)

▲ - Fire District Transmitters (Local permit agent offices)

Attachment 5



Attachment 6



SURFACE WEATHER AND AIR QUALITY
DATA ACQUISITION SITES

△ - Oregon Seed Council Meteorological Site

⊙ - DEQ Nephelometer and Meteorological Site (telemetered)

▣ - DEQ Automatic Particle Monitoring Site

Attachment 7

Attachment 8

Wind Flow Regimes and Associated Areas of Field Burning

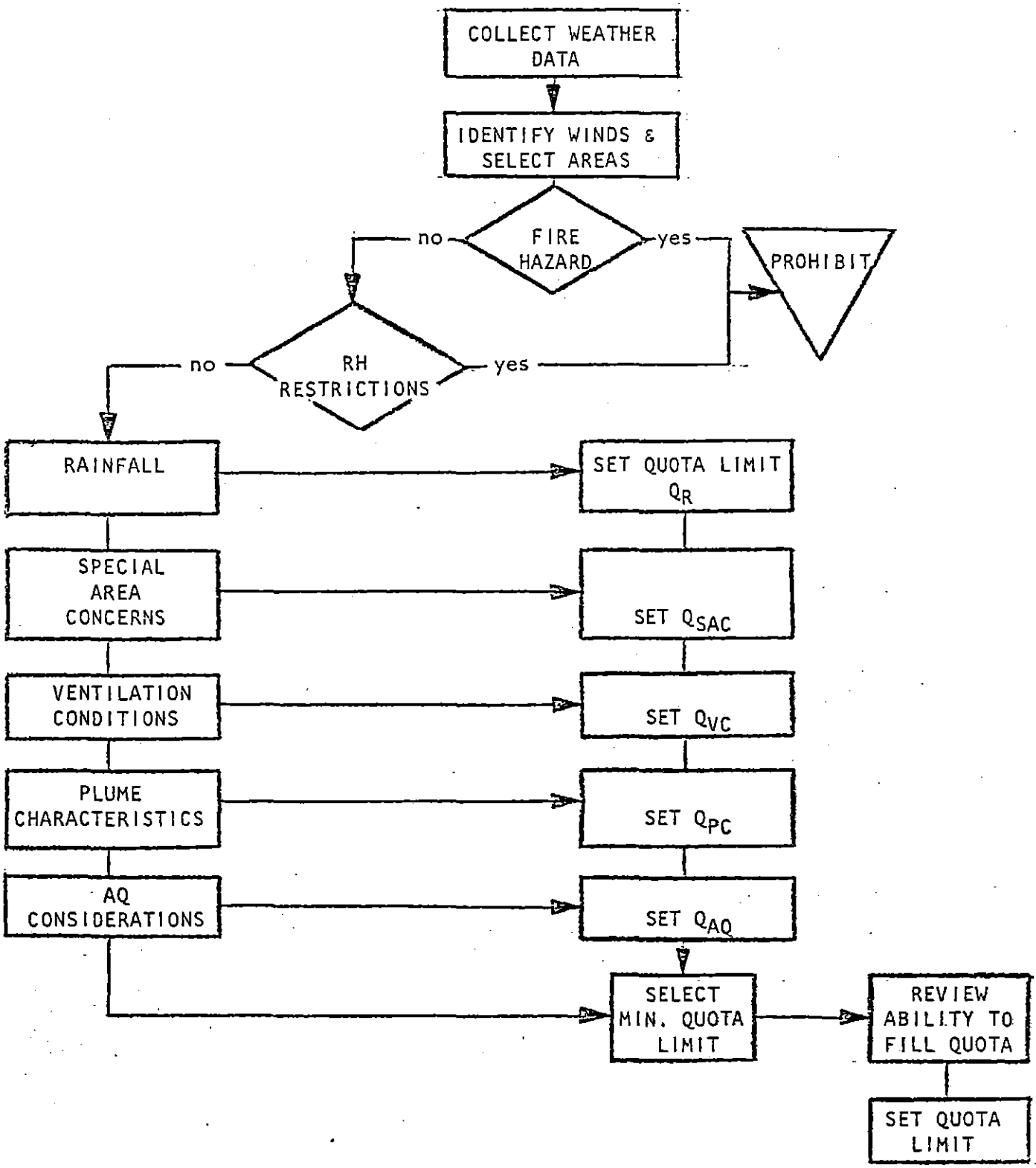
Transport Winds Direction	Surface Wind Direction	Generalized Area of Burning
North (≈340-20°)	North (≈340-20°)	Due West and South of Eugene-Springfield
North (≈340-20°)	Northeast (≈10-30°)	West of 99 in Lane County South of Eugene-Springfield
Northeast (≈10-30°)	Northeast (≈10-30°)	Washington, Polk, Yamhill, Benton, and Lane Counties, West of 99W
Southwest (≈210-270°)	Southwest (≈210-270°)	The Willamette Valley[1]
South (≈160-210°)	Southwest (≈210-270°)	The South Willamette Valley and Eastern Marion County[1]
Northwest (≈270-330°)	Northwest (≈270-330°)	North Willamette Valley [1] [2]
N. Northwest (≈330-360°)	Northwest (≈270-330°)	Eastern Marion and Clackamas Counties
West (≈200-320°)	West (≈250-300°)	Drainage Areas of East Willamette Valley; Areas Near and North or South of Lebanon

[1]Does not include areas directly upwind of major cities
[2]Areas of Polk County may be restricted

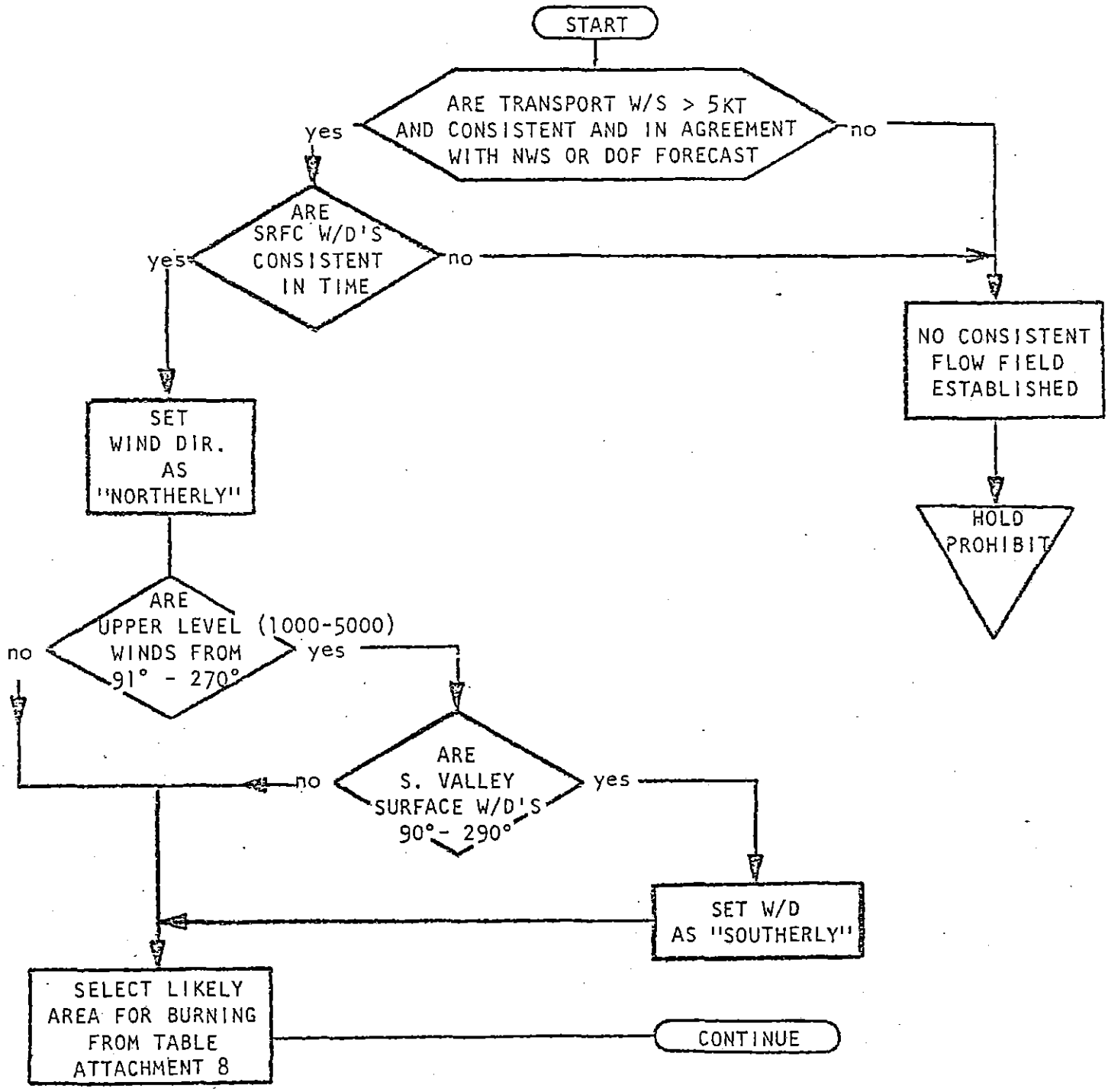
Attachment 9

DETERMINATION OF ACREAGE RELEASE

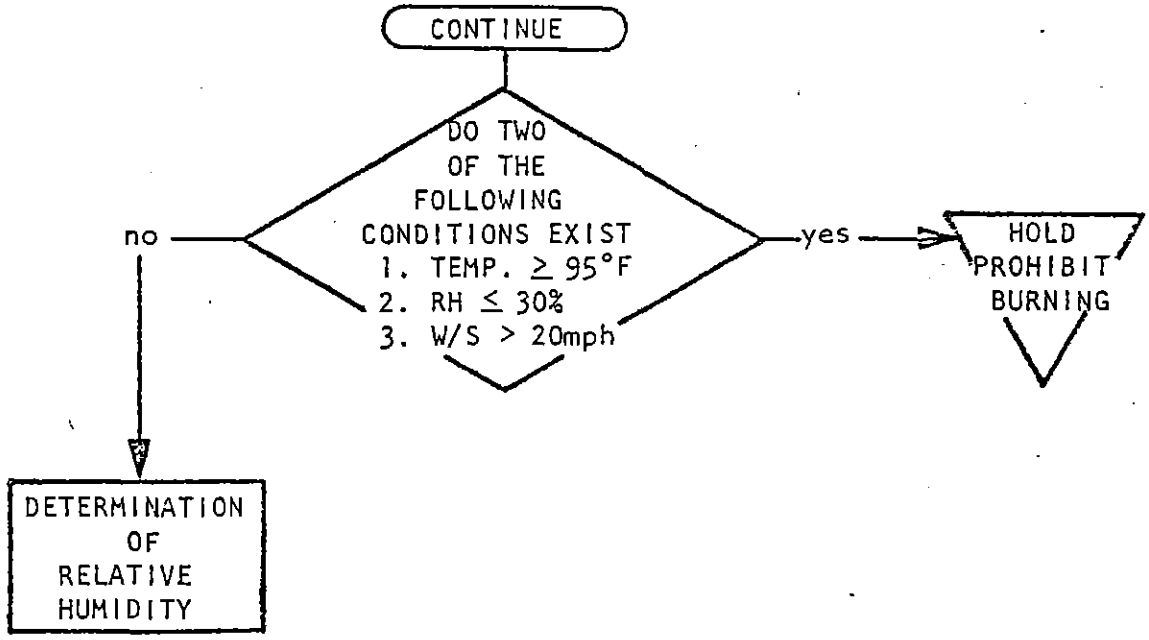
Determination of Acreage Release



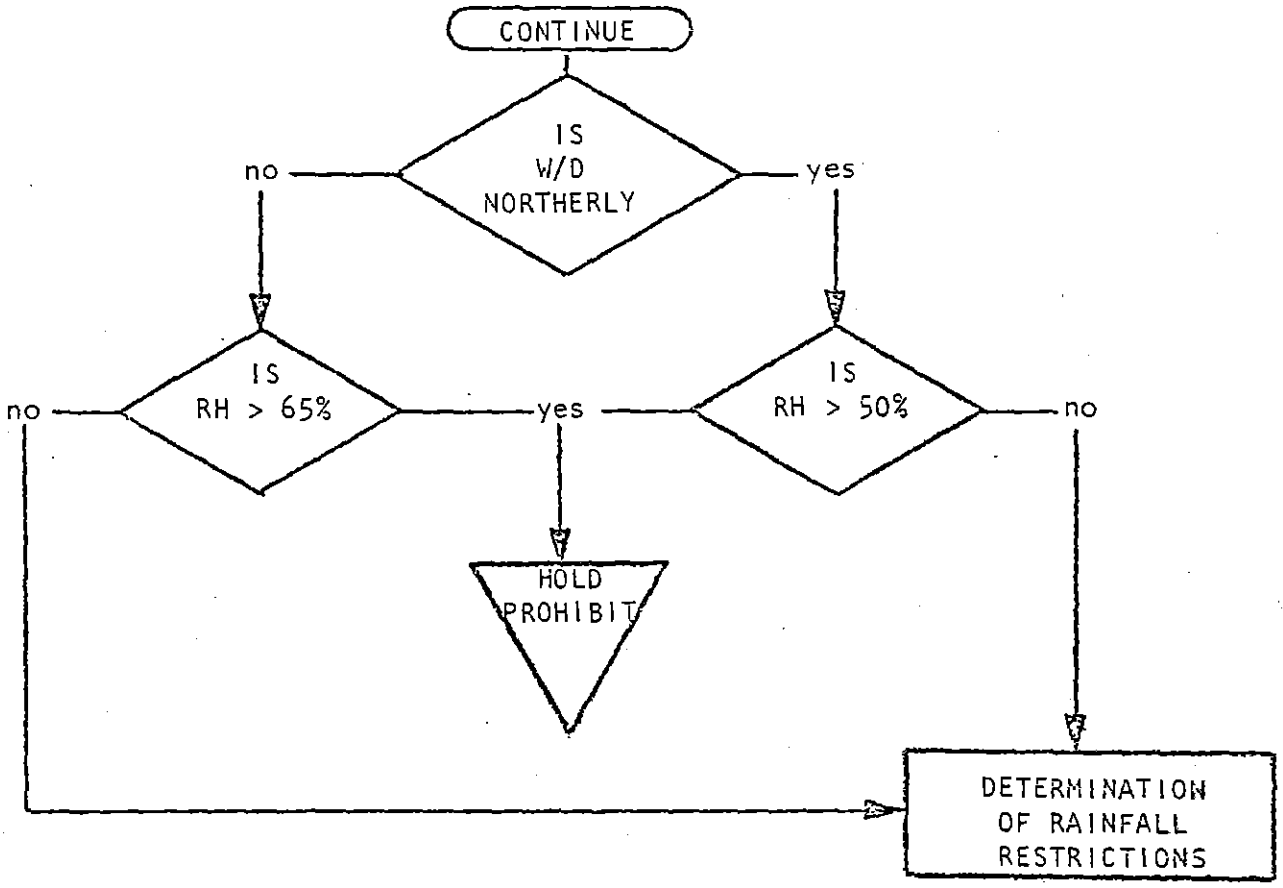
Determination of "Northerly" or "Southerly" Winds



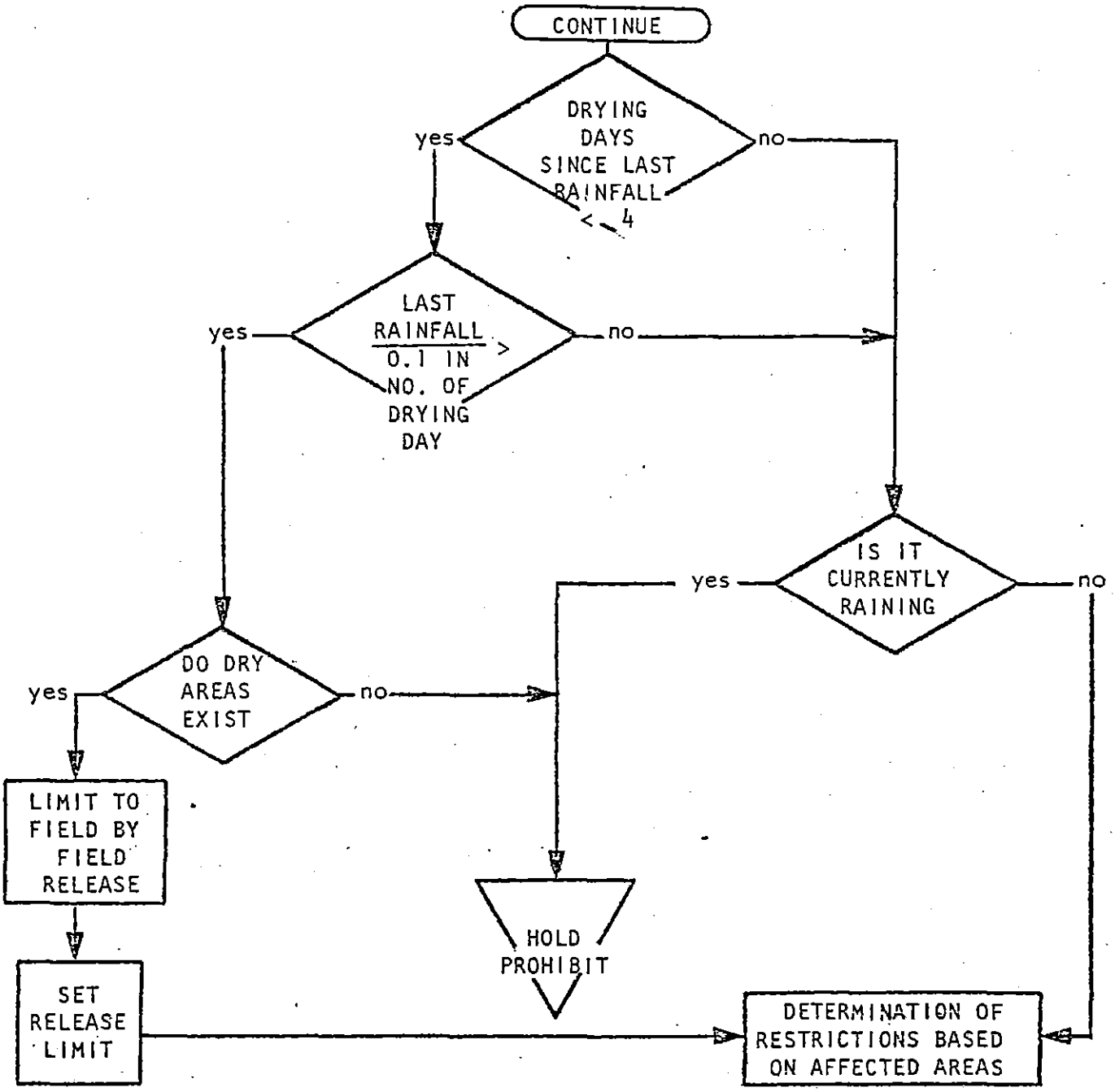
Determination of Fire Hazard



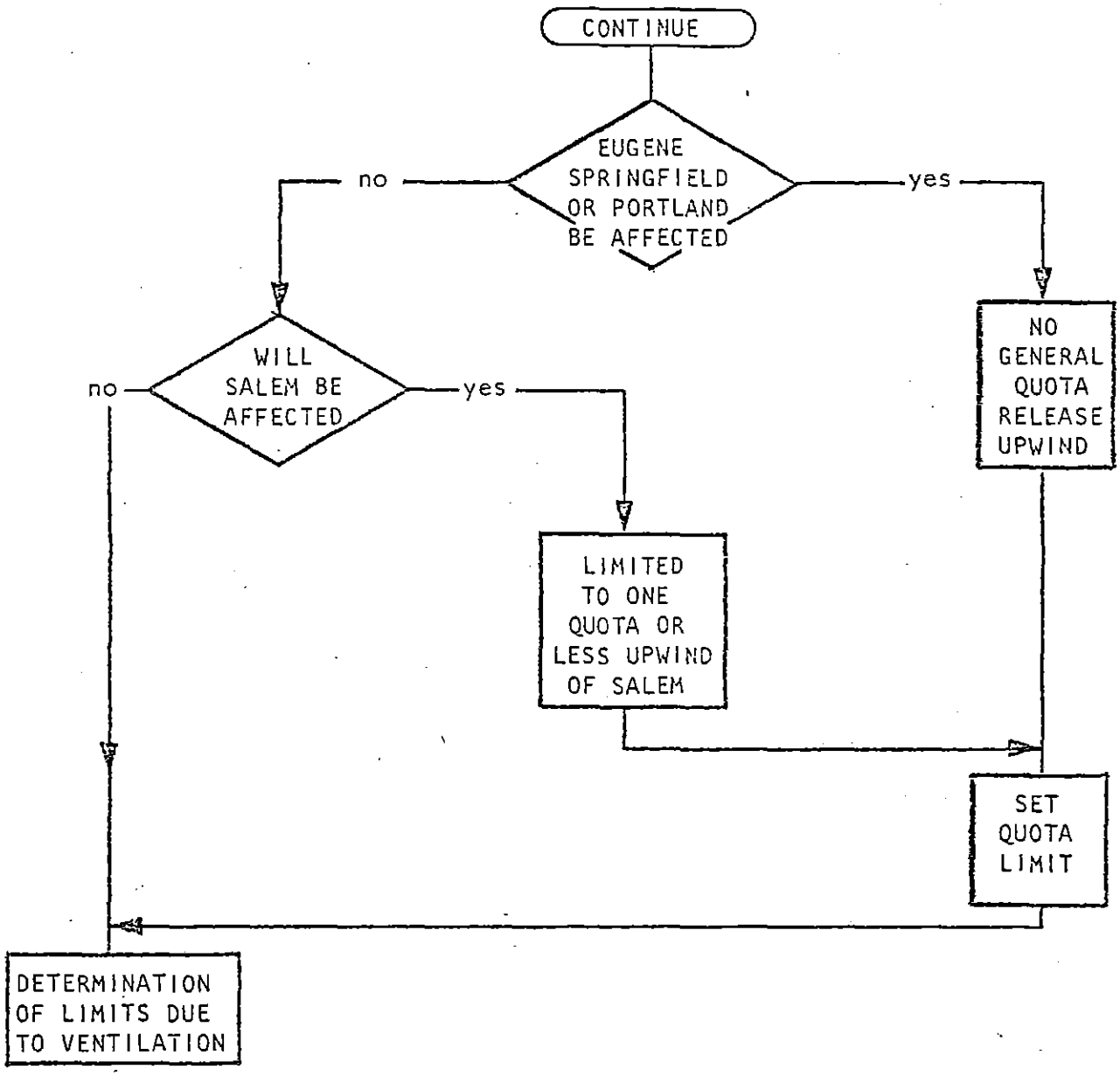
Determination of RH Restriction



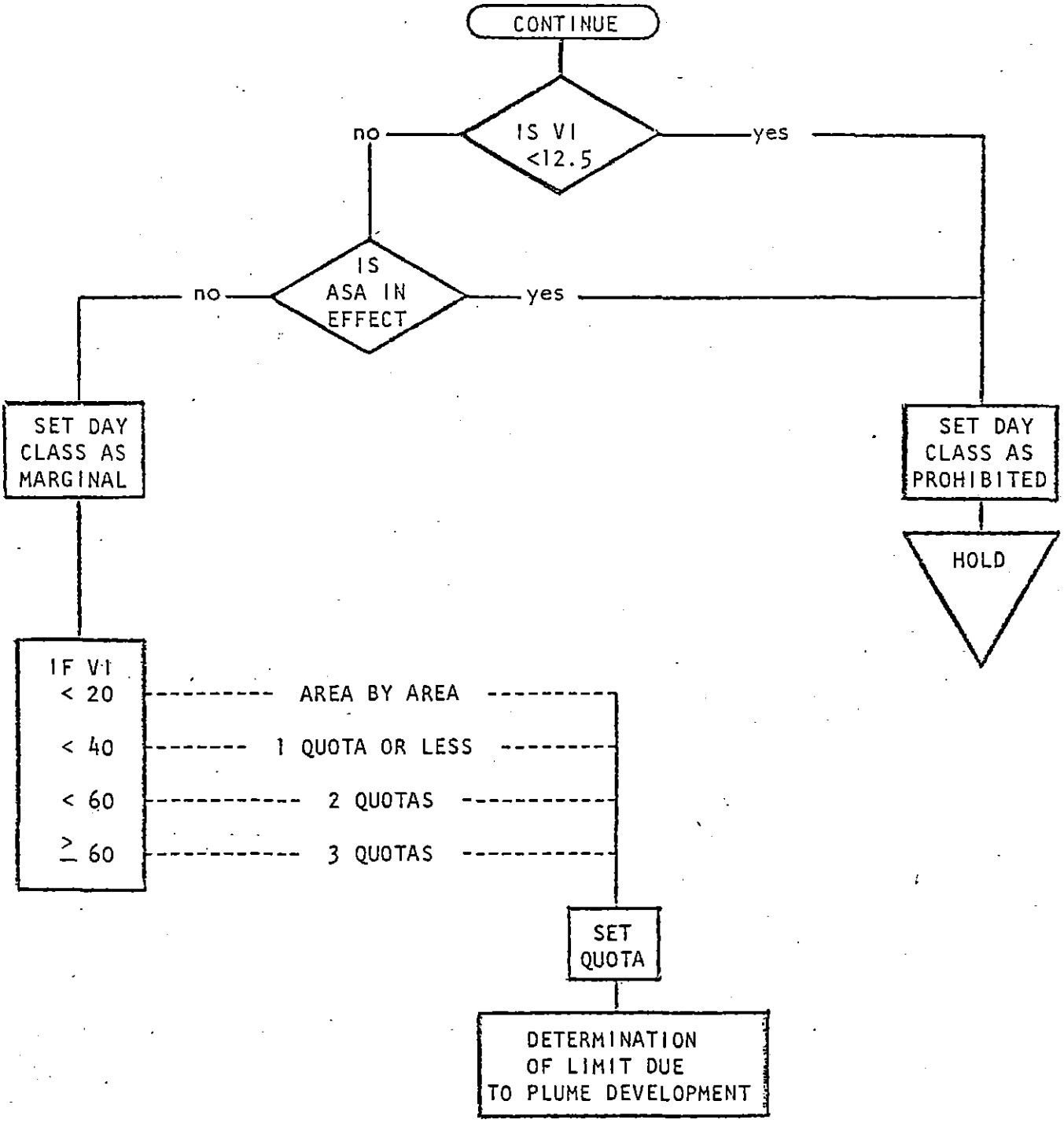
Determination of Rainfall Restrictions



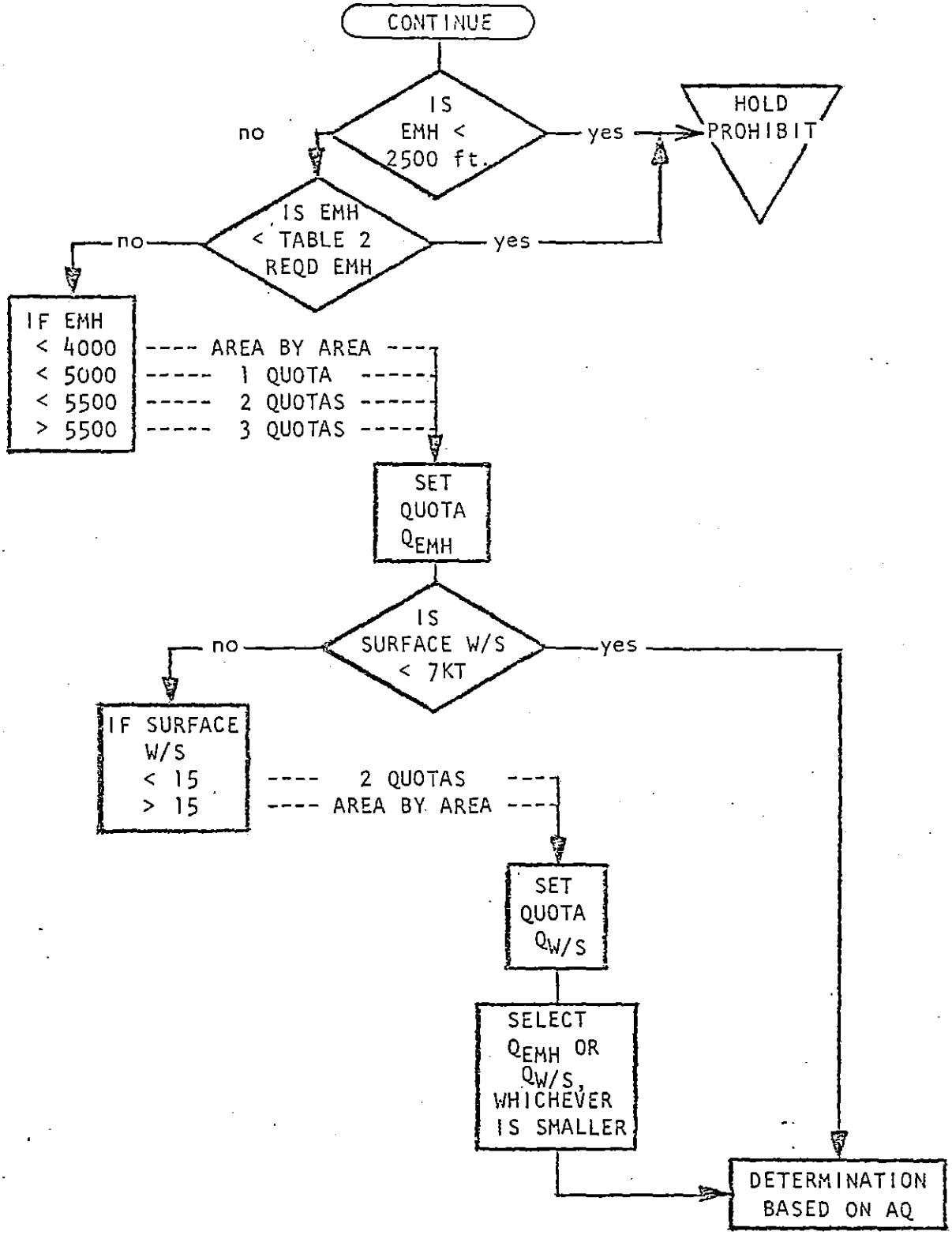
Determination of Limitations
Due to Affected Areas



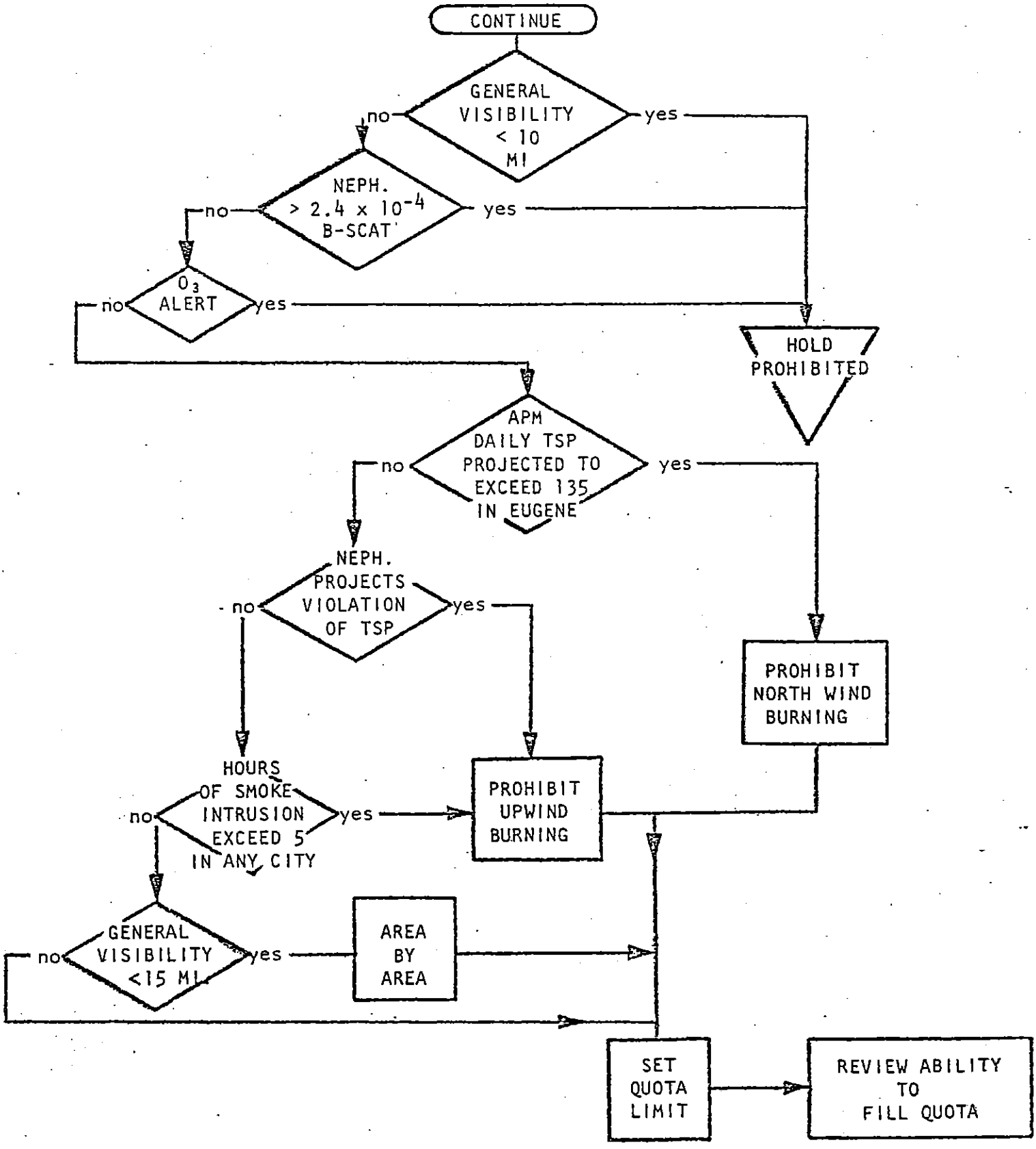
Determination of Limitations
Due to Ventilation



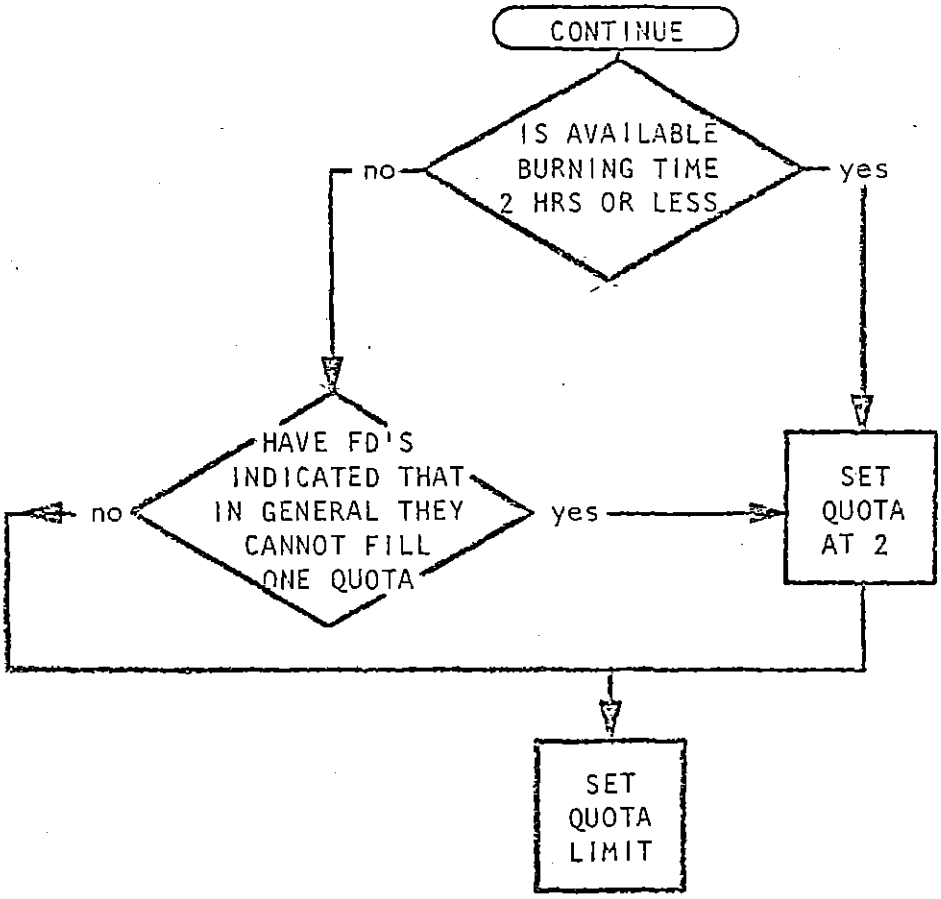
Determination of Limitations
Due to Plume Development



Determination Based Upon AQ



Review Ability to Fill Quotas



Attachment 10

Calculation of Ventilation Index

Data Available

Effective Mixing Height (EMH): 5500 Feet

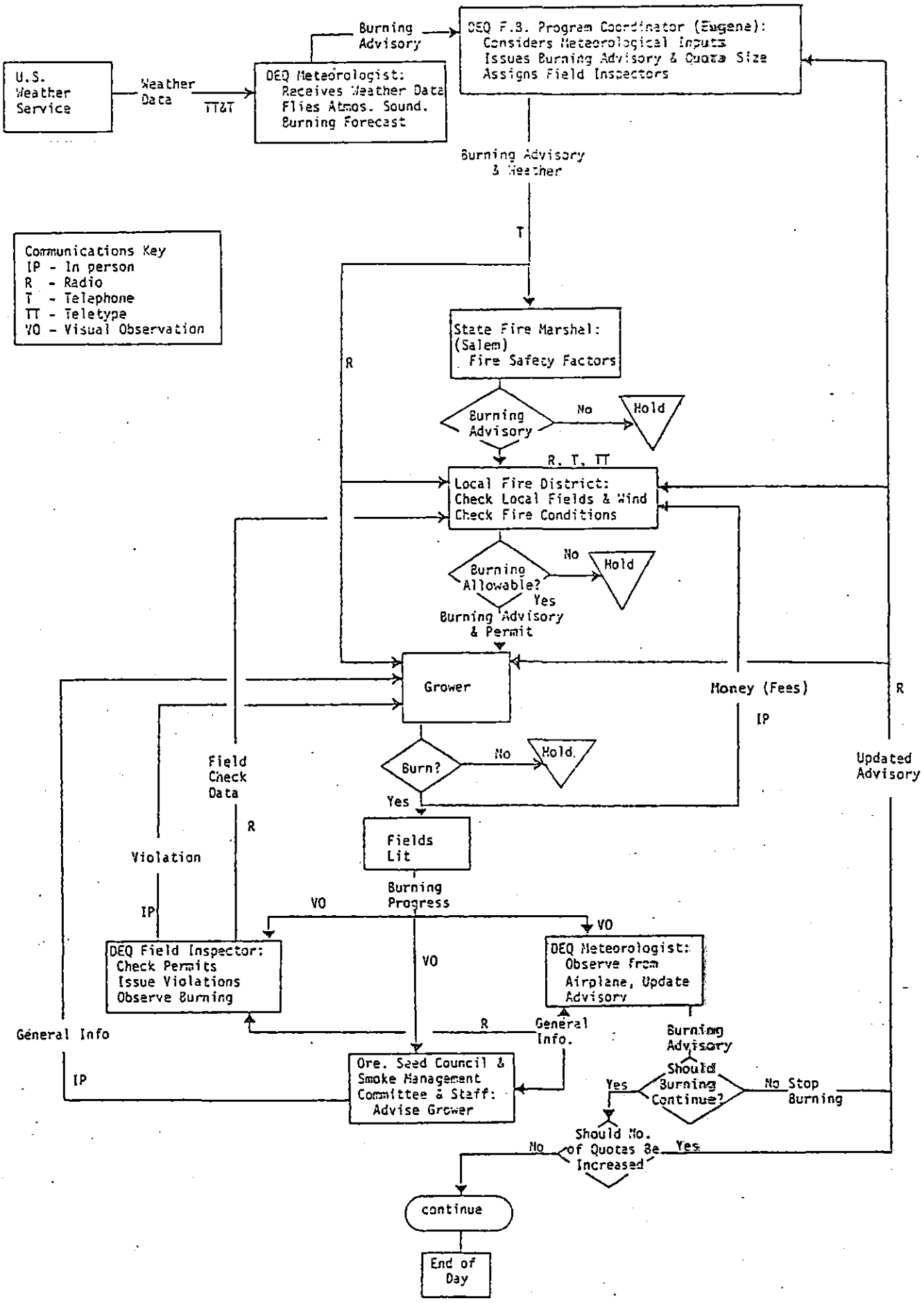
Wind Information:

Altitude (ft)	Direction (degrees)	Speed (knots)
Surface	340	11
1000	340	08
2000	340	07
3000	360	09
4000	020	09
5000	025	12
		56

Average Wind Speed ($W/S_{avg.}$) 56/6 = 9.33

$$\text{Ventilation Index} = \frac{\text{EMH} \times (W/S_{avg.})}{1000} = 51.3$$

Attachment 11



Flow Chart of Daily Operation of the DEQ Smoke Management Program

ATTACHMENT IV

AN ANALYSIS OF PARTICULATE AIR QUALITY IMPACT IN THE WILLAMETTE VALLEY RESULTING FROM INCREASED FIELD BURNING

Submitted Jointly By

The Oregon Department of Environmental Quality,

The City of Eugene and the Oregon Seed Council

In Support of Amendments to the Oregon State

Implementation Plan On Field Burning

March 1980

Summary

The technical staff of the Department of Environmental Quality, City of Eugene and the Oregon Seed Council have jointly prepared this analysis in support of the revision of Oregon's State Implementation Plan for Field Burning. The analysis shows that it is meteorologically feasible to burn an average of 250,000 acres annually without exceeding TSP standards or consuming the 24-hour PSD increment for particulate.

To demonstrate that the burning of 250,000 acres is meteorologically feasible, surface and upper-air meteorological data for the prime part of the field burning season from 1974-1978 was examined. Each day was classified for its burning potential using the smoke management rules. After making some conservative assumptions, the maximum acreage that could be burned was calculated. For this period, the average allowed by the meteorological constraints was 250,240 acres.

For the analysis of particulate impacts, a simple method of modeling the TSP concentrations produced by field burning is developed. Field burning particulate impact factors are found to range from 1.5 to 8.5 ug/m^3 per 1,000 acres burned for receptors in the Willamette Valley. The lower values are appropriate for the good ventilation conditions which exist during south wind conditions, while highest value is characteristic of intrusions during poorer-ventilation, northwind burning.

Using these impact factors, an analysis of second worst case 24-hour and average-burn days is carried out to show that field burning does not consume the 24-hour particulate PSD increment. Field burning is predicted to consume a maximum of 29.5 ug/m^3, of 80 percent of the 24-hour particulate increment (37 ug/m^3) in the Lebanon-Sweethome area of the Willamette Valley.

An analysis of the annual TSP impact of field burning on several sites is carried out for 1978 using chemical mass balance and nephelometer data. Scaling up the 1978 impact to account for the increased acreage limitations, it is predicted that field burning will contribute less than 1 ug/m^3 annually even at the most heavily impacted site--Lebanon.

For the 24-hour particulate standards attainment and maintenance analysis, six reasonable worst-case scenarios are developed and analyzed that encompass the maximum particulate impacts on receptors from both planned and unplanned smoke intrusions. No standard exceedances are predicted even if major intrusions occur on the burn days with already high TSP concentrations. A final discussion points out that for a number of reasons impacts as large as those predicted in the analysis are very unlikely.

Introduction

With the passage of Senate Bill 472, the 1979 session of the Oregon Legislature raised the annual acreage limit of grass seed fields that can be open burned in the Willamette Valley from 187,500 to 250,000. This legislative action requires a revision to the State Clean Air Act Implementation Plan. This technical support document was prepared by the

Department to assess the impact of the increased acreage on (a) annual and 24-hour particulate PSD increment and (b) attainment and maintenance of 24-hour and annual TSP ambient air quality standards.

Analysis of Meteorological Potential for Burning

In order to determine the number of days historically available for burning and to examine the question of whether or not it would be meteorologically possible to burn 250,000 acres, five years of upper air data and surface observations were examined. The afternoon Salem rawindsonde data and surface weather observations (including precipitation) for the National Weather Service Stations at the Salem and Eugene airports were analyzed for the period of maximum field burning activity (July 15 through September 15) for the five year period from 1974 through 1978. For each day during these periods, afternoon mixing height and transport winds at Salem were determined and the 4 p.m. temperature, humidity, and surface winds and the daily amount and time of onset of precipitation was recorded. Each day was then classified according to its meteorological suitability for burning, based on transport wind direction and speed, mixing height, probable fuel dryness (based on minimum afternoon relative humidity and/or precipiation) and potentially hazardous burning conditions.

In order for a day to be classified as suitable for at least one quota of burning in the north or south valley, the following conditions were required*:

1. A transport wind direction that would allow the smoke to be directed away from major population centers.

2. A ventilation index** exceeding 25 for a single quota release, and exceeding 50 for a release of two quotas.

3. A minimum afternoon relative humidity of 65 percent or less south wind conditions and 50 percent or less under north wind conditions.

4. At least one drying day (no precipitation, afternoon relative humidity < 50 percent) for each 0.1 inches of rain up to a maximum of three drying days.

*These requirements were chosen to be as close as possible to the criteria required for burning in the Oregon Field Burning Smoke Management Operational Guidelines.

**The ventilation index is defined as the product of the mixing height in units of feet and the transport wind in knots divided by 100.

The following conditions were sufficient to reject a day as suitable for burning either one or two quotas:

1. Fire hazard conditions consisting of any two of the following:

   a. maximum temperature $\geq 95^{0}$ F.

   b. minimum relative humidity $\leq$ 30 percent.

   c. surface wind speed $\geq$ 20 mph.

2. The occurrence of a daily precipitation amount of more than 0.1 inches with more than a trace recorded by 1 p.m.

3. A transport wind speed less than four knots or an afternoon mixing height less than 2,500 feet, regardless of the ventilation index.

Each day meeting these criteria was then classified as being able to sustain the burning of either one or two quotas in the north and/or south valley. For the sake of simplicity and conservatism, release of fractional quotas and the possibility of burning more than two quotas in a single day were not considered. Historically, more than two quotas have been released, however. Results shown in Table 1 are based on 1980 smoke management operating guidelines, so the number of days of actual burning in past years may not concur with the tables estimates.

TABLE 1. Number of Meteorologically Suitable Field Burning Days in the Willamette Valley 1974 through 1978, June 15 through September 15

	North Valley		South Valley	
Year	one quota	two quotas	one quota	two quotas
1974	5	11	4	5
1975	5	8	5	7
1976	3	14	3	13
1977	7	9	7	8
1978	4	10	7	9
5-year mean	4.8	10.4	5.2	8.4

Since experience with the Smoke Management Program during the past three years has shown that air quality standards have not been exceeded as the result of burning in accordance with this classification scheme, these data can reasonably be used to conservatively estimate the acreage that could be burned from a meteorological standpoint. In performing these calculations, one north valley quota was take to be 4,475 acres and one south valley quota was taken to be 8,550 acres. The meteorologically permissible acreages for the five-year period from 1974 through 1978 are given in Table 2.

Using these conservative assumptions, it has been shown that, on the average, there has been a meteorological potential for burning 250,000 acres.

TABLE 2. Meteorological Permissible Acreages 1974 through 1978.

Year	North Valley	South Valley	Valley Total
1974	93,975	111,150	205,125
1975	80,550	145,535	225,900
1976	89,500	162,245	251,950
1977	102,925	188,100	291,025
1978	80,550	196,650	277,200
		mean:	250,240
		standard deviation:	35,429

Estimating Particulate Concentrations Produced by Field Burning

To analyze the effects of increased field burning on the attainment and maintenance of particulate air quality standards, and on the consumption of PSD increments, a method for estimating the downwind TSP concentrations produced by field burning is necessary. Ideally, a theoretically sound and validated dispersion model should be used for this analysis. Unfortunately, no dispersion model has been validated and particulate emission factors have not been accurately determined for field burning. A simpler approach is feasible, however, since the range of meteorological conditions under which field burning occurs is limited by the smoke management program. In this approach, a set of particulate impact factors can be determined from data on previous smoke intrusions for the two main categories of field burning--north and south wind burning.

One method of developing impact factors from smoke intrusion data uses statistical regression analysis (see Appendix). An analysis of all types of field burning smoke intrusions into Springfield between 1974 and 1977 found that the particulate impact of the intrusion was dependent on the number of upwind acres burned, afternoon relative humidity, and the surface horizontal transport during the intrusion. No relationship was found between smoke concentrations and depth and horizontal velocity of the mixed layer. Particulate concentrations used in this analysis were estimated from nephelometer measurements. The average TSP impact factor was determined to be 4.9 ± 1.9 ug/m^3 per 1,000 acres. The multiple correlation coefficient was 0.69 and the impact factor is significant at better than a 0.01 level.

At the simpliest level of analysis, field burning is conducted during two main wind flow patterns. Most north valley burning is conducted when winds are northwesterly to northeasterly. General south valley burning is conducted on south-to-southwest winds. Turbulent mixing in the atmosphere is usually more vigorous during southerly flow regimes. For this reason, impact factors should be smaller than average for intrusions that occur during southerly flow and larger than average during northerly flow. An examination of several intrusions shows this to be case (see Table 3).

The impact factors shown in Table 3 for 1978 intrusions all fall within the 95 percent confidence interval around the statistically developed average factor. For the 24-hour TSP and PSD analysis of worst-case intrusions, two impact factors will be used. A north wind impact factor of 8.5 ug/m^3/1,000 acres and a south wind impact factor of 2.8 ug/m^3/1,000 acres represents reasonable worst-case intrusions.

There are limitations and uncertainties in the use of these values. They are not applicable to every point in the valley. It is also possible that unusual or localized meteorological conditions could produce impacts that are greater or less than the values used by these circumstances are rather rare. Improvements in burning practices have been accounted for in the analysis since they were little used during this period. Probably the most important uncertainty is caused by the large under-reporting of acreage burned during the seasons used to calculate the impact factors. Using the reported acreage burned causes an overestimated of the burn impact factors and, therefore, the impact of burning will be overestimated for cases where burning releases actually determined the amount of burning. In summary, the impact factors are reasonably conservative approximations for the receptors and conditions examined.

Prevention of Significant Deterioration

Two approaches are taken to show that the 24-hour Class II PSD increment for particulate matter would not be exceeded as a result of burning 250,000 acres annually. In the first, the increments resulting form the adjustment of the maximum north valley and second-highest *south valley burn day acreage occurring during the 1978 baseline period are calculated. Second, the increment that would occur on an average burning day with an annual acreage limit of 250,000 is estimated. In this case, because of the large number of days with small acreage burned, the arithmetic mean of median acreage would be rather small and would not be representative of what might be burned on any one- or two-quota release day. In order to address this problem on the conservative side and at the same time consider the year-to-year variation of available burning days, the PSD analysis for an "average" burning day is based on the meteorologically suitable burning days previously presented, using 1978 acreage reported as a baseline. It was assumed that the increase to 250,000 acres would be evenly distributed among meteorologically suitable burning days occurring in an average year. If it can be shown that PSD increments would not exceeded during either worst-case or average conditions, an exceedance is very unlikely because smoke management guidelines would not allow an inappropriate increase in burned acreage on a day with unsuitable meteorological conditions.

TABLE 3. Particulate Impact Factors for Several Field Burning Smoke Intrusions in 1978

Date	Site	Estimated TSP Impact ug/m^3	Impact Methodology	Approximate Upwind Acreage	Particulate Impact Factor--ug/m^3/1000 acres	Windflow Pattern
7-27-78	Coburg	24.6	CMB	2,900	8.5	NW
7-27-78	Eugene	22	Nephelometer	2,900	7.6	NW
8-10-78	Lebanon	10.7	Nephelometer	7,100	1.5	SW
8-10-78	Halsey	15.6	Nephelometer	7,100	2.2	SW
8-11-78	Lebanon	91	CMB	36,000	2.5	SW
10-1-78	Lebanon	3.7	Nephelometer	1,300	2.8	SW

Table 4 shows the acreage registered and reported burned in the north and south valley in 1977 and 1978. It can be seen that the fractions burned and registered in the north and south valley are nearly the same, and although not shown here, the fraction of the total acreage burned and registered in the north and south valley has been relatively constant historically. Therefore, in the discussion that follows, it will be assumed that: a) both the north and south valleys' acreage to be burned can be scaled up by the same factor; and b) the fraction of the total burned in the north and south valley will be in the same proportion as registered in 1978.

TABLE 4. Acreage Registered and Reported Burned in 1977 and 1978. North and South Valley Fractions of the Total are Given in Parenthesis.

	Registered Acreage			Burned Acreage		
Year	North Valley	South Valley	Total	North Valley	South Valley	Total
1977	81,147 (.28)	205,865 (.72)	287,012	46,368 (.27)	123,951 (.73)	170,319
1978	80,926 (.29)	199,720 (.71)	280,696	41,328 (.27)	112,593 (.73)	153,921

*Since the maximum daily south valley acreage that can be burned has been limited to the maximum daily acreage burned in 1978, it is not necessary to do the analysis for the maximum south valley day.

PSD Impact on Maximum Burning Days

The largest acreage burned in the north valley during 1978 was 7,079 acres burned on August 10 under west-southwest transport conditions. Upward scaling of this acreage by the factor 1.62 (250,000/153,921) would result in an additional daily acreage of 4,418 burned in the north valley. Using a south wind worst-case particulate impact parameter of 2.8 ug/m^3/1,000 acres would result in an additional 24-hour impact of 12.4 ug/m^3. On this day in the south valley, 7,098 acres were burned. Upward scaling by a factor of 1.62 would result in an additional 4,431 acres being burned in the south valley which would contribute an additional 24-hour impact of 12.4 ug/m^3. Conservatively adding the projected north and south valley impact together results in a total projected additional impact of 24.8 ug/m^3 downwind of burning.

The second-largest south valley burning day in 1978 occurred on July 26 when 14,387 acres were burned in the south valley and 1,834 acres were burned in the north valley. Transport winds were southerly.

Upward scaling of these amounts resulted in an additional 8,920 acres in the south valley and an additional 1,137 acres in the north valley. This would produce an additional impact of 25 ug/m^3 from south valley burning and 3.2 ug/m^3 from the north valley for a combined 24-hour impact of 28.2 ug/m^3.

The maximum daily acreage burned in 1978 under north wind conditions was 2,914 acres on July 27. Only 415 acres were burned in the south valley. Afternoon transport winds were seven knots and mixing height of 3,300 feet was measured. Although smoke management operational guidelines will not generally permit release of additional quotas on these meteorological conditions, it is instructive and conservative to work through the example with acreages scaled up by a factor of 1.62. Since significantly larger amounts of burning in the south valley would not be permitted under northerly winds, the south valley acreage may also be scaled up by a factor of 1.62. Upward scaling results in an additional 1,807 acres in the north valley and an additional 257 acres burned in the south valley. Using a worst-case north wind impact parameter of 8.5 ug/m^3/1,000 acres produces an increased impact of 15.3 ug/m^3 from the north valley and 2.2 ug/m^3 from the south valley. Even combined, these additional impacts are well below the allowable 37 ug/m^3 increment.

Average Daily PSD Impact

Although it has been shown that PSD increments would not be exceeded on maximum burning days if 250,000 acres were burned during a season, the question remains whether the increment would be exceeded on an average day. However, because of the large number of days on which small acreages are burned, even with full quota releases, a simple mean or median acreage would be rather small. For example, one or more quotas (not limited by area) were released in 1978 in the south valley on 43 days. Thus, if a simple mean were calculated a mean south valley burning day would consist of only 2,618 acres.

An alternative approach to estimating additional impact on an average day is to make use of the meteorologically suitable burning day analysis previously presented. This will also allow a comparison of the meteorology of the 1978 baseline year with average and worst-case meteorological conditions.

North Wind Average PSD Impact

In 1978, there were 14 idealized north valley burning days. During the average year, there are 15 burning days. Thus, on the average, the additional north valley acreage that could potentially be burned would be distributed over 15 burning days. Assuming that the acreage that can be burned in the north and south valley is divided in proportion to the acreage registered in each (using 1978 baseline year portions), the amount that could be burned in the north valley under a 250,000-acre limit would be 250,000 x 0.29 = 72,089 acres in comparison with 41,328 which was burned in 1978. The additional 30,761 acres would imply an additional 2,051 acres per burning day. Using the north wind impact factor would result in an additional 17.4 ug/m^3 impact on a 24-hour basis.

South Wind Average PSD Impact

The south valley's registration proportional share of burned acreage with a 250,000-acre maximum would be 177,911 acres. This is an additional 65,000 acres per season over the 112,593 burned in 1978 baseline period. Since there are an average of 13.6 burning days in the south valley, we shall assume the additional acreage would be distributed over 13 days for an average increase per day of 5,024 acres. Since this additional amount would not be burned under northerly winds, the south wind impact factor can be used to project an average additional daily impact of 14.1 ug/m^3. In the event of combined north and south valley burning under southerly wind conditions, the north valley input would be reduced to 5.7 ug/m^3 because of the lower particulate impact under south wind conditions. Adding the north and south valley impact under these conditions would result in an additional impact of 19.8 ug/m^3--roughly one-half the allowable increment.

Worst-Year Average Daily PSD Impact

Referring to Table 1, it can be determined that the worst meteorological year for the south valley occurred in 1974, when there were a total of nine burning days. The year with the least number of burning days in the north valley was 1975, when there were 13 burning days. The worst-case analysis can be obtained by scaling the average daily additional impact for north valley burning days up by 1.15 (15 days/13 days) and by scaling up the south valley impact by 1.44 (13 days/9 days).

Assuming a hypothetical worst-case year in which the worst south valley conditions and the worst north valley conditions occurred simultaneously would result in the following additional average daily impacts:

a. Northerly wind impact from north valley burning
   17.4 ug/m^3 x 1.15 = 20.0 ug/m^3

b. Southerly wind impact from south valley burning
   14.1 ug/m^3 x 1.44 = 20.3 ug/m^3

c. Southerly wind impact from north valley burning
$5.7\ ug/m^3 \times 1.15 = 6.6\ ug/m^3$

d. Combined southerly wind impact from north and south valley burning (b + c above)
$20.3\ ug/m^3 + 6.6\ ug/m^3 = 26.9\ ug/m^3$

Even in a very conservative worst-year analysis, 24-hour PSD increments would not be exceeded.

Maximum Daily PSD Impact

A final possibility requiring analysis is the situation in which a large acreage release is made on a particular day but only a small amount of acreage was reportedly burned. The question to be answered is would higher utilization of the release due to a higher annual acreage limitation lead to an exceedance of the PSD increment.

This aspect of the problem was addressed in the following manner. For each day on which general single and/or multiple quotas were released in either the north or south valley, the acreage reported burned was divided by the acreage released to determine the quota utilization efficiency. Historically, of the upper limit of burning allowed by a release, only a fraction of the permissible acreage has been burned. The maximum quota utilization efficiency is limited by (a) availability of fields ready to be burned, (b) the time allowed for burning, (c) the ability of the growers to organize their personnel to utilized that time, (d) the distance between fields, (e) existance of fire hazards, (f) irregular field geometry and (g) terrain. All of these constrainsts are more important in the north than in the south valley. The maximum observed quota utilization efficiency during the 1978 burning season was 65 percent for the north valley and 87 percent for the south valley. The most underutilized releases in the north and south valley were determined and the increase in acreage (and resulting increase in TSP) was calculated by assuming that the maximum utilization efficiencies occur on these days. The worst and second worst case impacts are as follows:

Date	Acreage Released	Acreage Recorded Burned	Potential Acreage Increase	TSP 24-hour Increment (ug/m^3)	
North Valley 8-6-78	North Wind 4,475	(8.5 ug/m^3/1,000 acres) 90	2,909	25	67.5%
North Valley 8-26-78	South Wind 5,870	(2.8 ug/m^3/1,000 acres) 0	3,789	11	29.7%
South Valley 9-2-78	South Wind 17,100	(2.8 ug/m^3/1,000 acres) 2,334	14,877	35	94.5%

Date	Acreage Released	Acreage Recorded Burned	Potential Acreage Increase	TSP 24-hour Increment (ug/m^3)
South Valley	W.S.W. Wind	(2.8 ug/m^3/1,000 acres)		
9-1-78	17,100	4,979	10,545	29.5* 79.7%

This analysis indicates that the increment would not be exceeded. It should be pointed out that under current smoke management guidelines, additional quotas would not have been released on any of these days. Further, other factors such as the timing of the release or the occurrance of several preceding days of heavy burning (which would have limited the utilization efficiencies) were not includes in this analysis.

Although the additional acreages were assumed to be evenly distributed among available burning days for the sake of conservative argument, smoke management operational guidelines would prevent the release of excessive acreage for burning on days when meteorological conditions could not accommodate additional burning.

Impact of Field Burning on Annual TSP Concentrations

The contribution of field burning to 24-hour TSP for each smoke intrusion recorded at Lebanon, Halsey, and Eugene-Springfield in 1978 was determined by chemical mass balance and from statistically derived nephelometer-TSP relationships. For subsequent analysis the higher of the two contribution estimates for each intrusion was selected, and an annual average contribution for each site was calculated by multiplying the average daily impact at each site by a facotr equal to the number of intrusion days divided by 365. Annual impacts under a 250,000 acre burning program were then projected by scaling up the 1978 annual impacts by 250,000 divided by the total acreage burned in 1978. The results shown in Table 6 indicate that the projected annual impact of field burning is insignificant since it is less than ug/m^3 at each of the sites.

*Second worst case impact applicable to state and federal 24-hour PSD increments. impacts are most likely to occur in the Lebanon-Sweethome are of Linn County.

TABLE 6. The Annual Impact of Field Burning on Lebanon, Halsey, and Eugene-Springfield in 1978.

Date	Site of Intrusion	Estimated Impact Lebanon	Halsey	Eugene-Springfield
7/25	Lebanon	4.8	--	--
7/26	Halsey, Lebanon	12.7	7.7	--
7/27	Halsey, Lebanon Eugene-Springfield	16.4	missing data	22.0
8/10	Halsey, Lebanon	10.6	7.0	--
8/11	Halsey, Lebanon	91	17.0	--
8/30	Halsey	--	6.4	--
8/31	Halsey, Lebanon	11.9	10.3	--
9/1	Halsey, Lebanon	3.2	4.9	--
9/2	Lebanon	5.5	--	--
10/12	Eugene-Springfield	--	--	10.0
10/13	Eugene-Springfield	--	--	10.0
Mean		19.5	8.9	14.0
1978 Annual Mean		0.45	.15	.12
Projected Annual Mean (250,000 acres)		0.69	.24	.20

Selection and Analysis of Reasonable Worst-Case Scenarios For Determination of 24-Hour TSP Standards Attainment

Attachment 8 of the Field Burning Smoke Management Program Operational Guidelines describes eight wind flow regimes and associated areas of burning. Relatively small acreage is burned under the first two and the last of these eight regimes. The remaining five regimes and associated areas have potential for significant smoke impact on monitors.

Attachment 8

Wind Flow Regimes and Associated Areas of Field Burning

Transport Winds Direction	Surface Wind Direction	Generalized Area of Burning
North (≈340-20°)	North (≈340-20°)	Due West and South of Eugene-Springfield
North (≈340-20°)	Northeast (≈10-30°)	West of 99 in Lane County South of Eugene-Springfield
Northeast (≈10-30°)	Northeast (≈10-30°)	Washington, Polk, Yamhill, Benton, and Lane Counties, West of 99W
Southwest (≈210-270°)	Southwest (≈210-270°)	The Willamette Valley[1]
South (≈160-210°)	Southwest (≈210-270°)	The South Willamette Valley and Eastern Marion County[1]
Northwest (≈270-330°)	Northwest (≈270-330°)	North Willamette Valley [1] [2]
N. Northwest (≈330-360°)	Northwest (≈270-330°)	Eastern Marion and Clackamas Counties
West (≈200-320°)	West (≈250-300°)	Drainage Areas of East Willamette Valley; Areas Near and North or South of Lebanon

[1]Does not include areas directly upwind of major cities
[2]Areas of Polk County may be restricted

The potential impact of every day of a hypothetical season was not analyzed. Instead, six reasonable worst cases were developed for the five flow regimes which encompassed the range of greatest impacts throughout a season. These scenarios were developed by reviewing available meteorological data to classify each available burning day according to its wind flow regime. Then available ambient particulate data was examined to determine the highest TSP levels recorded on each type of day (without significant field smoke impact in most cases). The largest acreage expected to be burned under each condition was determined and the additional TSP concentration that would result from an intrusion was added to the highest concentrations observed for the regime at each site to determine projected compliance with the 24-hour NAAQS for particulate. In a few cases, when not constrained by meteorological conditions, the largest acreage expected to be burned was determined by scaling up the amount reported burned on a particular day to reflect the increased burning limitation. This was done in only those cases where available burning time on a given day was the main constraint on the accomplished burning. In all other cases, meteorology was assumed to determine the acreage released for burning and 100 percent of the amount released was assumed to be accomplished.

The flawless operation of the smoke management program would produce a few planned smoke intrusions in Halsey, Lebanon, and other east valley communities. Impacts on other sites would occur only from mistaken weather forecasts. To provide completeness and be conservative, both planned and unplanned intrusions are analyzed.

Maximum TSP Concentrations Occurring on Burn Days Without Smoke Impact

To develop worst-case scenarios for 24 hour TSP impact of field burning, high TSP concentrations that occur on burn days with no smoke impact had to be determined for each of the monitoring sites. For the north wind scenarios, 1977-79 air quality data was examined to determine the highest TSP levels recorded for each regime. The highest TSP levels for use in the south wind scenarios were extracted for 1978 only due to limited available data. Several days that were considered are shown in the following three tables.

The seven high TSP north wind burn days represent a range of conditions. The reasons for selecting or rejecting a day for further analysis follow. The standard level TSP concentration recorded at Junction City on September 12, 1979, is the result of localized dust impact. The meteorological conditions on this day would be likely to produce dust but would not be conducive to burning large acreage. Surface wind speeds were above the wind erosion threshold velocity (12 miles per hour) at the Eugene airport throughout mid-day. The afternoon relative humidity was 30 percent in Eugene and only four hours of rain totaling 0.19 inches had fallen during the previous week. Northeasterly surface winds shifted to due north at Eugene at 1300 hours. Strong due-north surface winds persisted in Salem until late afternoon. Winds aloft were consistently northeasterly at Corvallis. As a result, general burning was prohibited. About 1,100 acres were burned in the extreme western portions of the Valley on a field-by-field basis. Less than 200 acres were burned in western Lane County to the west and south of Junction City. Burning on a field-by-field basis is closely supervised. Since no smoke impacts on receptors occurred and no additional burning is likely under these conditions with an increased acreage limitation, this day was excluded from the 24-hour TSP impact analysis.

TABLE 7. Highest TSP Concentrations (ug/m^3) on North Wind Burn Days--1977-79.

Date	Salem	Lebanon	Corvallis	Halsey	Junction City	Coburg	Westmoreland	Eug.	Spfd.	Remarks
9-12-79	--	--	--	--	150	85	112	112	97	General burning prohibited. Field-by-fie burning allowed on we side of valley; dusty conditions.
7-20-78	68	73	44	120	71	90	--	86	92	No smoke impact; selected for Scenario
7-21-78	88	82	60	110	82	100	--	113	110	Fire Marshal shut off burning.
7-25-78	78	97	50	82	61	91	92	130	110	South winds at 1800 PD approaching storm front.
7-31-78	56	63	52	71	59	75	100	99	88	Used in Scenario 4.
8-9-78	77	68	54	120	69	120	--	140	130	Fire Marshal shut off burning. Dusty day. Used in Scenario 5.
10-4-77	--	--	--	--	111	--	89	97	77	Slash smoke intrusion.

TABLE 8. Highest TSP Concentrations (ug/m^3) on Multiple-Quota South Wind Burn Days--1978

Date	Salem	Lebanon	Corvallis	Halsey	Remarks
8-10-78	56	63 (52)	31	100 (95)	Field smoke intrusion at Halsey and Lebanon. Parenthetical values are TSP concentrations after subtracting smoke impact, 14,200 acres burned. Selected for Scenario 2.
8-19-78	16	29	8	21	Rained in north valley--4,948 acres burned.
8-31-78	24	39	--	33	8,400 acres burned.

TABLE 9. Highest TSP Concentrations (ug/m^3) on Limited South Wind Burn Days--1978

Date	Salem	Lebanon	Corvallis	Halsey	Remarks
9-23-78	--	75	--	--	381 acres burned.
10-5-78	97	100	70	84	Heavy slash burning, elevated light scattering and calm winds during morning hours, 327 acres burned, used in Scenario 5.

July 21, and August 9, 1978, are similar days. General North Valley burning was allowed for a short period of time before the State Fire Marshal prohibited burning. Just under 700 acres were burned on those days. The meteorological conditions that prompt the Fire Marshal to prohibit burning are also conducive to high airborne soil dust concentrations--high temperature, very low relative humidity, and high surface wind speeds. Since some additional burning might be accomplished on this type of day if the acreage limitation were increased, August 9 was chosen for additional analysis.

The elevated TSP concentrations measured on July 25 are the result of localized high wind-blown dust concentrations. Approximately 42 percent of the particulate at the Eugene site was soil-related elements. In this case, moderate, variable winds occurred throughout most of the day until a storm front passed after 1600 hours, producing persistent southwesterly winds. Reported north and south valley burning totaled 1,608 acres and 2,023 acres respectively. The probability of significant smoke impact occurring under these conditions is very low due to the flushing effect of the frontal passage.

On July 31, 1978, general north valley burning was allowed all afternoon. Although a full quota was released, only 1,052 acres were burned. Again, the high TSP concentrations are dust-related. This day was chosen as typical of worst-case, north-wind, general burning.

October 4, 1977, was a LIRAQ field observation day. Significant slash smoke intrusions elevated TSP levels. Only 305 acres of field burning was conducted due to inappropriate meteorology. The probability of a standards violation contributed to by field burning under these conditions is extremely small.

Less than 400 acres were burned on each of the limited south wind-burn days. The high TSP levels noted on July 20 are most likely the result of wind-blown soil dust; surface wind speeds were above the erosion threshold velocity for most of the daylight hours and no rainfall had occurred for four days. About 100,000 tons of slash was burned in the Coast Range on October 4 and 5. Daylight winds were moderate and varied from northeast to northwest shifting to southwest late in the afternoon. Westerly marine flow into the valley occurred early both evenings. Smoky conditions and elevated light scattering levels were noted throughout the valley. Meteorological conditions were conducive to entrainment of low-energy slash smoke in nocturnal drainage winds. The high TSP level for the 5th was used in the worst-case analysis of limited southwind burning.

Since very few multiple-quota southwind burn days occur in a season, and since complete data for 1978 was readily available, only three days were selected. The worst of those days, August 10, had light smoke impact from field burning at Lebanon and Halsey. The nephelometer technique was used to correct the TSP levels to approximate non-smoke impacted values for use in the worst-case analysis.

Scenario 1--Northeast Flow at the Surface and Aloft, Limited Burning

Burning in the extreme western portions of the valley is conducted when consistent northeasterly winds exist at the surface and in the transport layer. No receptors are downwind under these conditions so an unforecast wind shift to a more westerly direction would be required to impact a monitor. Since organized northeasterly flow is characterized by moderate ventilation, no more than one quota would be released in those areas to the west of US Highway 99 W. At most, 2,500 acres would be burned.

July 20, 1978, is an example of this regime with the highest TSP levels. The afternoon sounding at Salem showed surface winds were 30 degrees at seven knots, a mean mixed-layer transport wind from 20 degrees at ten knots, and 4,700 feet of vertical mixing. Afternoon surface temperature was 95 degrees F. with 20 percent relative humidity. Only 297 acres were burned since this was early in the season and harvest was under way.

The impact of an intrusion from burning 2,500 acres can be estimated using the high north wind impact factor of 8.5 ug/m^3/1,000 acres. The impact would be 21 ug/m^3. The TSP levels recorded on July 20 and estimated levels with instrusion are shown below:

TABLE 10. Worst-Case Impact With Northeast Flow Regime and Maximum West Valley Burning.

Location	Salem	Corvallis	Lebanon	Halsey	Coburg	J. City	Eug.	Spfd.
Non-impacted TSP (ug/m^3)	68	44	73	120	90	71	86	92
Smoke-Impacted TSP (ug/m^3)	89	65	94	141	111	92	107	113

Scenario 2--Well-Organized Southwest Flow, Multiple Quota Burning

Just before the arrival of a frontal system, well-organized southwesterly flow with great turbulent mixing may occur. Substantial burning in both the north and south valley has been accomplished under these conditions and both Halsey and Lebanon have been heavily impacted. Non-impacted monitors usually indicate lower-than-average TSP under these conditions due to the excellent ventilation.

The maximum acreage that can be burned in the south valley under these conditions has been established in the rules as 46,934 acres which was burned on August 11, 1978. On that day, about 36,000 acres were burned upwind of Lebanon, while less than 10,000 acres were burned upwind of Halsey. Chemical mass balance techniques show that Lebanon received 91 ug/m^3 smoke impact and the nephelometer technique shows a 16 ug/m^3 impact at Halsey. These impacts are assumed to represent the worst case for these conditions.

From Table 11, the highest TSP levels recorded for this regime without significant smoke impact occurred on August 10, 1978. Afternoon mean mixed-layer transport winds were 270 degrees at ten knots at Salem. Maximum afternoon mixing was 7,700 feet which is sufficient for releasing multiple quotas. Surface winds at Salem were west to southwesterly and varied from calm to 19 knots. Minimum afternoon humidity was 31 percent, and no rain had fallen since July 26. No slash was reported burned and one south and three north quotas were released by DEQ. Accomplished buring was 7,079 acres in the north and 7,098 acres in the south.

For the reasonable worst-case scenario with this regime, the smoke impacts that occurred on August 11 are added to the no-impact TSP levels recorded August 10 for Lebanon and Halsey.

TABLE 11. TSP Concentrations For Multiple-Quota Southwest Flow Regimes.

Location	Halsey	Lebanon
No Impact TSP (ug/m^3)	95	51
TSP With Smoke Impact (ug/m^3)	111	143

Scenario 3--Southerly Surface Flow,
Southwesterly Flow Aloft, Single South Quota Release

For this case, wind flow is assumed to be less organized and there is greater stability than in the previous scenario. As a result, a single quota would be released according to the operational guidelines. Planned smoke impacts might occur in Halsey and Lebanon, and a localized wind shift could cause an unplanned intrusion in Salem. The poorer ventilation occurring under these conditions produces higher TSP levels.

October 5, 1978, is the worst representative of this type of day. Limited south valley burning--280 acres--was accomplished. There is evidence of some slash smoke impact at valley receptors. Late in the afternoon relative humidity just under 65 percent occurred and surface winds at Eugene were southerly at five knots. No upper air data is readily available for the day.

Using the high south wind impact factor, the impact of one south quota is estimated to be 24 ug/m^3. The result of adding this impact to the October 5 TSP levels is shown in Table 12.

TABLE 12. TSP Concentrations With and Without Smoke Impact for Limited South Valley Burning Under South to Southwesterly Flow.

Location	Halsey	Lebanon	Salem
Higest No-Impact TSP (ug/m^3)	84	100	97
TSP With Smoke Impact (ug/m^3)	108	124	121

Scenario 4--Northwesterly Flow at the Surface and Aloft, Single North Valley Quota Release

This flow regime occurs frequently during summer months and like most of the north wind conditions, can be accompanied by elevated airborne dust and TSP concentrations. Unplanned intrusions can occur and occasional planned intrusions might occur in Lebanon and Springfield. The limited atmospheric ventilation that produces higher TSP levels also limits burning releases to one quota.

The highest TSP levels for a north burn day similar to this regime occurred on July 31, 1978. About 42 percent of the TSP at Eugene was found to be soil-related elements. Afternoon surface wind direction at Salem varied from 350 to 300 degrees at seven to ten knots. The afternoon average humidity was 31 percent. The Salem sounding shows a ten-knot mean transport wind from 360 degrees and 3,200 feet of mixing. DEQ records indicate 906 acres were burned in the north and 146 acres in the south valley following the release of one north quota.

The impact of the worst-case intrusion is calculated using the high north wind impact factor and assuming an entire north quota is burned. The effect of the 38 ug/m^3 intrusion on TSP levels recorded July 31 is shown in Table 13.

TABLE 13. TSP Concentrations Showing the Impact of an Intrusion From Burning a North Quota with Northwesterly Flow.

Location	Salem	Corvallis	Lebanon	Halsey	Coburg	J. City	Eug.	Spfd.
No Impact TSP (ug/m^3)	56	52	63	71	59	75	100	88
TSP With Smoke Impact (ug/m^3)	94	90	101	109	97	113	138	126

Scenario 5--Northerly Flow, Very High TSP Levels, Limited Burning

Another regime that occurs frequently in the early portion of the burning season is hot and dry high northerly surface winds. For reasons described above, the conditions are very conducive to high soil dust and TSP concentrations and often prompt the State Fire Marshal to prohibit burning. Significant field burning impact under these conditions could cause a standards exceedance. As will be seen, this is very unlikely since the areas where burning is permitted and the short time available severely limit the acreage that can be burned.

August 9, 1978, is an excellent example of this situation. Northwesterly surface winds existed at Salem and north to northeasterly winds predominated at Eugene. The six-knot mean transport wind was northwesterly. Surface wind speed at Eugene ranged from 6-13 knots with the fastest observation of 14 knots. The maximum temperature was 99 degrees F. and minimum humidity was 16 percent. The Fire Marshal prohibited burning at 1:00 p.m. Approximately two thirds of the particulate collected at Eugene and Springfield was soil dust.

DEQ released a half north quota but only 698 acres were burned in the north. No smoke impacts were recorded. Since no receptors are downwind of burning under these conditions, only unplanned intrusions are expected. The most acreage expected to be burned on this day can be estimated by scaling up the 698 acres reported in 1978. The possible burn would be 930 acres and the worst-case intrusion would add 8 ug/m^3 to existing TSP levels--see Table 14.

TABLE 14. TSP Concentrations With and Without Smoke Impact on a Dusty North-Wind Limited Burn Day.

Location	Salem	Corvallis	Lebanon	Halsey	Coburg	J. City	Eug.	Spfd.
No Impact TSP (ug/m^3)	77	54	68	120	69	120	140	130
TSP With Smoke Impact (ug/m^3)	85	62	76	128	77	128	148	138

Scenario 6--North Northwesterly Flow on the Surface, Northwest Flow Aloft, Burning in the Silverton Hills Area

In the past, a number of smoke intrusions into the south valley have resulted from mistaken forecasts while burning in the Silverton Hills area. July 27, 1978, is a prime example. One north quota was released for the Silverton Hills area and 2,914 acres were reportedly burned. Early afternoon surface and transport winds were northwesterly and were expected to persist throughout the afternoon. By 4 p.m., surface and transport winds were due northerly and became northeasterly by late afternoon. The wind shift was undetected until after considerable burning had occurred. The long transport distance for smoke--65 miles--allows enough time for significant changes to occur after burning has been completed. As noted, an intrusion occurred at south valley receptors and light evening winds exacerbated the impact.

A worst case scenario can be projected by scaling up the impact of that intrusion to allow for the additional acreage that might result from the increased acreage limitation. Applying the high north wind impact factor, an additional 9 ug/m^3 of smoke could be expected at the impacted site and 33 ug/m^3 at the sites that were not impacted on the 27th (see Table 15), assuming that they would also be impacted.

TABLE 15. TSP Concentrations With the Impact of Additional Acreage on July 27, 1978, Smoke Intrusion

Location	Salem	Corvallis	Lebanon	Halsey	Coburg	J. City	Eug.	Spfd.
TSP Concentration July 27, 1978 (ug/m^3)	47	25	71	91	62	80	65	94
TSP With Additional Smoke Impact (ug/m^3)	80	58	79	99	95	88	63	102

Discussion of the Analysis of Worst-Case Field Burning Impacts on 24-Hour NAAQS for Particulate

Although three of the scenarios predict TSP concentrations greater than 140 ug/m^3, no exceedances of 24-hour secondary standards are expected even with the conservative assumptions made in the analysis. Several improvements in the smoke management program will make it even less likely that these smoke impacts will occur. The radio communications network between growers, fire districts, and the DEQ, in full operation since 1978, makes it possible to shut off burning within an hour of detecting a mistaken weather forecast. Subdivisions of the fire districts around Lebanon were instituted in 1979 to provide DEQ with greater control over the intensity of burning in that area. This will prevent impacts as large as those projected in Scenario 2 from occurring again. The existing rules call for greater use of real time air quality monitoring and forecasting. As these techniques are developed and experience gained in their use, field burning will have a smaller impact than shown above. For example, burning will be prohibited entirely under the condition described in Scenario 5. The Oregon Seed Council has deployed a network of four pilot balloon stations in the valley to provide regular data on transport winds. This complements the surface meteorological instruments installed at many fire district offices in 1979. Together, these stations provide extensive, regular meteorological data and make it possible to detect unforecast changes and localized conditions earlier. The field burning performance standard incorporated in the 1980 rules provides strong incentives to prevent smoke intrusions into the Eugene-Springfield non-attainment area. In the event that a moderate intrusion occurs, burning for the remainder of the season will be severely limited and the probability of additional intrusions reduced.

APPENDIX
ESTIMATING THE CONTRIBUTION TO SUSPENDED PARTICULATE MASS OF SMOKE CONSTRUSIONS FROM OPEN BURNING USING LIGHT SCATTERING COEFFICIENTS

Between mid-July and mid-October, 6,070 to 114,000 ha of grass seed straw are open-burned in the Willamette Valley of Oregon. Estimated particle emission rates range from 28 kg/ha to 534 kg/ha. Up until the late '70's, smoke intrusions from this source occurred frequently. Intensified smoke management has reduced these intrusions to infrequent occasions.

There has been a lengthy debate about the effect these intrusions have on Total Suspended Particulate (TSP) concentrations. Since the Department of Environmental Quality (DEQ) has maintained a record of nephelometer readings for days when smoke intrusions occurred from 1973 to the present (Freeburn, 1978), a method of estimating the TSP contributions of a smoke intrusion from the scattering coefficient would be useful for determining the historical impact of open burning.

From May to mid-November 1978, DEQ operated 10 fixed air quality monitoring stations in the Willamette Valley. Conventional high volume samplers, nephelometers and several fine particulate samplers (cascade high volume impactor, stacked filter unit, virtual impactors, and short-term fine particulate sequential samplers) were operated at each location. Data from this monitoring program was used to develop regression equations for predicting fine particulate concentrations from light scattering coefficient measurements. These regression equations were then used along with DEQ's smoke intrusion nephelometer records to estimate the impact past intrusions have had.

DATA ANALYSIS--Selection of Data for Statistical Analysis

It is well known that the light scattering coefficient is very sensitive to the mass median diameter of the aerosol producing the scattering (Charleson, 1972). Since this investigation is to determine the impact of smoke intrusions, a selection criteria was used to sort the data from the 10 stations for the regression analysis so that only days with some smoke impact would be considered. Based on previous investigations and practical experience, a day's data was excluded from consideration if the 24-hour average light scattering coefficient (B_{scat}) was less than $10^{-4}m^{-1}$.

During the preliminary analysis, a test of the selection criteria was made. As a part of the Willamette Valley monitoring program, DEQ maintained a Hazelog in which days with smoky conditions were noted at each location when observed. Regression equations developed between 24-hour average B_{scat} and fine particulate for three subsets of data ($B_{scat} \geq 10^{-4}m^{-1}$, $B_{scat} > 1.5 \times 10^{-4}m^{-1}$ and smoky conditions observation) were not significantly different even though the first subset includes the most cases.

Two other choices had to be made before final analysis of the data could proceed--which particulate sampler to correlate with B_{scat} and whether the data from the 10 stations could be considered individually or together. Bivariant correlations were calculated for B_{scat} on the mass collected by the high volume sampler (TSP), high volume cascade impactor, fince particulate catch (FSP), stacked filter unit fine catch (SFUF), virtual impactor fine catch (VF),

and short-term sequential sampler fine catch (SEQF) for days with average B_{scat} greater than $10^{-4}m^{-1}$ for all locations. The B_{scat} values used were the average over the same time interval that the particulate samplers operated--two hours for the sequential samples and 24 hours for the other samplers. Table I shows some selected results:

TABLE I: BIVARIANT CORRELATIONS AND SUMMARY STATISTICS FOR LIGHT-SCATTERING COEFFICIENTS WITH PARTICULATE CONCENTRATIONS MEASURED BY FIVE SAMPLERS AT TEN LOCATIONS FROM MAY THROUGH MID OCTOBER 1978 IN THE WILLAMETTE VALLEY

Particle Samplers	Arithmetic Mean Mass Concentration (UG/M3)	D_{50} for fine particle samplers (UM)	Number of Cases	Correlation with Bscat
TSP	69.7	60	248	.332
FSP	24.9	1.1	279	.674
SFUF	18.4	2.5	268	.641
VF	25.7	3.5	27	.518
SEQF	52.8	1.9	48	.529

It is not surprising that the correlation between B_{scat} and TSP is low for smoky days. The nephelometer is not very sensitive to particles outside the 0.1 to 1.0 um size range, while TSP is very sensitive to super-micron particles. It is surprising that the cascade high volume fine catch is about one-third larger than the stacked filter unit fine catch and better correlated with B_{scat}. The D_{50} cutpoint for the high volume sampler is supposed to be considerbly smaller than the stack filter units' cut point. However, the fiberglass final filter in this sampler is more efficient than the 0.3 um Nuclepore stack filter unit final filter for sub-micron particles (Liu, 1977). It is well known that both samplers suffer from particle bounce--especially for dry, crystaline particles. The cascade impactor was operated with both slotted filter substrates and a greased second stage collection surface to minimize this problem. Several investigations have shown that some particle re-entrainment for medium-size particles still occurs when sotted filter substrates are used. This phenomenon was observed in the open burning emissions testing program conducted by DEQ (DEQ, 1978). The greased second stage used in the ambient samplers probably ensures that no particles larger than 5-7 um reach the final filter even if particle re-entrainment from the slotted filters was substantial. All of this indirect evidence supports the conclusion that the cascade high volume impactor as operated by DEQ collects particles from well into the sub-micron region up to perhaps 7 um. Scanning electron microscopic examination of some filters is needed to clarify this issue.

The size distribution of open burning smoke particles has been studied by numerous investigators (Vines, et al, 1971; Shum and Loveland, 1974; Radke, et al, 1978). There is complete agreement that both a number and mass mode

exist in the 0.1 to 0.5 um region of the size distribution. The upper size limit for the mass distribution has been reported as 2 to 5 um with a very small mass fraction contained in still larger particles. The high volume impactor fine catch may exactly span this region.

The sequential sample data was expected to have high correlations with B_{scat} since they were only taken when a fairly intense smoke intrusion occurred. In operation, three two-hour sequential samples were collected whenever the instantaneous B_{scat} exceeded $5.5 \times 10^{-4} m^{-1}$. However, extensive regression analysis of this data showed that even though moderate correlation coefficients were obtained, the standard error of the regressions was very high. A review of the raw data raised serious questions about the stability and reproduceability of this instrument. The correlations with the virtual impactor fine catch were good, but the small data set prevented further use of this data.

Since the bivariant correlations were highest for the cascade high volume fine catch and this sampler seems to measure most of the size spectrum of smoke particles, data for this sampler was chosen for further regression analysis with B_{scat}. This choice also provided the largest data subset for analysis. All subsequent statistical analysis confirmed that the fine catch from this sampler was better correlated with B_{scat} than the stack filer unit.

Variations in the average particle size distribution, average particle density, and refractive index are known to exist from location to location. Since each of these factors has an effect on the intensity of light scattered by an aerosol, location, specific relationships between B_{scat}, and fine particle mass might be expected. There may also be variations in instrument performance between the 10 locations. Analysis of variance and covariance was conducted to examine this possibility. Analysis using FSP as the dependent variable, B_{scat} as the covariant, and location as the variate showed that there were very significant differences between the locations (see Table II). The overall multiple correlation coefficient increased to 0.832 when location was accounted for. Regession analysis was, therefore, conducted on the data from each location separately.

E II: ANALYSIS OF VARIANCE AND COVARIANCE RESULTS SHOWING THE DIFFERENCES BETWEEN THE 10 LOCATIONS USING FINE SUSPENDED PARTICULATE CONCENTRATIONS AS THE DEPENDENT VARIABLE

ce of variation	F Ratio	Significance of F
riates		
SCAT	951.397	0.000
Effects		
cation	24.609	0.000
Variation explained	117.288	0.000

iate	Raw Regression Coefficient	Number of Cases
	15.419	610

Mean = 27.67 ug/m^3

ble & Category

ion	No of Cases	Unadjusted Dev'n ETA (um)	Adjusted for Covariates Dev'n BETA (um)
Carus	44	4.03	0.24
Salem	47	5.40	5.11
Corvallis	49	3.75	-1.65
Lebanon	60	0.41	-0.18
Halsey	66	5.14	-3.92
Junction City	43	2.13	-1.24
Eugene	64	10.44	6.63
Springfield	49	9.47	7.29
Creswell	68	6.26	-6.73
Coburg	44	4.40	-3.88
		0.47	0.36
ple R^2			0.692
ple R			0.832

Multiple Regression Analysis

Hidy, et al and Sverdrup have shown that average particle density and refractive index vary with relative humidity. Relative humidities measured at the Salem and Eugene airports were used in the regression analysis for the five locations near those airports.

Inclusion of relative humidity increased multiple correlation coefficients slightly. Some investigations have found that non-linear models produce better correlations between fine particle concentrations and light scattering coefficients than linear models. Several non-linear models were tested, including power law, exponential, logrithmatic, quadratic, and multiplicative, but none produced significantly higher multiple correlation coefficients for the limited range of values used here. A summary of linear regression results is shown in Table 4.

For comparison, the results of the analysis for the sequential sampler data at all locations and for the stacked filter unit fine fraction for Eugene and Springfield are shown. Although the correlations are lower, the values of the B_{scat} regression coefficient are in the range of those obtained using the high volume impactor.

The low value of the regression coefficient for Coburg is troubling. Either there is an unusual local source of low-mass particles that are very efficient light scatters, or there is an undetected instrument error at this site.

Even excluding Coburg, the regression coefficients vary by a factor of two from site to site. It appears that the coefficients fall into two groups. Values in the 10 to 12 x 10^{-4} range are appropriate for rural sites while urban or urban dominated sites are in the 15 to 18 x 10^{-4} range. All of these differences may be due to the factors cited earlier. Other investigations have reported coefficients ranging from 8 to 31 x 10^{-4} (Hidy, 1977; Vines, 1971) depending on the aerosol being measured.

TABLE III: SUMMARY OF MULTIPLE LINEAR PROGRESSION ANALYSIS OF B_{SCAT} AND RELATIVE HUMIDITY ON FINE SUSPENDED PARTICULATE CONCENTRATION FOR EACH LOCATION FOR DAYS WHEN $B^{SCAT} \geq 10^{-4}m^{-1}$ FROM MAY TO NOVEMBER 15, 1978

Location	Number of Cases	Adjusted Multiple R^2	B_{scat} Regression Coefficient	Standard Error of B_{scat} Coeff.	RH Regression Coefficient	Standard error of RH Coeff.	Intercept	Overall SE
Carus	43	.356	13.3	2.66	NA	NA	6.3	5.4
Salem	33	.738	15.3	1.57	-0.07	.06	9.9	4.5
Lebanon	59	.718	17.2	1.39	NA	NA	-0.14	5.8
Corvallis	48	.759	17.1	1.39	NA	NA	-0.15	3.8
Halsey	65	.463	11.7	1.55	NA	NA	4.75	6.1
Junction City	41	.559	12.3	1.72	-0.18	.07	19.4	5.4
Coburg	42	.496	5.6	.93	-0.15	.08	25.5	5.2
Eugene	62	.776	18.2	1.26	-0.37	.10	30.4	8.7
Springfield*	47	.691	17.8	1.76	-.035	.08	18.8	6.6
Creswell*	67	.505	9.6	1.14	NA	NA	5.1	3.6
Sequntial Sampler All Locations	48	.263	13.2	3.14	NS	NS	15.6	33.7
Eugene SFU Fine	33	.543	10.7	1.71	NS	NS	5.8	5.6
Springfield SFU Fine	23	.146	6.9	3.15	NS	NS	8.9	7.4

*The Springfield and Creswell data contained weak first order auto correlation. The analysis presented for these two locations are the results of regression after a single interation of the Cochrane and Orcutt method to remove the autoregression structure.

NH Relative humidity data not available for these sites.
NS Variable not significant.

Application of Regression Equations to Determine Contribution of Smoke Intrusions to Fine Particulate Mass Concentrate

To apply the results of the regression analysis to field burning smoke intrusions, a methodology had to be developed to separate the effects of the intrusion from the effects of locally generated aerosol. The method used is similiar to quantative spectroscopy technique. First, the increase in the 24-hour average B_{scat} caused by the intrusion is calculated-- B_{scat}. This is done by integrating the area under the portion of the nephelometer output showing the smoke intrusion, subtracting a baseline or background value and dividing by 24 hours. The predicted contribution of the intrusion to fine particulate mass concentration (FSP) is calculated using the differential of the regression equation:

If $FSP = K + K1 * B_{scat} + K_2 * RH$

Then,

$$\triangle FSP = K_1 * \triangle B_{scat}$$

The confidence interval around the predicated value is calculated using the standard error of the B_{scat} regression coefficient in this case. An example of this procedure follows.

Figure 1 shows an example of nephelometer data for the July 27, 1978, field burning smoke intrusion into Eugene. The intrusion began some time after 1600 hours and lasted through 2400 hours. The integrated area under this portion of the curve is $33.1 \times 10^{-4} m^{-1}$hn and the base line value--the three-hour average B_{scat} prior to 1600--is $0.5 \times 10^{-4} m^{-1}$. Therefore, $\triangle B_{scat} = 1.19 \times 10^{-4} m^{-1}$. The predicted fine particulate contribution of this intrusion $\triangle$FSP is 21.7 ug/m^3. The 95 percent confidence interval around the prediction is $\pm$ 3.0 ug/m^3.

To test the value of the overall approach, estimates of smoke impact using the nephelometer method were made for several intrusions that occurred in 1978 and compared to impact estimates made by DEQ using the chemical mass balance (CMB - Friedlander, 1973) technique--see table 5.

With one exception, the confidence intervals overlap for the estimates from the two methods. The cases where discrepencies exists illustrate the problems that exists with currect CMB methodology and with the nephelometer technique.

The July 29 instrusion occurred on a warm, sunny day with moderate north winds and good atmospheric dispersion and came from grassfield burning approximately 75 miles away. The CMB characterization of total particulate for the day attributed 16 ug/m^3 to secondary carbon aerosol. Since the light-scattering coefficients prior to the intrusion are so low, it is likely that a portion of the so-called secondary carbon actually came from the well-aged smoke plume and should have been attributed to the vegetative burning.

In addition to the CMB and nephelometer, results are not directly comparable because each sampler is measuring a different but overlapping particle size range. The comparison does show the usefulness of the relatively simple nephelometer methodology. On the average, the nephelometer technique estimates about 3/4 of the impact of a smoke intrusion on the total suspended particulate concentration.

On November 14, nephelometer values were high all day and for two days preceeding. In this case, establishment of a base-line value to use in the calculations is just about guesswork.

TABLE V: ESTIMATED CONTRIBUTION OF SIX SMOKE INTRUSIONS USING THE STATISTICAL NEPHELOMETER METHOD COMPARED TO ESTIMATES USING CHEMICAL MASS BALANCE (CMB) METHODS

Location	Date	Predicted Impact Using Nephelometer (ug/M^3)	CMB Estimated Vegetative Burning Impact (ug/M^3)		Type of Intrusion
			Fine Mass	Course Mass	
Eugene	7/27/78	22 ± 3	8.8 ± 3.8	7.2 ± 3.3	Field Burn.
Eugene	8/3/78	45 ± 6	27.9 ± 5.1	22.4 ± 5.2	Forest Burn.
Lebanon	8/11/78	49 ± 8	66.8 ± 17.9	24.4 ± 14.4	Field Burn.
Eugene	10/26/78	31 ± 4	31.5 ± 5.7	14.4 ± 5.1	Forest Burn.
Eugene	11/13/78	44 ± 6	23.3 ± 4	29.8 ± 2.6	Forest/Local
Eugene	11/14/78	64 ± 9	54.1 ± 12.6	31.6 ± 3.3	Forest/Local

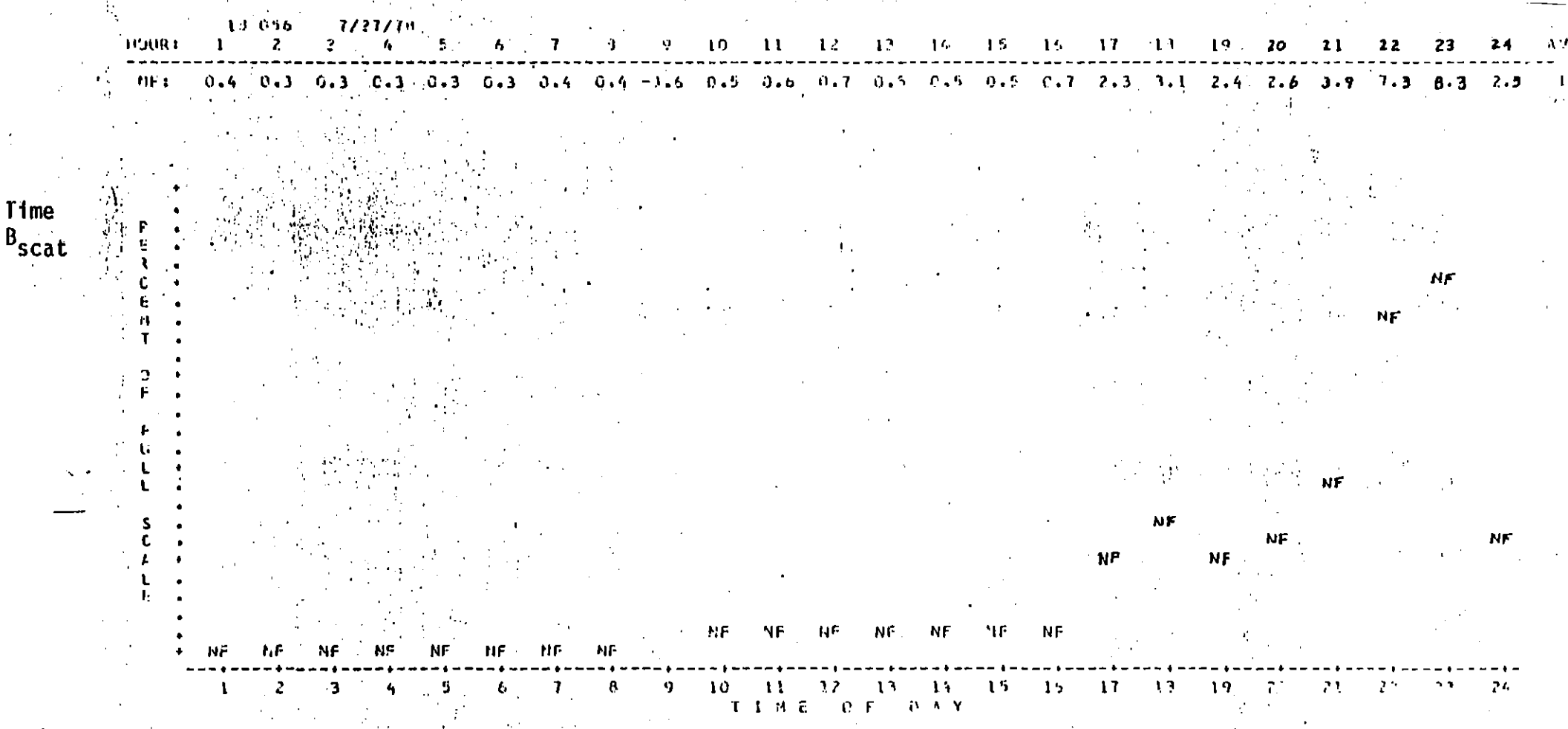


Figure 1. Typical daily nephelometer data for a smoke intrusion into Eugene on 7-27-78. Smoke intrusion began just after 1600 and reaches a peak of 8.3 at 2300 and then deminished rapidly.

The Estimate Impact of Agricultural Open Burning Smoke Intrusions on Suspended Particulate Concentration for 1973-77

Useful estimates of the impact of grass seed field burning during past years on fine suspended particulate concentration can be made using the nephelometer data collected by DEQ since 1973 at two locations--Eugene and Springfield. During the 1973-77 period, 53 days and 70 days were affected by smoke intrusions into Eugene and Springfield respectively. Impact estimates were made for each day using the regression coefficient appropriate for each location. Table 6 and Figure 2 summarize the findings of this analysis.

The estimated impacts range from insignificant to very large with significant average impact. The impact on Total Suspended Particulate may be 25 percent greater than indicated here. The number and intensity of smoke impacts into Eugene and Springfield has decreased along with the total acreage burned. Both have decreased due to intensified smoke management.

TABLE VI: DESCRIPTIVE STATISTICS FOR ESTIMATED IMPACT OF SMOKE INTRUSIONS ON SUSPENDED PARTICULATE CONCENTRATIONS FOR 1973-77

Location	Days of Impact	Range of Impacts ug/m^3	Arithmetic Mean Impact ug/m^3	Mode of Impacts ug/m^3
Eugene	53	.5 - 65	9 $\pm$ 10	6
Springfield	70	.7 - 99	12 $\pm$ 16	7

CONCLUSION

Out of a need to estimate the past impact of agricultural open burning on suspended particulate concentrations, a methodology has been developed using measured light-scattering values that yield reasonably accurate estimates. The methodology is based on a statistical analysis of aerometric data collected by DEQ at 10 fixed stations during the summer and fall of 1978. The fine particule catch on the back-up filter of the cascade high volume impactor was found to have the highest correlation with average light scattering measured by a nephelometer on "smoky days." Relative humidity was also found to be significantly correlated. Since there were statistically significant differences between the stations, 10 separate regression equations were developed.

Using these regression coefficients and a technique similar to quantative spectroscopic methods, estimates of smoke impact were made and compared to estimates made by DEQ of vegetative burning impact using Chemical Mass Balance techniques. Reasonable agreement was found. Finally, estimates of the impact of agricultural opening burning on suspended particulate concentrations for the summer burning season from 1973 through 1977 were made for Eugene and Springfield, Oregon, using historical nephelometer data. The average 24-hour impact was found to be significant.

PW21a20

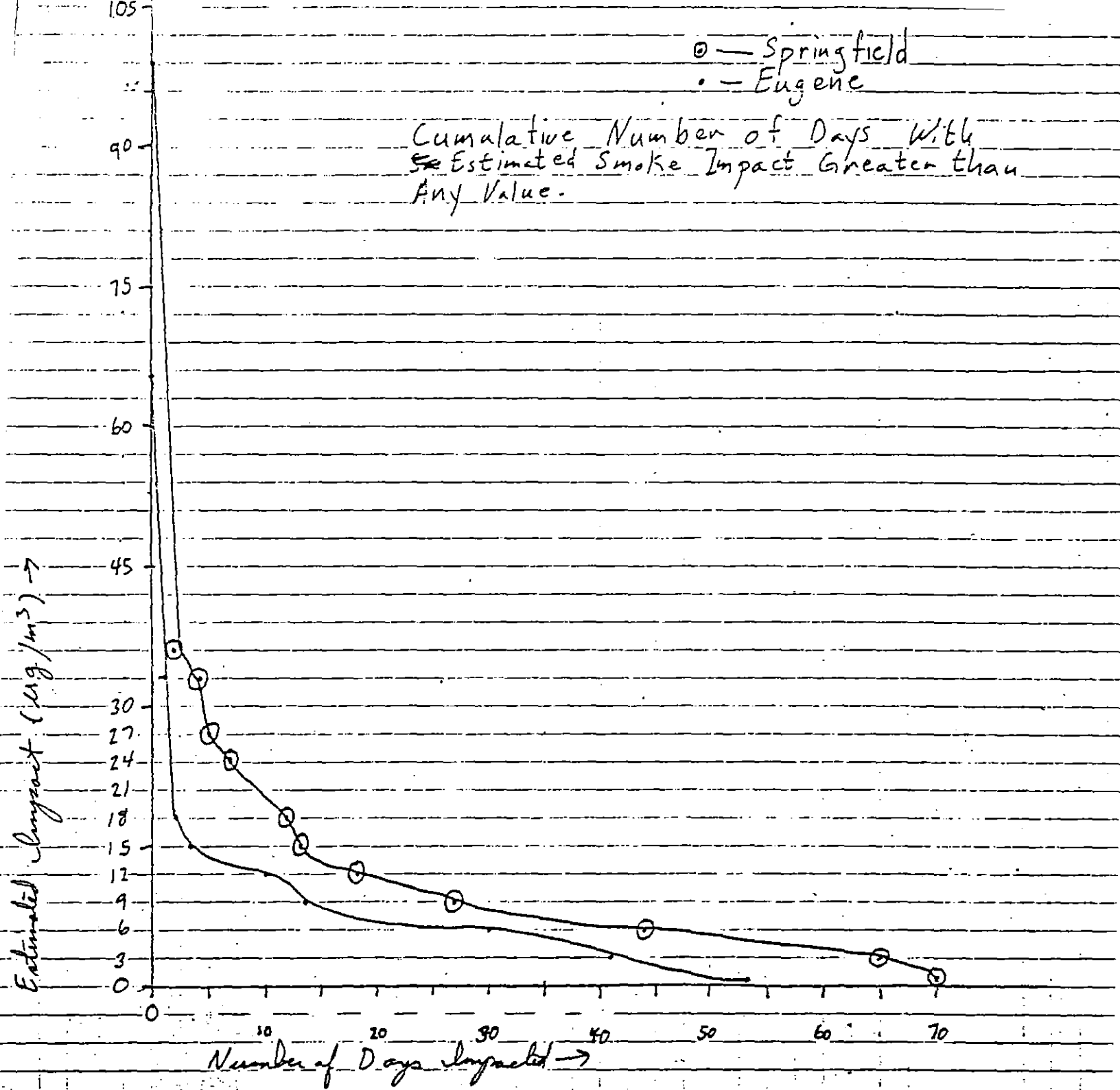

⊙ — Springfield
• — Eugene
Cumulative Number of Days With Estimated Smoke Impact Greater than Any Value.
105
90
75
60
45
30
27
24
21
18
15
12
9
6
3
0
Estimated Impact (μg/m³) →
0
10
20
30
40
50
60
70
Number of Days Impacted →

Figure 2

FOOTNOTES

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ATTACHMENT V

U.S. ENVIRONMENTAL PROTECTION AGENCY

REGION X

1200 SIXTH AVENUE

SEATTLE, WASHINGTON 98101

REPLY TO ATTN OF: M/S 625

RECEIVED
MAR 31 1980
DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
FIELD BURNING OFFICE

MAR 27 1980

Mr. William H. Young, Director
State of Oregon
Dept. of Environmental Quality
P. O. Box 1760
Portland, OR 97207

RE: Draft Field Burning SIP Revision

Dear Mr. Young:

I appreciate the opportunity to review the draft field burning SIP revision and supporting documentation at this early stage in the SIP revision process. Overall, we find the package to be excellent and wish to commend all parties - the DEQ, City of Eugene, and Oregon Seed Council - for an extremely conscientious and credible job.

Not only are all essential corrections being made in the regulation, but many other desirable changes are proposed which will improve and clarify the regulation. The smoke management operational guidelines have been greatly expanded and we urge you to continue to improve them as your operating experience dictates. The technical support document has been greatly improved and also appears approvable. Given that dispersion modeling is not yet technically feasible, we feel that the current document is adequate to support the proposed SIP revision.

Since there appear to be no significant problems with the draft SIP revision proposal, I would suggest we not hold the meeting among EPA and the interested parties in Oregon that is scheduled for March 28, 1980.

The official docket on the January 23, 1980 SIP submittal should be closed as soon as possible. We urge you to replace that submittal with the new SIP revision in April which would be composed of the regulation adopted on January 18, 1980 and amended on April 18, 1980; the updated smoke management operational guidelines; and the new technical support document.

State of Oregon
DEPARTMENT OF ENVIRONMENTAL QUALITY
RECEIVED
MAR 28 1980
OFFICE OF THE DIRECTOR

Approval of a 250,000 acres SIP revision will still leave two issues that will have to be dealt with in the future. First, the contribution of field burning to the existing Eugene-Springfield nonattainment problem must be adequately addressed in the attainment strategy. Second, an adequate dispersion model should be developed and used to accurately determine the amount of PSD increment which is consumed by the increase in acreage being burned. Prior to the availability of that model the amount of increment consumption attributed to this increase in field burning will be based on the values contained in the Technical Support Document submitted as part of the SIP revision.

Again, I am pleased to receive such an improved SIP revision and to inform you that the deficiencies previously noted have been corrected. We will do our best to meet the following expedited scheduled for review of this submission:

Replacement revision received:	April 21, 1980
Complete review and transmit:	May 5, 1980
Publish NPRM in Federal Register:	May 9, 1980
End comment period:	June 9, 1980
Prepare and mail NFRM:	June 23, 1980
Publish NFRM in Federal Register:	July 4, 1980

Although this is a compressed schedule assuming minimum public input, we will do our best to meet it. Please let me know if you have any additional questions on the SIP revision process.

Sincerely,

Donald P. Dubois
Regional Administrator

VICTOR ATIYEH
GOVERNOR

Environmental Quality Commission

Mailing Address: BOX 1760, PORTLAND, OR 97207
522 SOUTHWEST 5th AVENUE, PORTLAND, OR 97204 PHONE (503) 229-5696

MEMORANDUM

To: Environmental Quality Commission

From: Director

Subject: Agenda Item No. I, April 18, 1980, EQC Meeting

Proposed Interim Groundwater Quality Policy

Background and Problem Statement

Several items on the April 18, 1980, EQC Agenda relate to the issue of groundwater quality in localized areas in Oregon. Moreover, groundwater quality protection is an issue of increasing concern throughout Oregon. Unlike surface waters which travel great distances in short periods and are readily renewed, groundwater migrates slowly and is not as readily replenished. Thus adverse impacts on groundwater quality can have severe and long-lasting negative effects. Groundwaters, especially those that require little or no treatment for drinking water purposes, are a highly valuable, renewable natural resource.

Legal authority for the control of groundwater pollution exists in two legislative policy statements, ORS 468.710 (in the Pollution Control chapter) and ORS 537.525 (in the Appropriation of Water Generally chapter). However, neither standards nor other procedures have been developed sufficiently to provide the framework for protecting groundwater quality. Past groundwater pollution problems have been addressed by the Environmental Quality Commission on a case-by-case basis. As these types of problems increase, an apparent need exists for policy guidance from the Commission to guide the actions of the Department of Environmental Quality and local governmental agencies to assure protection of groundwater quality.

Evaluation

The staff prepared a report entitled, Groundwater Quality Protection--Background Discussion and Proposed Policy", appended as Attachment "A". This report discusses the groundwater quality situation in Oregon and is organized into the following major headings:

Please refer to the attached report for the background, evaluation, and conclusions.

Director's Recommendation

Based upon the conclusions (Section IX, pages 49 to 51), presented in the report entitled, "Groundwater Quality Protection--Background Discussion and Proposed Policy," (Attachment "A"), it is recommended that the Commission:

1. Approve the recommendations presented in Section X, pages 52 to 56 of the report as an interim Statement of Policy.

2. Instruct the staff to accomplish the following tasks:

   a. Print and distribute the report to local governments and interested citizens for review and input.

   b. Schedule public meetings to discuss the report and invite input.

c. Summarize and evaluate the input from the public and present recommendations to the Commission for further action as follows:

(1) Present final recommended groundwater protection policy statements based upon public input.

(2) Seek authorization for formal adoption (rulemaking) of the final recommended policy statements in late fall of this year.

Bill

William H. Young

Attachments: 1 Attachment "A"

Edison L. Quan:l
229-6978
April 4, 1980
WL1269

ATTACHMENT A

GROUNDWATER QUALITY PROTECTION

Background Discussion and Proposed Policy

Prepared

by

The Oregon Department of Environmental Quality

April, 1980

Portland, Oregon

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FIGURES

STATE OF OREGON
DEPARTMENT OF ENVIRONMENTAL QUALITY
GROUNDWATER QUALITY PROTECTION
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I. PROBLEM STATEMENT

Groundwater protection is an issue of increasing concern throughout Oregon. Unlike surface waters which travel great distances in short periods and are readily renewed, groundwater migrates slowly and is not as readily replenished. Thus adverse impacts on groundwater quality can have severe and long-lasting negative effects. Groundwaters, especially those that require little or no treatment for drinking water purposes, are a highly valuable, renewable natural resource.

A number of statutes exist which define measurable environmental standards and clear limits to legal authority for protection of surface waters, including control of point source discharges. No measurable standards or comparable clarity exists for groundwater protection. Specifically, there is no uniform statewide program that provides greater protection to sensitive aquifers as compared to those that are naturally protected or those that have little potential for beneficial use. The lack of a uniform program is exemplified by the prohibition of development over areas underlaid by naturally poor quality aquifers (i.e., saline or alkaline waters) as contrasted to permitted extensive development over aquifers having high water quality.

Accordingly, state and local officials have had difficulty in applying the available statutes as they relate to groundwater quality protection. Therefore, a systematic statement of policy from the Environmental Quality Commission is needed to guide actions of the Department of Environmental Quality and local agencies to assure appropriate protection of groundwater quality.

II. LEGAL AUTHORITY

Two legislative policy statements, ORS 468.710 (in the Pollution Control Chapter) and ORS 537.525, (in the Appropriation of Water Generally Chapter), provide that the impairment of groundwater by pollution be prevented or controlled within practicable limits to protect beneficial uses of such groundwaters. These policy statements are presented in full below. ORS 468.710 uses the term waters of the state which includes underground waters as a part of the definition.

A. 468.710 Policy. Whereas pollution of the waters of the state constitutes a menace to public health and welfare, creates public nuisances, is harmful to wildlife, fish and aquatic life and impairs domestic, agricultural, industrial, recreational and other legitimate beneficial uses of water, and whereas the problem of water pollution in this state is closely related to the problem of water pollution in adjoining states, it is hereby declared to be the public policy of the state:

(1) To conserve the waters of the state;

(2) To protect, maintain and improve the quality of the waters of the state for public water supplies, for the propagation of wildlife, fish and aquatic life and for domestic, agricultural, industrial, municipal, recreational and other legitimate beneficial uses;

(3) To provide that no waste be discharged into any waters of this state without first receiving the necessary treatment or other corrective action to protect the legitimate beneficial uses of such waters;

(4) To provide for the prevention, abatement and control of new or existing water pollution; and

(5) To cooperate with other agencies of the state, agencies of other states and the Federal Government in carrying out these objectives.

(Formerly 449.077)

B. 537.525 Policy. The Legislative assembly recognizes, declares and finds that the right to reasonable control of all water within this state from all sources of water supply belongs to the public, and that in order to insure the preservation of the public welfare, safety and health it is necessary that:

(1) Provisions be made for the final determination of relative rights to appropriate groundwater everywhere within this state and of other matters with regard thereto through a system of registration, permits and adjudication.

(2) Rights to appropriate groundwater and priority thereof be acknowledged and protected, except when, under certain conditions, the public welfare, safety and health require otherwise.

(3) Beneficial use without waste, within the capacity of available sources, be the basis, measure and extent of the right to appropriate groundwater.

(4) All claims to rights to appropriate groundwater be made a matter of public record.

(5) Adequate and safe supplies of groundwater for human consumption be assured, while conserving maximum supplies thereof for agricultural, commercial, industrial, recreational and other beneficial uses.

(6) The location, extent, capacity, quality and other characteristics of particular sources of groundwater be determined.

(7) Reasonably stable groundwater levels be determined and maintained.

(8) Depletion of groundwater supplies below economic levels, impairment of natural quality of groundwater by pollution and wasteful practices in connection with groundwater be prevented or controlled within practicable limits.

(9) Whenever wasteful use of groundwater, impairment of or interference with existing rights to appropriate surface water, declining groundwater levels, interference among wells, overdrawing of groundwater supplies or pollution of groundwater exists or impends, controlled use of the groundwater concerned be authorized and imposed under voluntary joint action by the Water Resources Director and the groundwater users concerned whenever possible, but by the director under the police power of the state when such voluntary joint action is not taken or is ineffective.

(10) Location, construction, depth, capacity, yield and other characteristics of and matters in connection with wells be controlled in accordance with the purposes set forth in this section.

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III. GENERAL DESCRIPTION OF AQUIFERS

The following is a brief discussion of the conceptual system of aquifers as they may occur in Oregon: (excerpted from Bartholomew et.al. 1973)

A. Hydrologic Cycle

Groundwater like surface water, originates as precipitation and both are an integral part of the water cycle. The earth's water supply circulates endlessly from oceans to skies, to lands, and finally it returns again to the oceans, see Figure 1.

Evaporation from the oceans and surface water bodies is the major contributor of water to the hydrologic cycle. After precipitation reaches land surface, the water either runs off, evaporates, transpires, or seeps into the ground. Eventually, all water is returned to the oceans and upon arrival, it begins again to move through the hydrologic cycle.

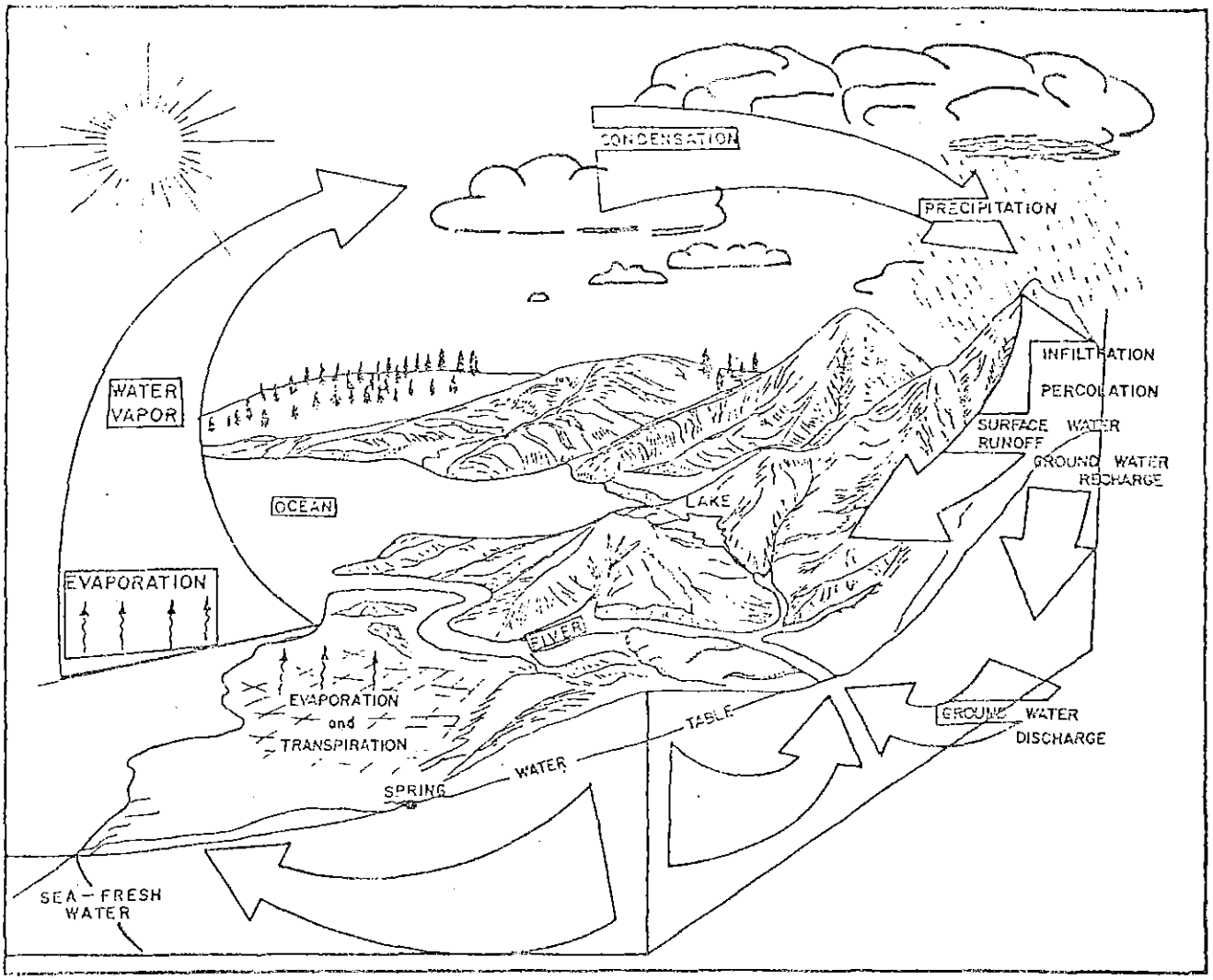

Figure 1. The hydrologic cycle -- a generalized presentation.

B. Groundwater Recharge

A portion of the precipitation that seeps into the ground in Oregon is absorbed by soils and plants. The remaining water percolates downward through the water table. The water table marks the elevation below which all pore spaces are filled with water. The water table is not a flat surface as the name implies. It usually forms as a subdued replica of the land surface. The water table stands at higher elevations in mountainous terrains and at lower elevations within stream valleys. High elevations on the water table mark the areas of GROUNDWATER RECHARGE. Groundwater moves downward and away from recharge areas towards lowlands and groundwater discharge areas.

The major regions of groundwater recharge in the state of Oregon, are the Cascade Mountains, the Blue Mountains, the Coast Range, and similar elevated areas possessing permeable formations and receiving large amounts of precipitations. Water well information is generally sparse in mountainous areas and it is difficult to accurately locate the exact recharge boundaries; nevertheless, regional groundwater boundaries normally lie beneath major topographic divides. The major drainage divides in Oregon are shown as solid lines on Figure 2.

Deep wells are required to withdraw water from groundwater recharge areas. During construction, wells in recharge areas experience progressive water level declines as the wells are deepened.

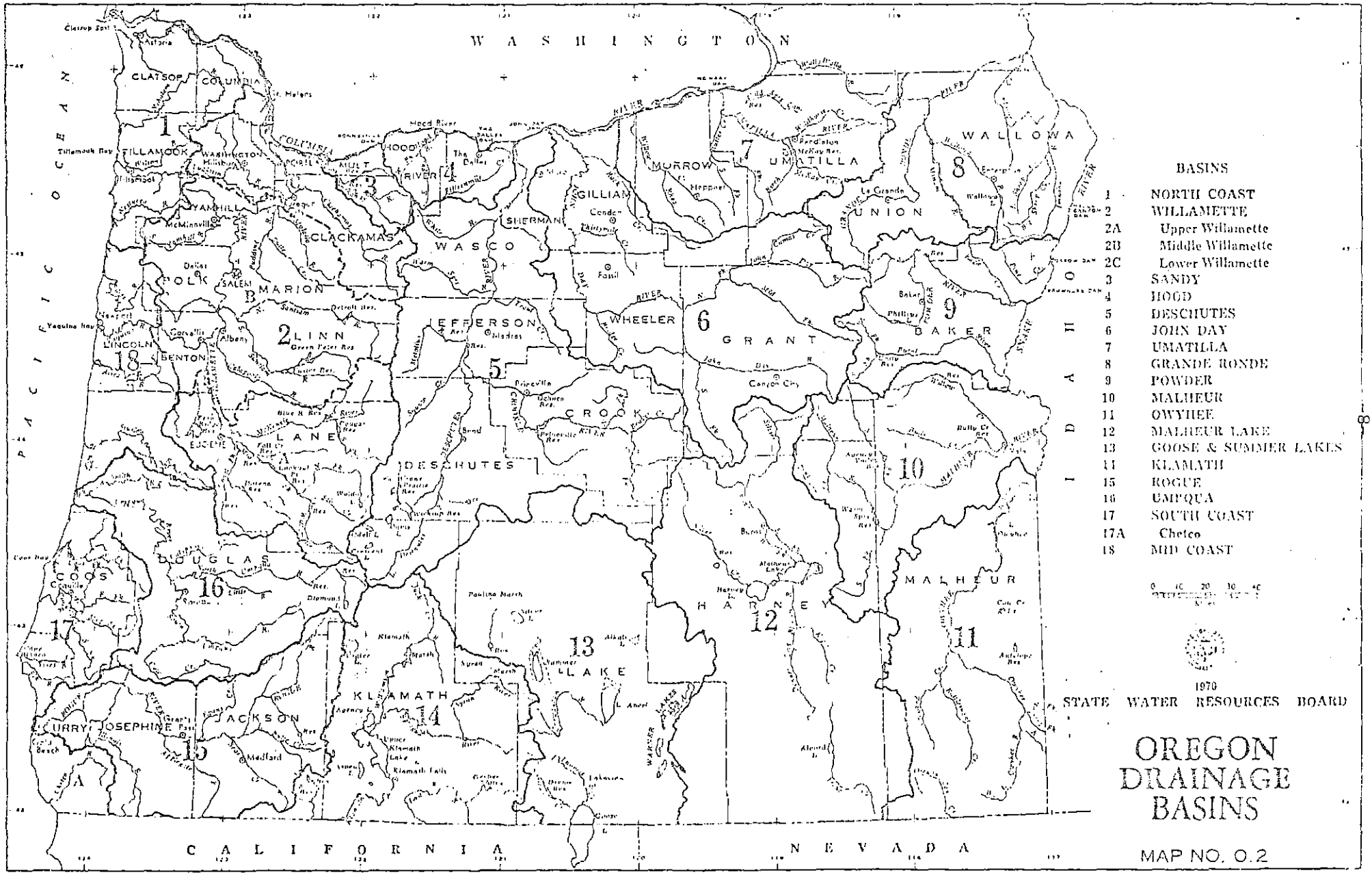

Figure 2. Major Drainage Basins in Oregon.

C. Groundwater Discharge

Groundwater migrates from the mountainous recharge areas, downward, through rock materials toward lowland areas where it reappears as groundwater discharge. A large amount of groundwater is forced toward land surface as regional discharge within major valleys such as the Willamette Valley and Harney Valley. Large river channels such as the Willamette, Rogue and Deschutes Rivers also constitute major groundwater discharge areas. Numerous springs and marsh lands also serve as groundwater discharge areas in Oregon.

Nature has established a balance between natural recharge and natural discharge. Therefore, if there is an increase in the quantity of groundwater recharge, there will also be an increase in the quantity of natural groundwater discharged from the basin. If the total amount of recharge is insufficient to maintain a balance with the total basin discharge, the water table elevation must decline.

Wells drilled in discharge areas generally encounter water at shallow depths. As these wells are deepened, a rise in the water level will be experienced.

D. Groundwater Flow Systems

Surface water resources can be directly observed and measured. In contrast, groundwater bodies must be observed and measured indirectly. Because groundwater is hidden from sight, much

mystery (mystic) has lingered around the subject of locating underground waters. Without addressing the subjects of divining rods and water witching, it can be stated that groundwater responds to known physical and chemical laws. Groundwater basins are empirically as well as mathematically predictable.

A GROUNDWATER BASIN is defined as a three-dimensional volume of water and earth material which contains the entire flow paths of all the water recharging the groundwater system. Important features of any groundwater basin are:

(1) the geometry,
(2) the velocity and direction of groundwater movement,
(3) the water-bearing characteristics of the rock materials, and
(4) the physical and chemical characteristics of the water.

The basin may be simple, involving only one recharge area and one discharge area, or complex involving several recharge and discharge areas. The cutaway drawings shown in Figures 3 through 6 illustrate several commonly occurring features of groundwater basins.

There are three principal types of change occurring in any groundwater basin. These are:

(1) the change in position (movement) of groundwater.
(2) the change in temperature,
(3) the change in concentration of chemical constituents, see Figure 6.

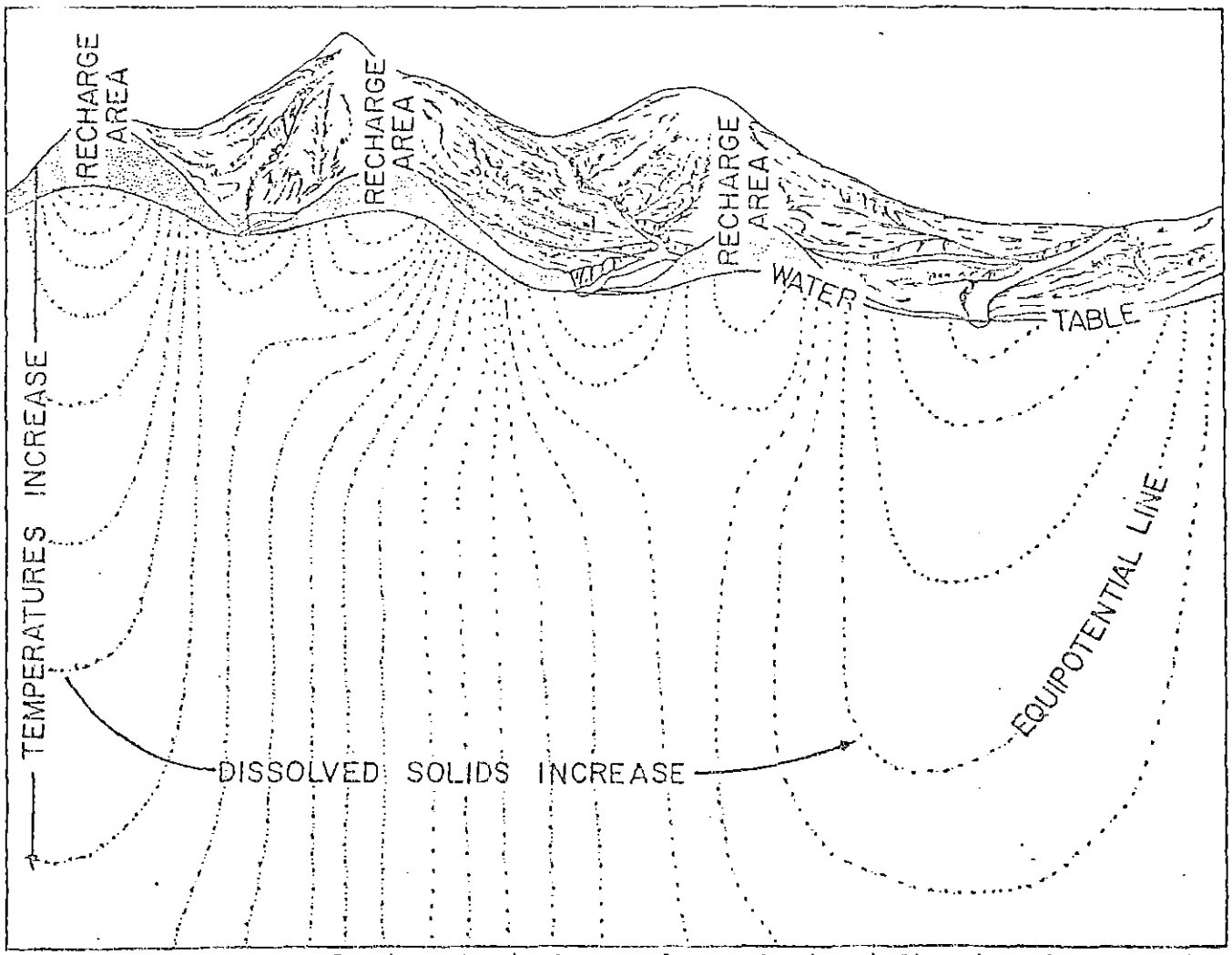

Figure 3. Geometry of a hypothetical groundwater basin, indicating the general change in (1) head, (2) temperature, and (3) concentration in total dissolved solids.

The change of dominant importance is the change in position. The energy which causes groundwater to move is a consequence of its position and is called potential energy. The dashed lines in Figure 1 are used to define a potential energy field and they are called EQUIPOTENTIAL LINES. The altitude of the water level in a well tightly cased to the bottom specifies the equipotential line. For example, a water level which stands at 500 feet above sea level in a well which is tightly cased to the bottom, defines a point on the 500 foot equipotential line. Groundwater moves from high potential to low potential at right angles to equipotential lines.

Temperatures generally increase with depth due to natural heat flow emanating from the interior of the earth. Earth temperatures increase approximately 1^{O}Fahrenheit for every 60 feet beneath the first 100 feet below land surface. Variations in earth temperatures from place to place within a groundwater basin is due in large part, to groundwater movement.

Note on Figure 3, that natural changes in chemical quality will occur as the groundwater moves through the flow system. The degree to which these changes take place, is highly dependent on the solubility of the rock materials, the distance traveled, and the residence time of the water in transit. Generally, the total concentration of dissolved constituents will increase along the flow path. The general deterioration of water quality as the water moves through the system, often leads to a very poor quality water in major discharge areas. These waters have sometimes been mistaken for connate sea waters. Chemical

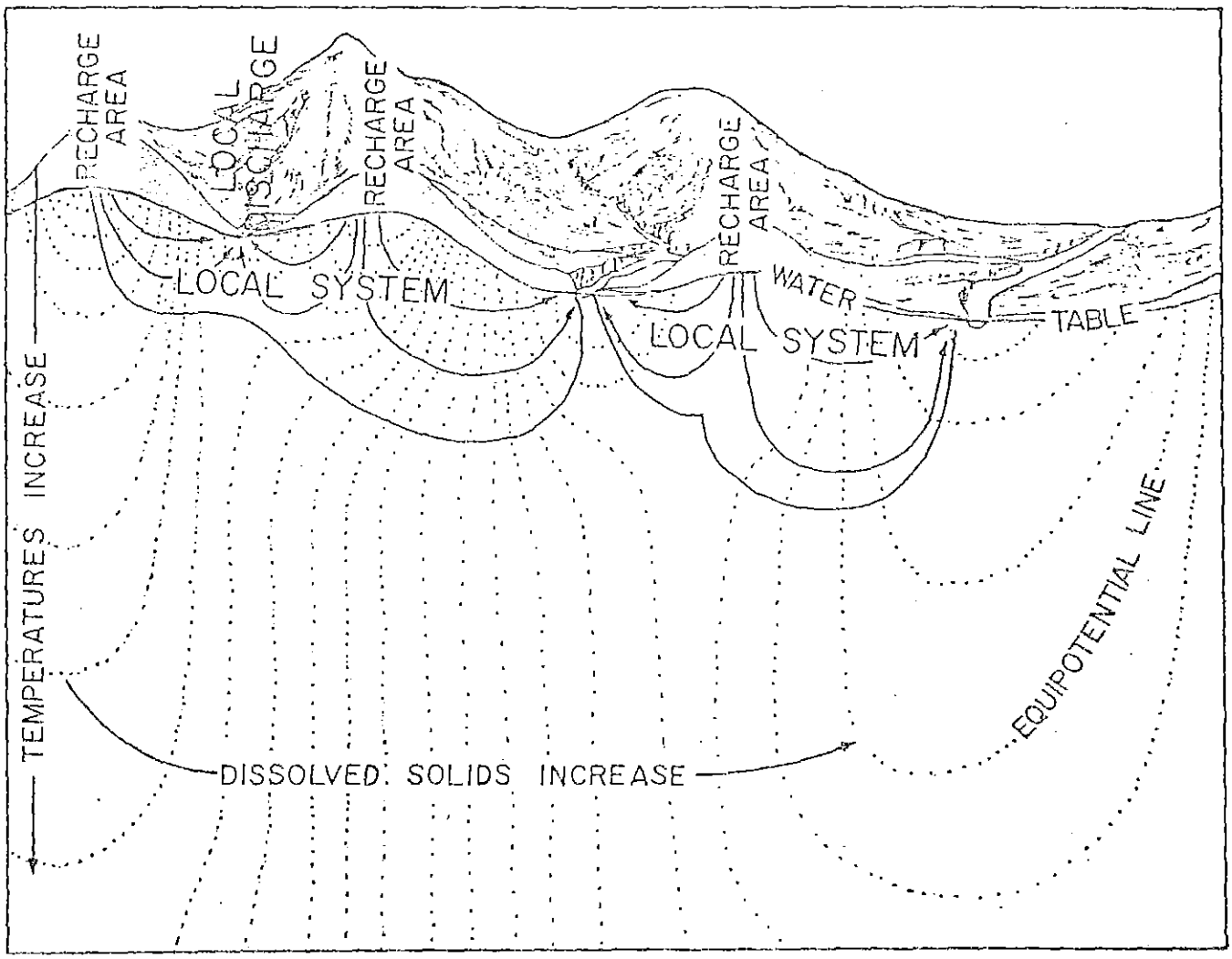

Figure 4. Local groundwater flow systems shown in cross section through a hypothetical groundwater basin.

analyses of groundwater generally makes possible the differentiation between sea water and brackish groundwater.

Natural variations in chemical quality, temperature, and water level fluctuations are all functions of depth, distance, and geologic material through which the groundwater moves. A groundwater body can be divided on the basis of size, flow distance, and common water characteristics into three types of flow systems. These are local, intermediate, and regional groundwater flow systems.

E. Local Groundwater Flow Systems

Groundwater discharged from local groundwater flow systems such as those shown in Figure 4 are recharged in an immediately adjacent recharge area. The local flow system may cover only a few acres and the water may circulate to depths of less than 100 feet below the water table. Discharge areas of local systems in Oregon have characteristic low groundwater temperatures ranging from 35 to 55 degrees Fahrenheit. these water temperatures are indicative of shallow circulation.

Water from local systems generally contains low concentrations of dissolved chemical constituents unless it moves through very soluble rock types. There is a greater risk of oxygen supported bacterial contamination, however, due to the proximity of the shallow flow system of possible surface contaminants. Seasonal precipitation cycles in Oregon and the shallow nature of local systems cause wells completed in these systems to exhibit seasonal water level changes.

F. Intermediate Groundwater Flow Systems

As the name "intermediate" implies, water discharging from intermediate flow systems lies beneath local systems and above regional systems. Intermediate effects are noted in the groundwater's chemical character, temperature, and degree of seasonal water level fluctuation. Groundwater flow systems of intermediate size are characterized by one or more topographic highs and lows, each located between a recharge area and a discharge area. Waters of intermediate discharge areas in Oregon are characterized by temperatures ranging from 45^{o} to 85^{o} Fahrenheit. The quantity of total dissolved solids ranges from 100 to 200 parts per million. Included in the figure for total dissolved solids, among others, are values for sodium (100 to 200 parts per million), and chloride (5 to 50 parts per million). Most of the water pumped from wells in Oregon is found to lie somewhere between these extremes. It will be noted in Figure 5 that intermediate discharge areas are also located in areas of local groundwater discharge. Therefore, some variation in the chemical character of water pumped from neighboring wells of varying depths can be expected.

G. Regional Groundwater Flow Systems

Regional groundwater flow systems lie deep and at the opposite end of the spectrum from local flow systems. A regional flow system receives recharge from the highest water table elevation in the basin and discharges this water in the lowest part of the basin, see Figure 6. Oregon's surface water drainage basins generally coincide with the regional groundwater basins as shown

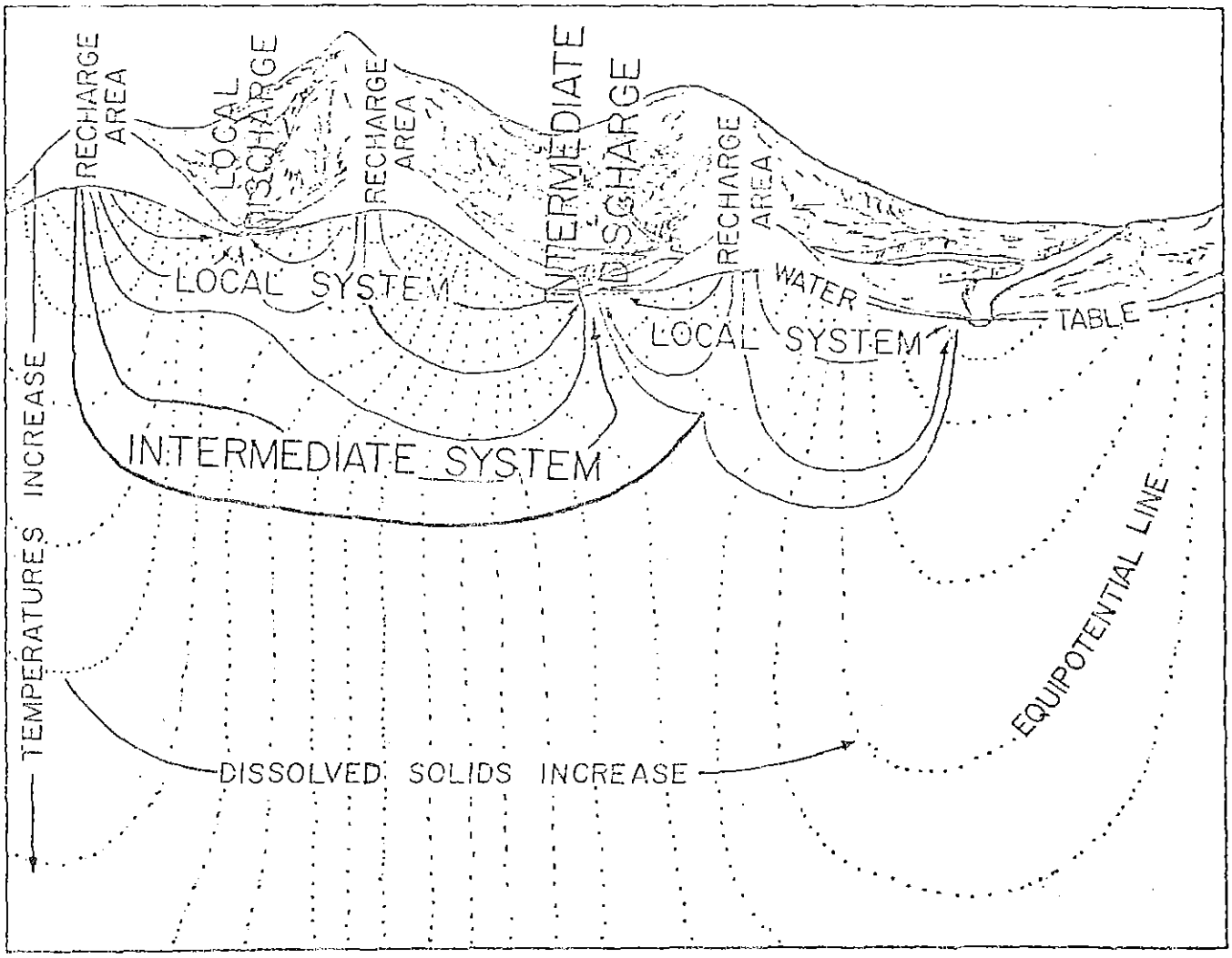

Figure 5. Intermediate groundwater flow systems shown in cross section through a hypothetical groundwater basin.

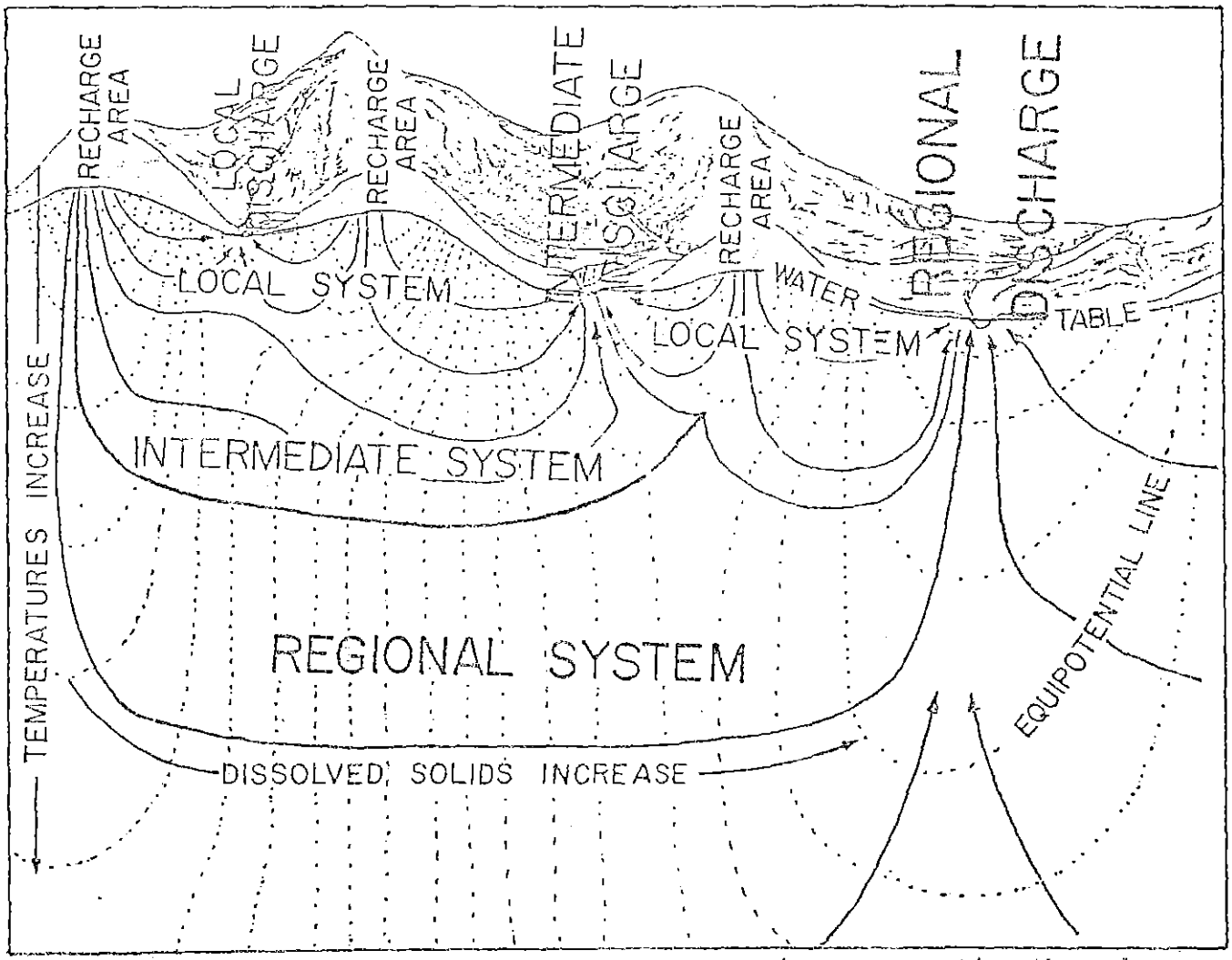

Figure 6. Regional groundwater flow systems shown in cross section through a hypothetical groundwater basin.

on Figure 2. Regional groundwater may circulate to depths in excess of 10,000 feet below land surface, with a resulting increase in groundwater temperature. Temperatures from regional systems generally range from 85 degrees Fahrenheit to over 200 degrees Fahrenheit. The highest water temperature recorded in Oregon from a water well to date is 238 degrees Fahrenheit, from the Pondorosa Nursing Home well in Klamath Falls. Long travel paths, long residence times, and high temperatures aid the solvent properties of water in dissolving chemical constituents, often causing such waters to be unfit for normal domestic uses. The frictional head loss experienced over long travel paths produce a dampening effect on seasonal water level fluctuations. For this reason, water levels on a regional flow system can be expected to fluctuate only very slightly in the absence of local pumping effects.

H. Summary

From the preceding excerpt it is clear that local groundwater flow systems and their associated shallow aquifers are the most sensitive to contamination from surface or shallow subsurface sources.

These aquifers are recharged primarily from incident or local precipitations, and are, in certain instances, not adequately protected by overlying strata. Therefore, any preliminary groundwater protection policy should be aimed at providing protection to these "sensitive" aquifers.

In contrast to the shallow aquifers in the local flow system, the aquifers in the intermediate and regional flow systems are recharged in the higher altitudes where man's activities are limited. These aquifers may or may not be separated by strata of low permeability. A common characteristic of these aquifers is their higher dissolved solids content resulting from longer transit time underground.

IV. BENEFICIAL USES OF AQUIFERS

Generally, groundwater in local flow systems is of inherently high quality and provides a potential for meeting various beneficial uses. The beneficial uses generally served by such aquifers include domestic and livestock water supplies, irrigation, and industrial process waters. Of these uses, however, domestic water normally requires the highest quality. Certain industries, relying on groundwater supplies for various operations, require water quality similar to that used for domestic purposes.

V. WATER QUALITY PARAMETERS OF CONCERN

The question of whether or not groundwater is of suitable quality for beneficial uses depends upon the intended use. As noted earlier, however, the development of groundwater to supply domestic purposes requires generally high quality water. If the natural groundwater quality meets this need with little or no treatment, then the aquifer can meet the needs of other beneficial uses.

A. Bacteria

Waters in the sensitive aquifers usually meet the criteria for domestic use, except occasionally for the presence of coliform bacteria and the potential for other surface contaminants, especially in areas of rapidly draining soils. Thus, it should be emphasized that such groundwaters should not be assumed by the public to be safe potable supplies unless long term and frequent testing confirms such an assumption.

B. Turbidity

Another example which the staff has experienced is turbidity in well water used for domestic purposes. A problem of this nature occurred in Milton-Freewater where a gravel wash water pond was located in rapidly draining soils and upgradient from a community served by individual wells. The subsurface soils were ineffective in filtering out the finer particles of soil, rendering the groundwater unsuitable for domestic use.

C. Nitrate-Nitrogen (NO_3-N)

If sensitive aquifers have the potential to be developed for a domestic supply, the naturally occurring maximum content for nitrate-nitrogen (NO_3-N) should not exceed 10 mg/l, which is the upper limit established by EPA for drinking water. The background concentration of NO_3-N in groundwater is generally less than 1.0 mg/l. Concentrations much higher than this seldom occur naturally. Thus, when NO $-N_3$ concentrations approach the upper

limit, concern develops for its continued use as a potential water supply. Because of the importance of this parameter, it is discussed more fully below.

1. The Significance and Purpose of NO_3-N Standards

Serious and occasionally fatal poisonings in infants have occurred following ingestion of nitrate-containing well waters. This has occurred with sufficient frequency and widespread geographic distribution that standards for nitrates in drinking waters were established, first by the U.S. Public Health Service and currently adopted by EPA.

Nitrate poisoning appears to be confined to infants during their first few months of life. Adults drinking the same water are not affected, but breast-fed infants of mothers drinking such water may be poisoned. The affliction is called methemoglobinemia, commonly known as "blue babies".

Because of the great difference in molecular weight between nitrate and hemoglobin, small increments of nitrite (metabolized from nitrate) produce large quantities of methemoglobin. The margin of safety is narrowed in infants since they have a small blood volume relative to adults.

Since there is presently no method of economically removing excessive amounts of nitrate from water, it is important for health authorities to be aware of locations of high nitrate concentrations in water. The population needs to be warned, and water sources improved or other sources found.

The drinking water standard is 10 mg/l NO_3-N (45 mg/l as nitrate). The necessity for a nitrate-nitrogen drinking water standard as low as 10 mg/l has been extensively debated. However, the most significant result of these discussions has been a proposal (Federal Register, Vol. 44, No. 140, p. 42254) to increase NO_3-N limits to 20 mg/l for "certain non-community systems (with conditions including)....nitrites are not present in the water". The "non-community" systems included in this definition are taverns, certain restaurants, etc., where infants would have little or no opportunity to consume the water. The definition does not include individual well water supplies. Final action on this proposed revision is expected by June 1, 1980.

In relation to the 10 mg/l drinking water standards, DEQ has historically used a 5 mg/l planning (modeling) target (e.g., Clatsop Plains). The Department does not believe it is prudent to use either 10 mg/l for nitrate or 1 mg/l for nitrite as the target for planning purposes, since neither number contains a margin of safety in protecting public health. Accordingly, DEQ has used 5 mg/l nitrate-nitrogen as an upper limit for planning (modelling) provided that a reasonable factor of safety is included in the various assumptions made in the calculation process.
For nitrite, DEQ has urged a wider margin of safety. Providing that a reasonable factor of safety is included in the various assumptions made in the calculation process, the upper planning limit should not exceed 0.2 mg/l.

2. The Purposes and Limitations of Mathematical Groundwater Models

Mathematical models are typically used for groundwater supply (quantity) determinations, contamination (quality) analyses, planning and management, and for investigating or predicting other environmental impacts. Most groundwater problems fall under more than one category. The combined output of a quantity-quality model is a contamination prediction model.

According to EPA (1978), a common feature of all prediction models is that their forecasts are "deterministic" (one value), rather than "probabilistic" (a range of values of varying probability). In most cases, the predictions are also unconditional, meaning that said models contain no restrictions on acceptable values.

A limited number of groundwater models handle the complicated biochemical transformations of nitrogen compounds. The combined nitrogen transformation model predicts concentrations of nitrate in the saturated zone.

Significantly, EPA (1978), contends that such predictions in the saturated zone "tend to underestimate peak values and thus may fail to predict dangerous concentration levels in the neighborhood of surface sources of contaminations and critical arrival times of pollutants in wells".

Such models provide average concentrations. As indicated earlier, maximum concentrations are relevant for nitrate-nitrogen where there is no safety factor in the standard. Thus, if raw data indicate values above averages predicted by the model, they must be compared against drinking water standards and planning targets. Indeed, "missed" high concentrations are actually the numbers of most interest and value.

3. Other Reasons Why Nitrate Concentrations Are Used in Groundwater Studies

Groundwater studies commonly measure nitrate concentrations for reasons other than its toxicity. Nitrate is an effective groundwater movement tracer since it is very soluble and mobile.

In aerobic conditions (i.e., oxygen present), nitrification of ammonia (NH_4) to nitrite (NO_2) occurs quickly. Aerobic conditions occur in the unsaturated zone between the ground surface and the top of the water table. Some denitrification (reduction in nitrogen concentration) can occur when ammonia volatilizes to the atmosphere.

However, studies have shown that subsurface conditions (such as those which exist below septic tank drainfields) are not conducive to denitrification, volatilization, nitrate adsorption, and/or chemodenitrification. As a result, drainfield nitrate concentrations are largely available to

the groundwater, and will remain as measurable nitrates due to the anaerobic (lacking oxygen) conditions in the groundwater.

D. Arsenic

Arsenic is a toxic element which exists naturally in the ground in some areas. It is dissolved by groundwater and may reach concentrations which exceed drinking water standards. Removal is extremely difficult, therefore it can render water unfit for some uses.

E. Other Parameters

Oil, gasoline, organic compounds, and a wide variety of substances can be of concern to groundwater protection. Their presence would be expected only in particular local situations and thus should be considered on a case-by-case basis. Such parameters could impair use by color, taste, odor, toxicity, or aesthetics.

VI. POTENTIAL GROUNDWATER QUALITY PROTECTION MEASURES

In order to protect groundwater quality or to improve degraded quality in the sensitive aquifers, a range of practicable control measures are being used or are available for implementation. These control measures are categorized as follows:

A. Preventative Measures

1. Land Use Planning

Sound land use planning can achieve preservation of existing high quality aquifers or prevent further degradation of existing quality by limiting development in recharge areas or by restricting certain types of development or activity in recharge or areas of high risk impact.

2. Collection, Treatment and Controlled Disposal of Wastes

When development is proposed to occur in areas where risk of groundwater pollution is high (recharge areas), domestic and industrial wastes which could contribute pollutants to groundwater can be collected, treated and conveyed for disposal to an area where risk of ground or surface water pollution is less.

3. Proper Well Construction

Adherence to existing well construction standards will minimize the potential of surface contaminants from reaching the groundwater table or of contaminated groundwaters from reaching zones of high quality water.

B. Improvement Measures

1. Eliminate or Reduce Existing Pollutant Loading, Allow Natural Recovery

In areas where an aquifer has been degraded by identified pollutant loads to the point of impairing the potential beneficial use of the water supply, the existing pollutant loads can be intercepted (such as by sewers), treated, and disposed of so as to protect the aquifer. Such reduction or elimination of the source of pollutant will allow the water quality to improve by allowing the natural recharge process to dilute and disperse the residual pollutants. Such improvement may take many years, even decades, to accomplish.

2. Eliminate or Reduce Existing Pollutant Loading; Remove Accumulated Pollutants

This is the same as identified above except that accumulated pollutants are removed by removal of contaminated soil, pumping to remove polluted water from the aquifer and recharged artifically with unpolluted water.

VII. PRESENTLY IDENTIFIED PROBLEM AREAS

Existing subsurface, solid waste, and hazardous waste guidelines address groundwater protection, and in most instances are adequate. However, in certain areas of the state where a combination of specific hydrologic conditions and existing or proposed high pollutant loadings exists, special control measures are necessary to insure protection of groundwater quality for beneficial uses. Currently, aquifer protection is handled on a case-by-case basis.

Over the past 10 years, the Department staff have presented to the Commission groundwater problem situations resulting from both subsurface domestic waste disposal systems and from industrial waste sources. These problems generally occur because the waste loads disposed of either on or under the ground surface infiltrate through permeable soils and contaminate the aquifer. Natural impairment of uses is also known to exist. Examples of such problem situations are summarized below:

A. Clatsop Plains

The Clatsop Plains area is located in Western Clatsop County and is bounded by the Columbia River to the north, Pacific Ocean to the west, Neawanna Creek and Seaside to the south, Carnation Ditch-Skipanon River and the foothills of the Coast Range to the east. The Plains is underlain by windblown sands with a high hydraulic conductivity. The dune-sand has a shallow soil profile and readily accepts and transmits infiltrating water. Thus, a large available reservoir of good quality groundwater exists under the sand dune complex.

Between 1969 and 1976, the Department staff conducted water quality surveys of the groundwater (wells) and selected surface water (lakes and streams) in the Clatsop Plains. The survey data showed that a few wells were in excess of the allowable maximum concentration of 10 mg/l nitrate-nitrogen (NO_3-N), but that there is a trend toward increased NO_3-N as housing densities, dependent upon septic tank drainfield disposal systems, increased. From these data, the Department concluded that the trend of groundwater degradation could only become more acute with increased or continued construction of new housing in subdivisions of urban densities with conventional on-site disposal systems. Therefore, in April, 1977, the EQC adopted a rule prohibiting the issuance of new permits for the construction of subsurface systems or favorable reports of evaluation of site suitability in selected areas of Clatsop County where there are unconsolidated sand or unconsolidated loamy sands. This restriction, however, was subject to modification or repeal on an area-by-area basis upon petition by the appropriate local agency or agencies. The petition would be expected to provide reasonable technical evidence that development using subsurface sewage disposal in accordance with single family unit equivalent densities specified in the local land use plan for the area would not cause further groundwater or surface water quality degradation. With its adoption of the rule, the Commission stated its intention to consider such alternatives as might later be proposed by local government or in the light of further information regarding the risk of contamination.

In August, 1977, the Department sent a letter to the Clatsop County Board of Commissioners with the rationale for establishing the acceptable nitrogen species levels in groundwater for planning purposes. The federal publication "Quality Criteria for Water, EPA-440/9-76-023" recommends 10 mg/l NO_3-N as an upper limit for domestic water supplies. This publication also states, "waters with nitrite-nitrogen concentrations over 1 mg/l should not be used for infant feeding".

The Department did not believe it was prudent to use the limits cited above for planning (modelling) purposes since they contain no margin of safety in protecting public health. For nitrate-nitrogen, it was believed that 5 mg/l NO_3-N may be used as an upper limit for planning purposes providing that a reasonable factor of safety is included in the various assumptions made in the calculation. For nitrite-nitrogen, it was felt that a wider margin of safety is desirable. Thus, the Department recommended that the upper limit for planning purposes should not exceed 0.2 mg/l NO_2-N, again providing that a reasonable factor of safety is included in the various assumptions made in the calculation process.

These limits for nitrogen species were used by a groundwater consultant to estimate the carrying capacity of the Clatsop Plains sand-dune aquifer in August, 1977. The consultant made two recommendations based on the planning limit for NO_3-N as follows:

1. "Limit sub-basin septic tank-drainfield densities initially to not more than one per 1.2 acres if the Department of

Environmental Quality limit of 5 mg/l NO_3-N is to be met.

2. Reduce densities of drainfields in critical flow paths and other areas where the existing NO_3-N input exceeds levels which would result in more than 5 mg/l."

In October, 1977, the Commission modified the rule, at the request of Clatsop County, to allow development not to exceed one acre per family density equivalent of sewage treatment in certain unincorporated areas covered by the original prohibition. The rule was again modified in June, 1978, to allow for one acre density development of systems to serve planned unit developments under the Unit Ownershp Law. At that time it was also discovered that there was the need to change from April 1, 1977, to October 27, 1977, the date after which a one-acre parcel could not receive a permit if it was formed at the expense of a developable parcel of less than one acre.

In October, 1978, the EQC again modified the rule, allowing the city of Gearhart a maximum of 57 single family equivalent units to be permitted on subsurface sewage disposal systems based upon procedures developed by the city of Gearhart and DEQ.

Currently a study is underway in Clatsop Plains to monitor the groundwater quantity and quality relationships to obtain the necessary data for refining the calculated aquifer carrying capacity.

B. "East" Multnomah County

An area of approximately 30 square miles in central Multnomah County (east of Portland) is currently unsewered. Development has occurred over the past 30-50 years utilizing individual on-site sewage disposal systems, predominantly cesspools. An estimated 10 million gallons of sewage per day is presently discharged into the underlying porous gravels.

Most of the developed area is located on a relatively level terrace made up of Pleistocene fluviolacustrine sediments. Partially cemented gravels of the Pliocene Troutdale Formation underlie the terrace deposits. Both of these units are generally excellent aquifers where saturated. The depth of water in the unsewered area ranges from about 100-200 feet in the southern terraced area to less than 10 feet in much of the northern area underlain by younger, floodplain, terraces adjacent to the Columbia River.

The area of concern is a regional groundwater discharge zone which receives water from the Cascades as well as local hills bordering the area. The aquifer receives approximately 50,000 acre-feet of annual recharge from precipitation in the 30 square mile area. Groundwater production capabilities could therefore range from 50,000 acre-feet (16,335,000,000 gallons) to 100,000 acre-feet (32,670,000,000 gallons) annually.

Presently several water districts utilize the aquifer for domestic water supply purposes. The city of Portland has recently filed for a water right for approximately 200 million gallons per day (MGD). The aquifer would be utilized as an alternate and supplemental source to Bull Run and provide for continued growth in the metropolitan area.

In 1971 and 1973, the Department conducted water quality studies of the Columbia Slough. The chemical data obtained during these studies revealed high concentrations of nitrate-nitrogen (NO_3-N) in the springs forming the headwaters of the South Arm of Columbia Slough. The individual subsurface sewage disposal systems lying directly south of the South Arm of Columbia Slough were presumed to be the prime contributors to the NO_3-N levels. As a result the Department, assisted by the State Engineer's Office, (now the Water Resources Department), conducted a water quality-hydrogeological evaluation of the central Multnomah County area. Data was collected for the period June, 1974, to July, 1975. The U.S. Geological Survey (USGS) and city of Portland Bureau of Water Works, under its exploratory program have also collected additional data from some of the same and other wells within this area from 1975 to 1977.

These surveys revealed that NO_3-N levels were significantly higher in the unsewered area (4 - 9 mg/l) than in adjacent sewered areas in Gresham and Troutdale. The higher concentrations were found in the private shallow wells, springs and municipal wells developing water from the upper portions

of the aquifer, while the deeper wells revealed concentrations of less than 1.0 mg/l NO_3-N. The subsurface disposal of sewage is considered to be the prime contributor of NO_3-N to the groundwater and provides an enrichment quality to the waters in the South Arm of Columbia Slough.

At its February and August, 1978, meetings, the EQC instructed the staff, in cooperation with Multnomah County, to develop a plan for the protection of the east county groundwater aquifer. In December, 1979, the Multnomah County Board of Commissioners adopted the East County Groundwater Plan as an ordinance.

The adopted groundwater plan calls for 90 percent of all development in the area to be sewered by 1990, but permits new development on cesspools as a temporary measure. Accomplishment of this goal should result in a long-term improvement of groundwater quality and permit the area to fully develop under the Multnomah County Land Use Plan.

Approval of this plan by the EQC and DEQ is pending.

C. River Road-Santa Clara

The River Road-Santa Clara area lies immediately north of Eugene in Lane County. The area topography is virtually flat (0 - 3% slope) with several filled river meander channels cutting through the area oriented to the north-northwest.

The soils dominant in the area have moderate to high permeability in the upper profile of 36 to 48 inches from the ground surface. Absorbency is good, with silty clay loam textures with good pore size and distribution. Some areas have restrictive silty clays occurring at 36 to 48 inches from the ground surface. In these areas the soils may be somewhat restrictive to water movement.

Throughout the area, gravel beds occur at depths ranging from 3 to 9 feet from the ground surface. These gravel strata vary from clay cemented gravels to very clean, rapidly permeable material.

On the west and north sides of the area, restrictive clays occur at 12 to 30 inches from the ground surface. Water perches on the ground surface in these areas.

Highly porous and permeable substrata materials, a seasonably high and locally recharged groundwater table, and excessively to moderately well-drained soils (including clean gravels), adversely affect the suitability of the River Road-Santa Clara area for the installation of high density subsurface sewage disposal systems.

The area is underlain by geologically recent, unconsolidated, valley-filled alluvium that consists primarily of discontinuous layers and lenses of porous and permeable sands and gravels with minor amounts of silt and clay.

These deposits are part of the Willamette River Valley alluvial aquifer that is the primary source of groundwater for industrial, domestic, and agricultural uses in the Willamette Valley Region.

A major source of recharge to this groundwater system is the infiltration and downward percolation of precipitation that falls directly on the valley floor. As a result, the water table beneath the River Road-Santa Clara area fluctuates in response to seasonal variations in precipitation, with the late winter-early spring water table rising to within 5 to 10 feet of land surface. This recharge is enhanced by moderately to excessively drained soils that offer little impedance to the downward percolation of soil moisture.

Once in the groundwater flow system, water beneath the River Road-Santa Clara area moves generally northward toward downgradient discharge points such as wells, streams, rivers, and other surface water bodies. There is a direct hydraulic connection between surface and groundwater in the River Road-Santa Clara area. The nature of the connection (the discharging of groundwater to surface water bodies, or the infiltration of surface water into the groundwater system) is dependent on site specific characteristics and/or seasonal variations in ground and/or surface water levels.

In February, 1978, the Lane County Board of Commissioners requested imposition of a moratorium on new subsurface sewage system construction permits and favorable reports of site suitability within the River Road-Santa Clara area.

A moratorium was the only apparent way to temporarily stop increase of pollution pending development of a plan for prevention and reduction of groundwater pollution.

In response to the Board of Commissioner's request, and following a public hearing, the EQC in April, 1978, adopted a rule and order, OAR 340-71-020(9), which established a moratorium on issuance of permits or feasibility statements for new subsurface sewage disposal systems in the River Road-Santa Clara area of Lane County. Subsequent action by the EQC in July, 1979, amended the rule by relaxing the moratorium for certain lots on record either on or before April 28, 1978, for bedroom additions to existing residences and for system repairs.

A groundwater study for the River Road-Santa Clara area was completed in 1980, in which a model was developed to assist in projecting waste loading impacts and development alternatives.

Action by the EQC in response to this study is pending.

D. La Pine

The La Pine area of southern Deschutes County is currently charaterized by scattered development around the unincorporated core community of La Pine. Approximately 14,000 plus lots ranging from 0.5 to 5 acres in size are currently available for development. In almost all cases individual water supply and sewage disposal systems are required. No areawide community water or sewer utilities are currently in operation or are proposed for the future.

Due primarily to availabilaity of shallow potable groundwater, most domestic wells are within 40 feet of the ground surface. Septic tank drainfield systems generally are 2-3 feet below the ground surface. Many soils in the project area are highly porous and exhibit rapid drainage characteristics.

Recent water samples analyzed by DEQ indicate elevated nitrate levels in some domestic wells. Sufficient data exists to warrant concern from both a water quality degradation and a public health standpoint. However, the extent and magnitude of the problem cannot be defined with the data available. Thus a comprehensive study is necessary. The study area likely will include the hydrology regime from south of La Pine to near Bend.

Such a study is now proposed to be funded with federal funds under Section 208 of the Clean Water Act. Deschutes County will carry out the study.

E. North Florence Dunal Aquifer

The North Florence Dunal Sheet is located near the mouth of the Siuslaw River and is generally bounded by the Siuslaw River on the south, the Pacific Ocean on the west, Heceta Head on the North and the outcropping of Tyee Sandstone on the east. This covers an area of approximately 18 square miles, and includes the City of Florence, the unincorporated areas of Heceta Junction and Heceta Beach, campgrounds in the Siuslaw National Forest and other unincorporated areas.

The city of Florence has the only treatment facility in the study area and only treats waste from within city limits (3.3 square miles). All of the unincorporated areas use on-site treatment systems, predominately septic tanks and drainfields. The area has an adopted comprehensive plan which calls for extensive development with residential densities ranging from eight dwelling units to the acre to one dwelling unit to the acre. The National Forest also plans for the development of campgrounds and other recreational facilities within the area.

The impact of total development on the quality of the water in the aquifer may adversely affect future use. The most feasible source of fresh, high quality water for potable use in the area is the dunal sheet aquifer. It is a concern of local citizens and local elected officials that the most feasible source of fresh water north of the Siuslaw River not be further degraded and alternatives to possible impacts be implemented. Protection of this sole source aquifer is of urgent importance.

The North Florence Dunal Sheet has been recognized as a groundwater study area by the Oregon Department of Environmental Quality. A 208 grant funded study is underway to identify and establish water quality data and sufficient aquifer characteristics to identify current pollution sources, predict future impact of development and develop strategies to protect and enhance water quality. If an existing problem or potential impact is identified, this study and the resulting report will be used to assist local planning groups, Lane County and the city of Florence in finding alternative plans or courses of action to mitigate current problems and prevent future adverse impacts.

F. Milton-Freewater

A sand and gravel operation in the Milton-Freewater area utilizes gravel wash water disposal ponds as a part of its operation. The ponds are located over unconsolidated alluvial deposits which constitute a highly permeable and porous shallow groundwater aquifer that supplies water from a local groundwater flow system to numerous wells for domestic, agricultural, and industrial uses. A narrow turbidity plume extended from the area of the wash water disposal ponds downgradient for more than a mile. Individual household wells used for domestic water were contaminated with particle fines which could not be effectively filtered out by the porous subsoils.

This problem situation is currently being handled through the Water Pollution Control Facilities Permit. The Permit requires that all treatment ponds must be permanently sealed to prevent seepage of waste water through the bottom and sides. In addition, the permit prohibits the discharge of all waste waters either directly or indirectly to surface or subsurface waters.

G. La Grande

A railroad company in La Grande operates a refueling facility, which in the past has had oil spilled on the ground reach the shallow groundwater aquifer. The subsoils in the La Grande area are composed of fanalluvium (clay, silt, sand, and gravel). Nearby residents relying on the groundwater for domestic purposes, have complained of oil contaminating their water supply.

This problem situation is currently being handled by the Department through the Water Pollution Control Facilities Permit. The permit requires that diesel and other oil products must be prevented from entering either surface water or groundwater by the following procedures:

1. Providing spillage collection equipment in areas where oil products are frequently handled, transferred or easily spilled.
2. Removing oil products that have spilled onto the ground surface as quickly as possible.
3. Separating oil products from wash and runoff waters that have been contaminated with oil products.
4. Performing leak checks on oil storage and piping.

H. Turner (after Sweet and Fetrow, 1975)

A former lumber company, which operated in Turner until 1974, had been disposing of its wood waste in an abandoned gravel pit just east of Turner. Before the company resorted to using the gravel pit to dispose of its wood waste, it operated two wigwam waste burners to rid the waste products. The wigwam burners were phased out as a result of the air quality requirements of the Mid-Willamette Air Pollution Authority.

During the summer of 1972, the abandoned gravel borrow pit, 10 to 12 feet deep and from 2 to 3 acres in area, was filled with wood wastes including about 3,000 tons of hemlock bark. Pollutants subsequently leached from the wood wastes and grossly contaminated

a number of downgradient domestic water supplies, rendering them nonpotable.

Most of the groundwater being developed in the area is extracted from the recent alluvial deposits. The depth of the gravel ranges from 50 feet to at least 100 feet in wells south of the disposal site. The preponderance of shallow driven wells, as opposed to drilled wells in the area is evidence of both the shallow depth of developable groundwater and the open and unconsolidated nature of the alluvial deposits.

The static water level in the alluvial material ranges from at or near the land surface in low-lying areas during the winter months, and from 2 to 10 feet below land surface during the summer. The gravelly substrata have high hydraulic conductivities. Shallow, lateral, groundwater flow rates in similar gravels in the Willamette Valley have been found to be several feet per day.

Wood waste leachates are commonly characterized by lignin-tannin (measured as tannic acid), oxygen demanding materials, color, and odor. In this study, lignin-tannin concentrations in the groundwater ranged as high as 7.5 mg/l. According to McKee and Wolf (1963), a tannic acid content of 2 to 4 mg/l imparts a woody taste and odor to water. Odors and a yellow-brown discoloration in this investigation were observed to occur at levels as low as 0.4 mg/l.

Iron and manganese also increased markedly compared to natural background concentrations, ranging as high as 13 mg/l and 106 mg/l, respectively. These metals increased in content because the volatile organic acids from the wood waste increased the total acidity of the groundwater, causing the dissociation of some iron and manganese from the alluvial substrata through which the contaminated groundwater was passing. According to the National Academies of Sciencies and Engineering (1973) both iron and manganese in water supplies above 0.3 mg/l and 0.05 mg/l, respectively are objectionable because of its effect on taste, staining of plumbing fixtures, spotting of laundered clothes, and accumulation of deposits in distribution systems.

In August, 1972, the area affected by the contaminated groundwater covered about 4 acres and extended nearly 1,000 feet downgradient from the disposal site.

By late January, 1973, the contaminated plume had migrated laterally to affect an area of about 15 acres while extending over 1,500 feet downgradient. The lateral migration of the plume was attributed to a seasonal change in the local flow system. At least eleven domestic water supply wells were rendered nonpotable by this pollution.

In addition to the contamination of the groundwater by wood waste leachate, the aquifer was also bacteriologically contaminated by the existing septic tank and subsurface drainfield disposal systems. As a result of these pollution sources, the affected homes depending upon groundwater for domestic purposes were

subsequently served with potable water through the city of Turner's water distribution system.

Before this mill closed down, it was not required to remove the wood waste from the borrow pit because the water table had been degraded by the leachings of the wood residues. The company was requested to cover the site with soil and grade it to reduce the percolation of surface water to the fill.

It is expected that the future migration of the degraded groundwater will result in further pollution of groundwater downgradient from the disposal site. This degraded groundwater may affect other wells in the area before adequate attenuation of the pollutants occur. If the wood waste had been removed from the landfill, it would undoubtedly reduce the long-term degradation of the groundwater aquifer.

I. Bethel-Danebo Landfill

From 1963 through 1968, the Bethel-Danebo area was operated as a sand and gravel company. The operation of this site as a rock quarry created some deep pits. For the next six years, these pits were used to dispose of wood waste from nearby wood product mills in the Eugene-Springfield area as a result of the shutdown of wigwam waste burners. Thus, the accumulated water in the pits was characteristically similar to that in log ponds (i.e., high in BOD, COD, color, turbidity, and suspended solids). In order to keep the wood debris from being floated out with the accumulated waters in the pits, it was necessary to dewater the pits on a year-round basis. From November through May, the operator was

permitted to discharge the leachate bearing waters to an unnamed tributary of Amazon Creek. During the summer months, however, the waste waters in the pits were discharged to the Eugene sewerage system for treatment and final disposal.

In 1974, Lane County began operating the Bethel-Danebo site as an interim sanitary landfill, accepting both demolition and household solid waste. Because of the accumulated surface and groundwaters in the pits, the county practiced the same waste water disposal method as its predecessor. In the spring of 1977, this landfill site was completed and graded to minimize the percolation of surface water and the erosion rate of soil. However, the solid waste in the pits can still be expected to contribute leachates indefinitely to the groundwater aquifer because the water table reaches within a few feet of natural ground elevation.

J. Lane, Linn, and Malheur Counties

Arsenic concentrations in excess of 0.05 mg/l is sufficient reason to reject the water as a drinking supply. High arsenic occurs naturally in groundwater in an area near Cottage Grove and Eugene in Lane County. Similar concentrations occur in some wells in the Lower Santiam Basin in Linn County. A cooperative preliminary investigation by the Malheur County Health Department, Bureau of Land Management, and U.S. Geological Survey, in 1978-1979, revealed that some wells used for domestic and livestock water supplies yielded waters high in arsenic content. These wells are located near Vale, Ontario, and Nyssa, in Malheur County. Since these examples of high arsenic found in the groundwater is a natural phenomenon, no detailed studies or control actions are anticipated.

VIII. GROUNDWATER QUALITY MONITORING

Historically, groundwater studies in Oregon have been undertaken by two agencies--the U.S. Geological Survey and Oregon Water Resources Department. The studies performed by those agencies primarily describe the geohydrologic characteristic of a particular basin relative to its potential supply to meet the beneficial uses. The water quality data available in these studies is generally limited, however.

The water quality data in the study reports generally include the following chemical analyses: Temperature, silica, iron, manganese, aluminum, calcium, magnesium, sodium, potassium, bicarbonate, carbonate, sulfate, chloride, fluoride, nitrate, phosphate, boron, dissolved solids, hardness, specific conductance, pH, color, and sodium-adsorption ratio (SAR). Minor elements in the chemical analyses of groundwater may also include the following: dissolved oxygen, free carbon dioxide, lithium, strontium, barium, chromium, copper, lead, nickel, titanium, vanadium, arsenic, silver, iodide, and bromide. In some areas, depending upon the geologic unit associated with groundwater, the radioactivity and radioactive chemical analyses may be performed.

In past years, the communities that developed groundwater for supply purposes had their well water analyzed by the state Sanitary Authority (predecessor to DEQ). These community supplies were analyzed infrequently over time. Besides, the supplies were not generally strategically located within a basin to assess the potential impact of induced contamination problems. Thus, the historical data available from community wells represent a minimum network of monitoring locations. To date the DEQ has collected and analyzed relatively few

groundwater samples. Groundwater analyses are usually performed because of complaints of water supply contamination (i.e., turbidity in Milton-Freewater, taste and odor in Turner, oil in La Grande), concern for rising concentrations of nitrate-nitrogen and bacterial contamination resulting from high density development using septic tank and drainfield systems (i.e., La Pine, River Road-Santa Clara, and Clatsop Plains) and unexplained high concentrations of nitrate-nitrogen in areas of groundwater discharge (i.e., East Multnomah County). thus, the staff generally has been responding to problem situations as they arise rather than to prevent situations from reaching problem proportions.

In spite of the excellent work the U.S. Geological Survey and the Water Resources Department have done on ground water studies in Oregon, additional effort is needed to provide a comprehensive understanding of the groundwater aquifers. A need exists to define the areal extent of the shallow aquifers in Oregon. Also, a monitoring program should be designed so that the annual variation of the groundwater quality can be evaluated relative to its potential to serve the various beneficial uses. The Department staff plans to work cooperatively with other agencies to accomplish these two goals.

Recently the Oregon Water Resources Department contracted with the U.S. Geological Survey to conduct further detailed basin groundwater studies. Currently, a prototype study, which will later serve as a model for studies in other Oregon basins, is underway in the Rogue Basin. These studies have several broad objectives as follows:

A. Determine the total quantity of groundwater supply available for appropriation which has not yet been appropriated.

B. Determine the natural groundwater quality and the induced water quality problems, and

C. Develop computerized models of the groundwater system for prediction and management purposes.

IX. CONCLUSIONS

The following conclusions are summarized from the information presented in this report:

A. Groundwater is a valuable natural resource which can be polluted so as to impair beneficial use.

B. The EQC and DEQ are directed by legislative policy to take such actions as are necessary to prevent and abate pollution of groundwater (as well as surface water) so as to protect beneficial uses of such waters.

C. Three general types of groundwater flow systems exist with characteristics as follows:

1. Local Groundwater Flow Systems--These are recharged in close proximity to discharge areas, are shallow in their circulation, generally possess the highest natural quality and lowest temperatures, and are subject to the highest risk of pollution from man's traditional activities. As a result, water supplies developed from shallow aquifers associated with local groundwater flow systems in particular should not be assumed safe for domestic use without treatment unless periodic sampling and analysis demonstrates the water to be of acceptable quality.

2. Intermediate Groundwater Flow Systems--These systems lie below the local flow systems, are recharged at higher elevations than local flow systems, may be separated from local flow systems by a restrictive flow layer, possess a quality which is good but is generally lower or less desirable than local flow systems (higher temperature and dissolved mineral content).

3. Regional Groundwater Flow Systems--These systems lie below the intermediate flow systems and extend to greatest depth, are recharged at the highest part of the basis where man's abilities are limited, discharged at the lowest part of the basin, have the poorest natural water quality (high dissolved solids and higher temperatures), and may not be suitable for some beneficial uses.

D. Dominant beneficial uses of groundwater include domestic use (drinking water), livestock watering, irrigation, and industrial process water (including cooling). The highest quality requirement is generally associated with domestic use.

E. Major pollutants of concern with groundwater include bacteria, turbidity, nitrate nitrogen, arsenic, and a wide variety of less frequently occurring pollutants such as petroleum products, toxic or hazardous substances and color, taste, or odor producing substances.

F. Groundwater quality protection measures are being used or are available for use to prevent and abate quality degradation. These include Land Use Planning to limit pollutant entry to groundwater; collection, treatment and disposal of domestic and industrial wastes to preclude pollutant entry into groundwater; proper construction of wells to prevent transfer of contaminated surface or groundwaters to uncontaminated deeper groundwaters; and actual removal of accumulated pollutants from the soil column and groundwater.

G. Groundwater problems have been identified in a number of areas including Clatsop Plains, East Multnomah County, River Road-Santa Clara, La Pine, North Florence, Milton-Freewater, La Grande, Turner, and Lane, Linn, and Malheur counties. In each case, threat to or impairment of domestic use has been the concern. Prevention and abatement actions have been instituted in some areas. More detailed studies are underway or planned in other areas. Where the problem is of natural origin, no further action is anticipated.

H. No systematic program of groundwater monitoring presently exists. Problem areas have been identified as a result of complaints or special studies growing out of waste disposal concerns. Better information on location of various groundwater flow systems is needed to permit design of an effective, efficient monitoring program for long-term quality trends.

X. PROPOSED GROUNDWATER QUALITY PROTECTION POLICY

The following statements of policy shall guide cities, counties, industries, citizens, and the Department of Environmental Quality staff in their efforts to protect the quality of groundwater:

A. It is the policy of the EQC that impairment of the natural quality of groundwater by pollution from man's activities be prevented or controlled within practicable limits to protect presently recognized beneficial uses and assure protection of the resource for beneficial use by future generations.

B. Consistent with general policies for protection of surface water, highest and best practicable treatment and control of sewage, industrial wastes, and landfill leachates, shall be required so as to minimize potential pollutant loading to groundwater. Among other factors, energy, economics, public health protection, potential value of the groundwater resource to present and future generations, and time required for recovery of quality after elimination of pollutant loadings may be considered in arriving at a case-by-case determination of highest and best practicable treatment and control. For areas where urban density development is planned or is occurring and where rapidly draining soils overlay local groundwater flow systems and their associated shallow aquifers, collection, treatment and disposal of sewage, industrial wastes, and leachates from landfills will be deemed highest and best practicable treatment and control unless otherwise approved by the EQC pursuant to C. or D. below.

C. Controls more stringent than those identified in paragraph B. above may be required if necessary to assure protection of beneficial uses. Designation of a sole source aquifer pursuant to the federal Safe Drinking Water Act will be recognized as one possible mechanism for establishment of more stringent controls.

D. Less stringent controls than those identified in paragraph B. above may be approved by the EQC for a specific area if technical studies show that lesser controls will adequately protect beneficial uses.

E. Disposal of wastes onto or into the ground in a manner which allows potential movement to groundwater shall be authorized and regulated by either a Water Pollution Control Facility (WPCF) Permit, a Solid Waste Disposal Facility Permit, or an On-site (Subsurface) Sewage Disposal System Construction Permit, whichever is appropriate.

1. WPCF permits shall specify appropriate groundwater protection requirements and monitoring and reporting requirements. Such permits shall be used in all cases other than for those covered by Solid Waste Disposal Facility Permit or On-site (subsurface) sewage disposal permits.

2. Solid Waste Disposal Facility Permits shall be used for landfills and sludge disposal not covered by NPDES or WPCF

permits. Such permits shall specify appropriate groundwater protection requirements and monitoring and reporting requirements.

3. On-site Sewage Disposal System Construction permits shall be issued in accordance with adopted rules. It is recognized that existing rules may not be adequate in all cases to protect groundwater quality. Therefore, as deficiencies are documented, the Department shall propose rule amendments to correct the deficiencies.

F. Where groundwater quality is being degraded by waste disposal practices, the Department will require individual sources to improve or modify waste treatment and disposal practices as necessary to reduce the pollutant loading to groundwater. Such requirements will be implemented by permit condition or repair order as appropriate. For areas where an areawide approach is essential (rather than an individual approach), the Department will seek cooperation of the responsible local government to abate the problem. A stipulated agreement should be used in such cases to delineate the planned correction program and timetable. The Department will resort to more formal pollution abatement actions such as abatement orders, civil penalties, etc., only if voluntary compliance efforts are not successful.

G. The EQC recognizes that orderly financing and implementation of a long-range groundwater improvement and protection plan may necessitate some increased quality degradation for a short period

of time. The EQC may approve an overall protection plan which allows limited short-term further degradation provided:

1. Beneficial use impairment will not be significantly increased,

2. Public health risk is not significantly increased,

3. Irreparable damage to the groundwater resource does not occur,

4. The comprehensive groundwater protection plan has been duly adopted by the responsible local government,

5. A financing plan has been developed and adopted to assure implementation, and

6. The responsible local government has committed to implement the program in accordance with a timetable which is included in a stipulated agreement with the EQC.

H. The Department should attempt to identify sensitive aquifers (areas where shallow aquifers underlay industrial sites, urbanizable areas, developing or planned rural residential concentrations, etc.), and assure that appropriate studies and planning actions are undertaken to protect groundwater quality.

I. In order to assure maximum reasonable protection of public health, the public should be made aware that groundwater--and most particularly local flow systems or shallow groundwaters--should not be assumed to be safe for domestic use unless quality testing demonstrates a safe supply. Domestic water drawn from shallow aquifers should be tested frequently to assure its continued safety for use.

J. The Department should seek the assistance and cooperation of the Water Resources Department to identify aquifers and design an ambient monitoring program adequate to determine long-term quality trends for significant groundwater flow systems.

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WL1025.B
4/34/80

Environmental Quality Commission

POST OFFICE BOX 1760, PORTLAND, OREGON 97207 PHONE (503) 229-5696

TO: Environmental Quality Commission

FROM: Director

SUBJECT: Agenda Item No. J, April 18, 1980
Environmental Quality Commission Meeting.
Public Hearing As To Whether To Continue, Repeal Or Modify Oregon Administrative Rule (OAR) 340-71-020(9) As It Relates To The Current Septic Tank Moratorium In Effect In The River Road/Santa Clara Area Of Lane County.

Background and Problem Statement

1. On April 28, 1978, the Environmental Quality Commission adopted a rule and order, OAR 340-71-020(9), which established a moratorium on issuance of permits or feasibility statements for new subsurface sewage disposal systems in the River Road/ Santa Clara area of Lane County. This action was requested by the Lane County Commission in a February 28, 1978 resolution.

2. On April 3, 1979, the Lane County Commission passed a resolution requesting that the moratorium be terminated. That resolution is still pending.

3. On July 27, 1979, the Commission amended the rule (Attachment 1). The amendment relaxed the moratorium for certain tax lots of record on or before April 28, 1978, for bedroom additions to existing residences, and for system repairs. A more detailed chronology of relevant events is shown in Attachment 2.

4. The July 27 Commission further recommended that the River Road/ Santa Clara Groundwater Study be completed. The estimated completion date was December 31, 1979. The Commission expected a staff report as quickly as possible after thorough analysis of the final report.

5. On February 21, 1980, the Lane County Board of Commissioners reaffirmed their request that the EQC remove the moratorium on construction of subsurface sewage disposal systems that meet state (DEQ) standards.

   The Board also:

   a. Directed county staff to implement a public information program warning persons about potential health risks associated with shallow aquifers susceptible to contamination.

   b. Directed county staff to review the adequacy of sewage collection plans in the area, identify interim sewage treatment methods that will accommodate growth and protect public health and public waters, and identify potential governmental structures to construct and operate any interim facilities.

   c. Lifted the 1971 subdivision moratorium subject to results of the above staff actions.

   d. Ordered a feasibility study for a county service district for waste management and other services.

6. The River Road/Santa Clara Groundwater Study, Final Technical Report, prepared by the consultants (H. Randy Sweet), was submitted to DEQ on February 29, 1980. This EQC staff report builds upon Sweet's Final Technical Report. A chronology of significant 208 grant activities is shown in Attachment 4.

7. Both Sweet and Lane County of Governments (LCOG) have prepared conclusions and recommendations regarding River Road/Santa Clara. Where they may be listed in this staff report, they are distinguished from one another as "Sweet" and "LCOG" respectively.

Evaluation and Alternatives

Certain elements of the proposed statewide groundwater protection policy are reviewed in this section, and related to the River Road/Santa Clara Groundwater Study findings.

Types of Groundwater Flow Systems and Technical Considerations to Protect Them From Pollution.

Groundwater protection is becoming a national issue, and is of increasing concern in Oregon. Unlike surface waters which travel great distances in short time periods and are readily renewed, groundwater migrates slowly and is not as readily replenished. Thus adverse impacts on groundwater quality can be severe and have long lasting negative effects.

Groundwaters that require little or no treatment for drinking water purposes are an especially valuable renewable natural resource.

Aquifers are recharged by precipitation seeping through the ground and percolating down to the water table. A regional groundwater flow system is recharged from the highest water table elevations in a basin, and discharges at the lowest part. Oregon mountain areas recharge this type of system. The water's generally deep location insulates the regional aquifer from other groundwater systems and man's activities. But because of its long travel time and distance, dissolved chemicals accumulate and frequently make the water unfit for domestic (drinking) uses.

In contrast, a local groundwater flow system is recharged within or immediately adjacent to the local area itself. Accordingly, it is the uppermost water table, and most readily available for use. It is usually also the highest natural quality since it has not accumulated dissolved chemicals. But because it is shallow, it is closer to man-caused contaminant sources, and in certain cases may not be adequately protected from man-caused pollutants.

Thus the local groundwater flow system usually is the highest natural quality, but the one most susceptible to degradation and most in need of protection. The highest concern is in developed areas where pollutants such as septic tank effluent, are generated.

Existing subsurface sewage disposal regulations address groundwater protection, and are adequate in most cases. However, in certain areas of Oregon where a combination of specific hydrogeologic conditions and existing or proposed high density development exists, special additional control measures are necessary to insure protection of groundwater quality for beneficial uses. The key beneficial use is drinking water supply.

Of particular concern are sensitive local groundwater flow systems where past subsurface sewage disposal system construction practices have

degraded, and continue to degrade, groundwater quality. This is the case in the River Road/Santa Clara area.

In such cases, existing subsurface rules do nothing to improve current groundwater problems resulting from existing development. And the rules may be inadequate to insure that new systems will not increase contaminant levels. Health hazard potential must be considered.

One method to protect against further groundwater degradation is to limit nitrate-nitrogen loadings from new development. This type of limitation is in effect in certain portions of the Clatsop Plains area.

In addition to fecal coliform and nitrate-nitrogen contamination, accidents and spills of hazardous and other substances would need to be considered since they would also have access to the local sensitive shallow aquifer.

For the River Road/Santa Clara shallow aquifer, one alternative would be development of a comprehensive groundwater protection and remedial action program. The program would attempt to restore groundwater to acceptable levels, and prevent degradation from further development activities.

Another alternative could be to treat the groundwater from individual wells prior to consumption or irrigation use if legal mechanisms exist to do so. However, the Commission should be aware that nitrate-nitrogen treatment technology is not readily available, and is very costly.

Particularly in existing subsurface moratorium areas, such as River Road/Santa Clara, it is necessary to distinguish problems that currently exist (due to past practices) from potential new or increased problems. Such new problems could result from current, new or accelerated practices, usually growth and increased density.

In the River Road/Santa Clara example, continued development under current subsurface sewage disposal rules will not reduce and actually increases the problem. Indeed, such practices may actually make it impossible to solve the existing problems due to resulting low development densities if sewers are identified as the eventual remedy.

The Significance and Purpose of Nitrate-Nitrogen Standards.

If sensitive aquifers have the potential to be developed for domestic water supply, the naturally occurring maximum content for nitrate-nitrogen should not exceed 10 mg/l. Ten (10) mg/l is the upper limit

established by EPA for drinking water. There is no safety factor in this number.

Background concentrations of nitrate-nitrogen in groundwater generally are 1.0 mg/l or less. Concentrations much higher than this seldom occur naturally. Measured River Road/Santa Clara background averages from about 0.4 mg/l to 1.7 mg/l. When nitrate-nitrogen concentrations approach the upper limit, concern develops for its continued use as a potential water supply.

In relation to the 10 mg/l drinking water standard, DEQ uses a 5 mg/l planning target (e.g., Clatsop Plains). The Department does not believe it is prudent to use 10 mg/l for nitrate-nitrogen for planning purposes since there is no margin of safety in protecting public health.

Accordingly, DEQ uses 5 mg/l nitrate-nitrogen as an upper limit for planning provided that a reasonable factor of safety is included in the various assumptions made in the calculation process. A key assumption is that 5 mg/l is a measured maximum level rather than an average value of many separate measurements. This accounts for the high probability that when levels of 5 mg/l are found, that there will be areas (unmeasured) where nitrate levels will be higher--perhaps higher than 10 mg/l. What this means for model predicted values compared to measured data in River Road/Santa Clara is illustrated in Attachment 5.

The significance of the nitrate-nitrogen drinking water standard is discussed in more detail in the proposed statewide groundwater protection policy.

Other Reasons Why Nitrate Concentrations are Used in Groundwater Studies.

Groundwater studies commonly measure nitrate concentration for reasons other than its toxicity. Nitrate is an effective groundwater movement tracer since it is very soluble and mobile.

In aerobic conditions (i.e., oxygen present), nitrification of ammonia (NH_4) to nitrite (NO_2) then to nitrate (NO_3) occurs quickly. Aerobic conditions occur in the unsaturated zone between the ground surface and the top of the water table. Some denitrification (reduction in nitrogen concentration) can occur when ammonia volatilizes to the atmosphere.

However, studies have shown that subsurface conditions (such as those which exist below septic tank drainfields) are not conducive to denitrification, volatilization, nitrate adsorption, and/or chemodenitrification. As a result, drainfield nitrate concentrations are largely available to the groundwater, and will remain as measurable nitrates due to the anaerobic (lacking oxygen) conditions in the groundwater.

The Purposes and Limitations of Mathematical Groundwater Models.

Two models are used in the River Road/Santa Clara study. One addresses nitrogen compounds. The other (Pinder hydrogeology or mass-transport model) addresses groundwater movement. The combined output is a contamination prediction model, which predicts nitrate-nitrogen concentrations in the saturated zone.

According to EPA[1], a common feature of all contamination prediction models is that their forecasts are "deterministic" (one value), rather than "probablistic" (a range of values of varying probability).

In other words, such models provide average concentrations. As indicated earlier, maximum concentrations are relevant for nitrate-nitrogen since there is no safety factor in the standard. Thus, if raw measured data indicate values above averages predicted by the model (as is the case in River Road/Santa Clara), the measured data must be compared against drinking water standards and planning targets. Indeed, "missed" or unmeasured high concentrations are actually the numbers of most interest and value.

The significance of measured maximum concentrations versus model predicted averages is illustrated in Attachment 5 for the River Road/ Santa Clara data. Here it can be seen that even though the predicted average concentration of nitrate-nitrogen is well below the 10 mg/l standard, there is a strong probability that several areas in the saturated zone will experience concentrations above the standard.

EPA[1] also contends that contamination prediction models are adequate for obtaining "first order estimates of contaminant movement." According to Mike Ungs, computer scientist at Oregon State University, in the River Road/Santa Clara model "first order" accuracy means that:

1. The accuracy of the nitrogen transformation model is not significantly affected by an order of magnitude error in a single piece of input data.

2. The Pinder model is of accuracy equal to the least accurate data input.

In other words, the computer model is very precise in its refined calculation process. It consistently reproduces similar answers from a selected set of input data. However, such precision does not guarantee a similar level of accuracy in predicted nitrate-nitrogen levels. Accuracy means nearness to measured field conditions. Again, this significance is illustrated in Attachment 5 by the fact that actual nitrate-nitrogen values vary widely from predicted averages.

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[1] EPA-600/8-78-012, June 1978: Utilization of Numerical Groundwater Models for Water Resource Management.

Current Practices and "Best Practicable Control Technology (BPCT)" for Groundwater Protection.

The proposed statewide groundwater protection policy discusses this in greater detail. Elements relevant to this report follow.

Preventative measures: Planning with the goal of preserving existing high quality groundwater areas where they currently exist provides a method to guide activities which may contribute nitrate-nitrogen and other pollutants. This process usually includes sewer construction within urban growth boundaries as planned development occurs. And well construction standards are followed to reduce potential entry of surface contaminants into the groundwater through this route.

Maintenance measures: In areas where groundwater quality is degraded but not yet to the point of impaired use, pollutant load limitations for potential new contributors help prevent further aquifer degradation.

Improvement measures: In cases where groundwater has been degraded enough to impair beneficial uses (such as drinking water supply), sewers are commonly the cost-effective remedy. Pollutant source removal allows the water quality to then improve to usable levels. If a sophisticated planning model is available, such as in River Road/Santa Clara, areas needing urban sewer services can be distinguished from those that may be able to remain on subsurface sewage disposal systems. The River Road/Santa Clara model could even be used to predict sewerage construction timetables, address interim sewerage facility scenarios, etc.

Lane County (LCOG) has submitted a Draft Final Summary Report for River Road/Santa Clara to the Department and EPA. It contains several conclusions and recommendations.

The preceding discussion is specifically related to the LCOG conclusions and recommendations shown in Attachment 6. The most significant findings are summarized in the summation section of this staff report.

Alternatives

An evaluation of each alternative and its respective consequences follows.

1. Continue The Moratorium In Its Present Form.

The current moratorium allows subsurface systems on tax lots which were of record on or before April 28, 1978; makes provisions for bedroom additions to existing residences; and makes allowance for sewage system repairs.

Some consequences of retaining the current moratorium are:

a. The documented nitrate-nitrogen and fecal coliform problems from past and existing practices will not be reduced or addressed specifically by this action alone. Based on current circumstances, up to 250 additional dwelling unit equivalents could be permitted under this alternative. Even so, the resulting groundwater degradation would be minimal compared to the current problems.

b. Lack of development within the area will continue to retard the local economy, and block development to planned overall densities.

c. Public and political sentiments for terminating the moratorium will not be relieved.

d. This decision alone will not address public health concerns about current and future use of the contaminated shallow aquifer for domestic and/or irrigation purposes.

2. Repeal The Moratorium, OAR 340-71-020(9), And Reinforce Positive Action Taken By The Lane County Board Of Commissioners To Protect Groundwater.

At its February 21, 1980 meeting, the Lane County Board of Commissioners initiated positive steps to protect public health, begin a groundwater improvement program, and prevent groundwater degradation from future development.

The Board's actions included:

a. Start of a public information program aimed at reducing potential health risk to individuals who use shallow aquifers susceptible to contamination.

b. Review of the adequacy of the 1970 CH2M report on the River Road/Santa Clara sewage collection system.

c. Identification of interim sewage treatment methods that will accommodate growth and protect public health and groundwater.

d. Identification of potential administrative and governmental structures to construct and maintain interim waste treatment and disposal systems.

e. Ordering a feasibility study for a County Service District for waste management and other services.

Accordingly, it may be appropriate to repeal the moratorium, and take certain other actions to assure groundwater protection.

If the moratorium is repealed, current subsurface sewage disposal rules would apply. Those rules would allow systems in existing areas where the regional water table is five to six feet deep, where there is adequate depth and soil texture, and where there are adequate setbacks.

In the best areas, slightly less than four dwelling unit equivalents per acre (4 D.U./acre) might be possible. And although present zoning might prohibit such densities, the proposed comprehensive land use plan shows ultimate urban densities.

Of course, some areas of River Road/Santa Clara would not be suitable for permits due to water table, setbacks, etc.

Thus, a moratorium repeal could generate significant development on subsurface systems, but with unacceptable increases in both the groundwater nitrate-nitrogen concentrations and the area impacted.

The computer model predicts that if the areawide nitrate-nitrogen loading from septic tanks were reduced to zero (0) pounds/acre by 1985 (e.g., River Road and Santa Clara sewered), then predicted average concentrations in groundwater would drop to 5 mg/l or less by the year 2030.

Domestic sewage (septic tanks) accounts for about 73% of the nutrient nitrate-nitrogen loading to the aquifer. The remaining 27% (non-domestic) is from other sources, and can be considered largely uncontrollable.

From Figure IV-14 of the Sweet report, it appears that removal of the domestic load while continuing the non-domestic load results in average groundwater nitrate-nitrogen concentrations of about 3 mg/l by the year 2030. If the 5 mg/l nitrate-nitrogen planning standard is assumed to be the maximum allowed, then a 2 mg/l (or 16.7 lb. nitrate-nitrogen/acre-year) increment may be available. Should this increment be allocated totally to new dwelling units on septic tanks, up to 0.6 new D.U./acre could be permitted on presently undeveloped land.

This calculated result compares favorably with experience elsewhere in Oregon (e.g., Clatsop Plains).

This situation illustrates a defect in the current subsurface sewage disposal rules as they relate to groundwater protection. It follows that if the moratorium is repealed, a regional subsurface rule is needed to prevent further groundwater degradation by nitrate-nitrogen from new development.

Such a regional rule should allow the potential to consider siting options based upon not exceeding the 16.7 pound nitrate-nitrogen/acre-year increment averaged over the entire area. All nitrate-nitrogen sources would have to be considered. And the rule should be flexible enough to allow exceptions to conventional subsurface rules (e.g., higher density development on subsurface) if an approvable groundwater protection and remedial action plan is submitted.

Since repeal of the moratorium does not directly address problems from existing development, such action should be accompanied by a cooperative intergovernmental effort to protect the groundwater. A logical product of that effort should be a groundwater protection and remedial action plan which includes:

a. Model runs for multiple planning scenarios.

b. Identification of areas and densities where it may be appropriate to indefinitely continue use of existing (and construction of additional) individual standard subsurface sewage disposal systems.

c. Identification of where, when, and what type of interim sewage treatment facilities may be appropriate.

d. An adopted implementation strategy and financing plan which addresses:

   1. Who will plan, design and construct interim sewerage facilities.

   2. Who will plan, design and construct permanent sewerage facilities.

3. When, or under what circumstances, interim and permanent facilities will be constructed.

4. How sewerage facilities will be financed.

5. Who will operate and maintain interim and permanent facilities.

6. How development will be handled in the interim to insure that it does not impair sewerage implementation.

The above plan could be the product of a Stipulated Agreement between the Lane Board of Commissioners and the Environmental Quality Commission.

It is important to note that if the Department is to approve interim sewerage facilities, such facilities must be recognized in and accommodated by Lane County in their comprehensive Land Use Plan and Area 208 Plan.

Interim facilities are not currently recognized in those plans. DEQ can make no unilateral acceptance of interim sewerage approvals until both plans are amended or consistency with the existing facilities plan is demonstrated.

Thus, the above alternative consists of three parts:

a. Repeal the current moratorium.

b. Adopt a temporary regional rule to prevent new unacceptably high nitrate-nitrogen loads to the local groundwater system.

c. Obtain a Stipulated Agreement between the Lane Board of Commissioners and the Environmental Quality Commission which results in a groundwater protection and remedial action plan.

Some consequences of this three-part alternative are:

a. New construction on subsurface sewage disposal systems would not further degrade groundwater quality.

b. The Lane County Board of Commissioners has already initiated steps which could produce certain plan elements and implementation programs. Favorable action on this alternative would support their efforts to reduce existing groundwater pollution problems.

c. Some immediate local economic benefit would be derived without adding to remedial costs later.

d. Orderly implementation of urban services could more easily occur in a planned way and allow for consideration of interim facilities.

e. Realistic sewerage construction timetables could be established. Such planning might include allowances for certain deviations from current subsurface sewage disposal regulations (if later approved by the Commission) to accommodate densities and facilitate construction of urban services (interim and permanent).

Modify the Moratorium, OAR 340-71-020(9).

The moratorium could be modified to allow variances. Variances, as elsewhere in Oregon, would be evaluated on their own merits.

Some consequences are:

a. The moratorium, as amended on July 27, 1979, was relaxed to accommodate the most frequently expressed hardships. Thus, few variance approvals are likely unless the applicant can clearly demonstrate no adverse groundwater impacts from his proposal. That type of planning is most logically done by the local planning jurisdiction using the model, rather than by individuals.

b. If the model were used for the entire planning area, and acceptable subsurface sub-areas were identified, the variance method would be an inadequate administrative tool; i.e., it is cumbersome.

Summation

1. The operative model can now simulate hydrologic responses to average or baseline conditions as well as specific climatic and/or development scenarios.

2. The complexities of the groundwater problem are beyond the reach of simple intuitive description or prediction.

3. Existing nitrate-nitrogen concentrations within the study area exceed the 5 mg/l planning target on the average. The 10 mg/l maximum drinking water standard is currently exceeded in several locations. The 10 mg/l standard contains no safety factor.

4. Additional urban density development on subsurface sewage disposal systems will slightly increase the magnitude of nitrate-nitrogen violations, and significantly increase the area where said violations occur.

5. The aquifer is generally contaminated as indicated by fecal coliform organisms in excess of drinking water and body contact standards. Pollutants can migrate rapidly laterally and to groundwater from drainfields via macropore travel.

6. A public health hazard exists based on fecal coliform data for persons using the aquifer for domestic (drinking) or irrigation purposes. A health hazard similarly exists in several areas based on nitrate-nitrogen levels.

7. Action is needed to correct the existing groundwater problems. Because of the close interrelationship of several recommendations, they should not be acted upon independently.

8. The most recent action by the Lane County Commission reiterated their earlier request for repeal of the moratorium.

9. The Lane County Board of Commissioners has taken several positive steps to address public health concerns, prevent additional groundwater degradation, and correct existing groundwater problems.

10. Three options are available to the Commission for consideration at this time. They are:

    a. Continue the moratorium.

    b. Repeal the moratorium [OAR 340-71-020(9)], adopt a temporary regional rule to support the positive action taken by the Lane County Board of Commissioners to protect groundwater, and obtain a Stipulated Agreement between the Lane Board of Commissioners and the Environmental Quality Commission which results in a groundwater protection and remedial action plan.

c. Modify the moratorium [OAR 340-71-020(9)] to allow variances.

Director's Recommendation

Based upon the findings in the Summation:

1. It is recommended that the Commission act to repeal the current moratorium, OAR 340-71-020(9).

2. It is further recommended that the Commission adopt a temporary regional rule to prevent further groundwater degradation by nitrate-nitrogen in the River Road/Santa Clara area from new development as follows:

NOTE: Brackets [] indicate deleted language
Underlines _____ indicate new language.

OAR 340-71-030(10) - RIVER ROAD/SANTA CLARA RULES:

(a) Within the areas set forth in subsection (b) below, the Director, or his authorized representative, may issue either construction permits for new subsurface sewage disposal systems for favorable reports of evaluation of site suitability to construct systems under the following circumstances:

(A) The system complies with all rules in effect at the time the permit is issued; and

(B) The system will not in itself contribute, or in combination with other new sources after April 18, 1980, contribute more than 16.7 pounds nitrate-nitrogen per acre per year to the local groundwater. The applicant shall assure compliance with this condition by showing his ownership or control of adequate land through easements or equivalent.

(b) Subsection (a) above shall apply to all of the following area generally known as River Road/Santa Clara, and defined by the boundary submitted by the Board of County Commissioners for Lane County which is bounded on the south by the city of Eugene, on the west by the Southern Pacific Railroad, on the north by Beacon drive, and on the east by the Willamette River, and containing all or portions of T-16S, R-4W, Sections 33, 34, 35, 36; T-17S R-4W, Sections 1, 2, 3, 4, 10, 11, 12, 13, 14, 15, 22, 23, 24, 25; and T-17S, R-1E, Sections 6, 7, 18, Willamette Meredian.

(c) This rule is subject to modification or repeal by the Commission on an area-by-area basis upon petition by the appropriate local agency or agencies. Such petition either shall provide reasonable evidence that development using subsurface sewage disposal systems will not cause unacceptable degradation of groundwater quality or surface water quality or shall provide equally adequate evidence that degradation of groundwater or surface water quality will not occur as a result of such modification or repeal.

(d) Subsections (10)(a) and (10)(b) above shall not apply to any construction permit application based on a favorable report of evaluation of site suitability issued by the Director or his authorized representative pursuant to ORS 454.755(1)(b), where such report was issued prior to the effective date of this subsection (10).

3. It is further recommended that the Department be empowered to approve a groundwater protection and remedial action plan for the River Road/Santa Clara area which could allow temporary incremental loads in excess of the 16.7 pounds nitrate-nitrogen per acre per year provided that said plan:

   A. Encompasses all the regional rule area; and

   B. Includes adopted timetables for construction of interim and/or permanent sewage collection, treatment and disposal facilities.

4. It is further recommended that Department staff be directed to draft a Stipulated Agreement in cooperation with the Lane County Board of Commissioners. Said Agreement shall have as its goal the production by Lane County of a groundwater protection and remedial action plan for the River Road/Santa Clara area. That plan shall consider the elements listed under Alternative 2 in the evaluation section of this staff report.

5. It is further recommended that staff return to the Commission within four (4) months with the signed Stipulated Agreement.

Bill

WILLIAM H. YOUNG

JEBorden
378-8240
3/27/80

Attachment 1: Current moratorium rule, OAR 340-71-020(9)
Attachment 2: Chronology of Significant Events
Attachment 3: Lane Board of Commissioners' Resolution
Attachment 4: Groundwater Study Schedule
Attachment 5: Normal Plot of RR/SC Groundwater Quality Data
Attachment 6: LCOG Conclusions and Recommendations
Appendix A: Hearing Notice for Secretary of State
Appendix B: Hearing Notice sent to Eugene Area media
Appendix C: Land Use Consistency Statement
Appendix D: Statement of Need for Rulemaking
Appendix E: Findings

Amend OAR 340-71-020(9) as follows:

340-71-020(9) (a) Except as provided in paragraph (b) of this subsection and pursuant to ORS 454.685, neither the Director nor his authorized representatives shall issue either permits for any new sewage disposal facilities which would use subsurface sewage disposal systems, within the boundaries of the following described geographic area of the state:

The area generally known as River Road-Santa Clara, and defined by the Boundary submitted by the Board of County Commissioners for Lane which is bounded on the South by the city of Eugene, on the West by the Southern Pacific Railroad, on the North by Beacon Drive, and on the East by the Willamette River, and containing all or portions of T-16S, R-4W, Sections 33, 34, 35, 36, T-17S, R 4W, Sections 1, 2, 3, 4, 10, 11, 12, 13, 14, 15, 22, 23, 24, 25, and T-17S, R-1E, Sections 6, 7, 18, Willamette Meridian.

(b) Paragraph (a) of this subsection shall not prohibit the issuance of construction permits or favorable reports of evaluation of site suitability for:

A. One subsurface sewage disposal system on each existing tax lot which was of record on or before April 28, 1978, and upon which there is no structure which houses a toilet facility provided:

1. The lot and soil conditions meet the minimum standards of OAR 340-71-020 and 340-71-030 for standard system installation.

2. The projected daily sewage flow shall not exceed 600 gallons.

3. The system proposed is not for a variance, rural areas variance or experimental system.

B. An extension to an existing system which is required by the rules in this division in order to allow the addition of a bedroom or bedrooms to an existing residence.

C. A repair to an existing system provided, however, if such permit or favorable report of evaluation of site suitability is not relied upon to a substantial financial extent by the recipient thereof by March 31, 1980, the Commission may by rule, prohibit after appropriate notice, the use of such permit or report if the Commission repeals or amends this paragraph (b) of this subsection.

NOTE: Brackets [ ] indicate deleted language
Underlines ____ indicate new language

River Road-Santa Clara Groundwater Study
Summary Chronology of Significant Events

Date	Event
2/2/78	Lane County Board of Commissioners adopts Resolution 78-2-22-3 requesting EQC impose a septic tank moratorium not to exceed 6 months.
3/31/78	WVR presents staff report to EQC in Eugene recommending moratorium be imposed. EQC continues hearing.
4/28/78	EQC in Salem adopts moratorium rule. ORS 454.685, the authorizing statute, does not provide for a fixed moratorium time limit, so the 6-months "limit" not adopted.
5/2/78	Moratorium rule filed with Secretary of State and becomes effective.
11/17/78	WVR presents project schedule status at EQC breakfast meeting in Eugene.
2/23/79	WVR presents status report to EQC in Portland. Commission orders two informational public hearings in Eugene.
3/28-29/79	Two informational public hearings held, Eugene area.
4/3/79	Lane County Board of Commissioners adopt Resolution 79-4-3-13 requesting EQC end the moratorium.
4/27/79	WVR presents status report and results of Eugene area informational hearings to EQC in Portland. Three rule making options were offered. The Commission ordered a rule making hearing.
7/27/79	EQC holds a rule making hearing in Portland. The Commission modifies the moratorium rule generally reflective of economic hardship and certain existing lot conditions.
2/21/80	Lane County Board of Commissioners reaffirms request to lift moratorium, and takes initial steps to develop a groundwater protection plan.

ATTACHMENT 3

IN THE BOARD OF COUNTY COMMISSIONERS OF LANE COUNTY, OREGON

RESOLUTION 79-4-3-13

IN THE MATTER OF ESTABLISHING A TEMPORARY MORATORIUM ON CONSTRUCTION PERMITS FOR SUBSURFACE SEWAGE DISPOSAL SYSTEMS IN RIVER ROAD - SANTA CLARA, OREGON

WHEREAS, the initial request for the moratorium was expected to be for only a six month period to allow a reasonable time to address a potential ground water pollution problem, and

WHEREAS, the period has already greatly exceeded this six month period, and the present ground water study is not expected to be completed until April of 1980, and

WHEREAS, the potential ground water pollution problem does not appear to present an imminent health hazard, and

WHEREAS, the moratorium unduly restrains the property rights of the people of River Road - Santa Clara area without adequate cause, therefore be it hereby

RESOLVED that the Board of County Commissioners requests the present moratorium on new subsurface sewage disposal systems in the River Road - Santa Clara area be terminated.

DATED this 3rd day of April, 1979.

James L. Freeman
Chairman,
Lane County Board of Commissioners

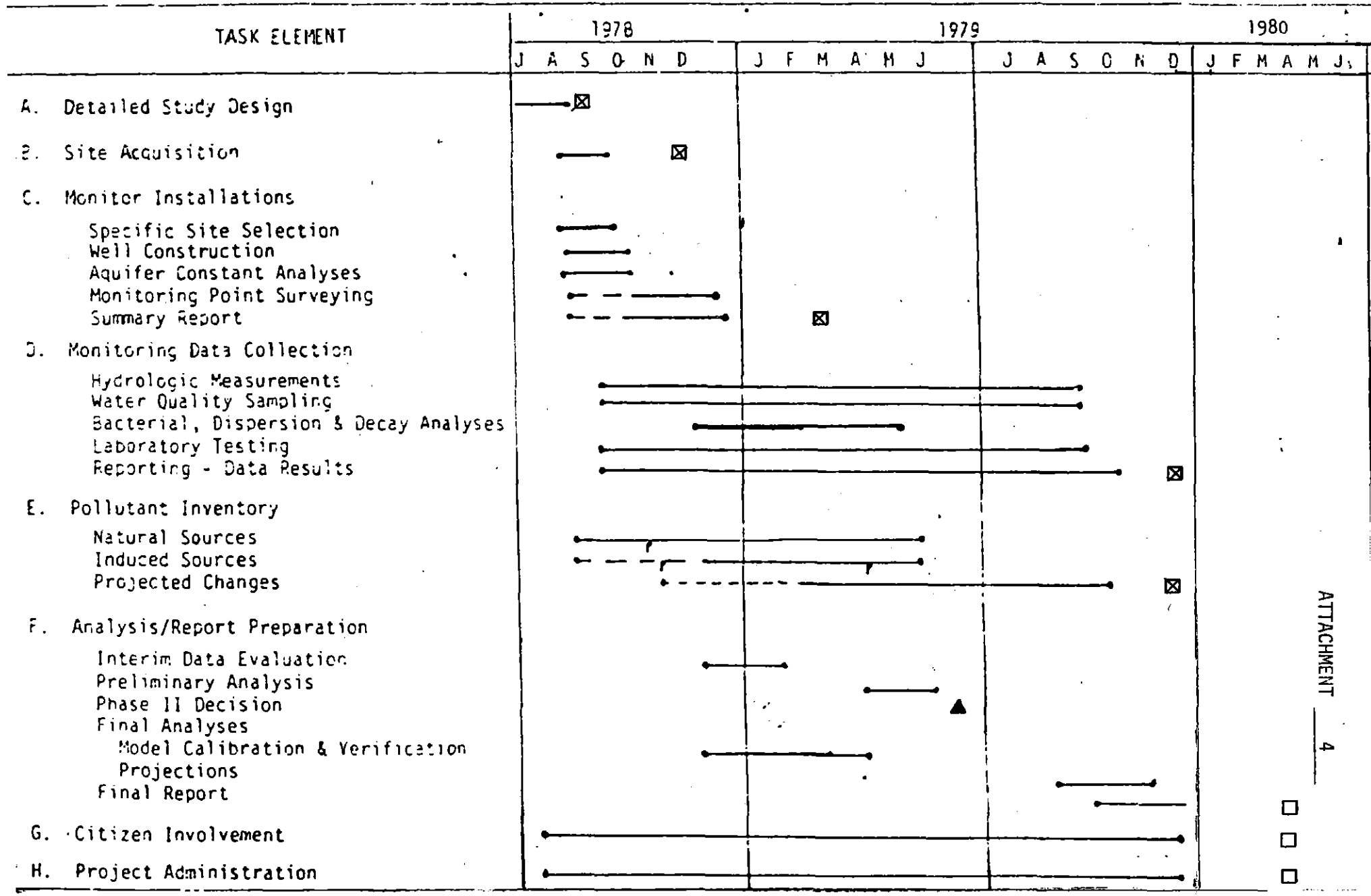
RECEIVED
LANE COUNTY
ENV. MGMT.

APPROVED AS TO FORM
DATE 4/4/79 lane county
OFFICE OF LEGAL COUNSEL

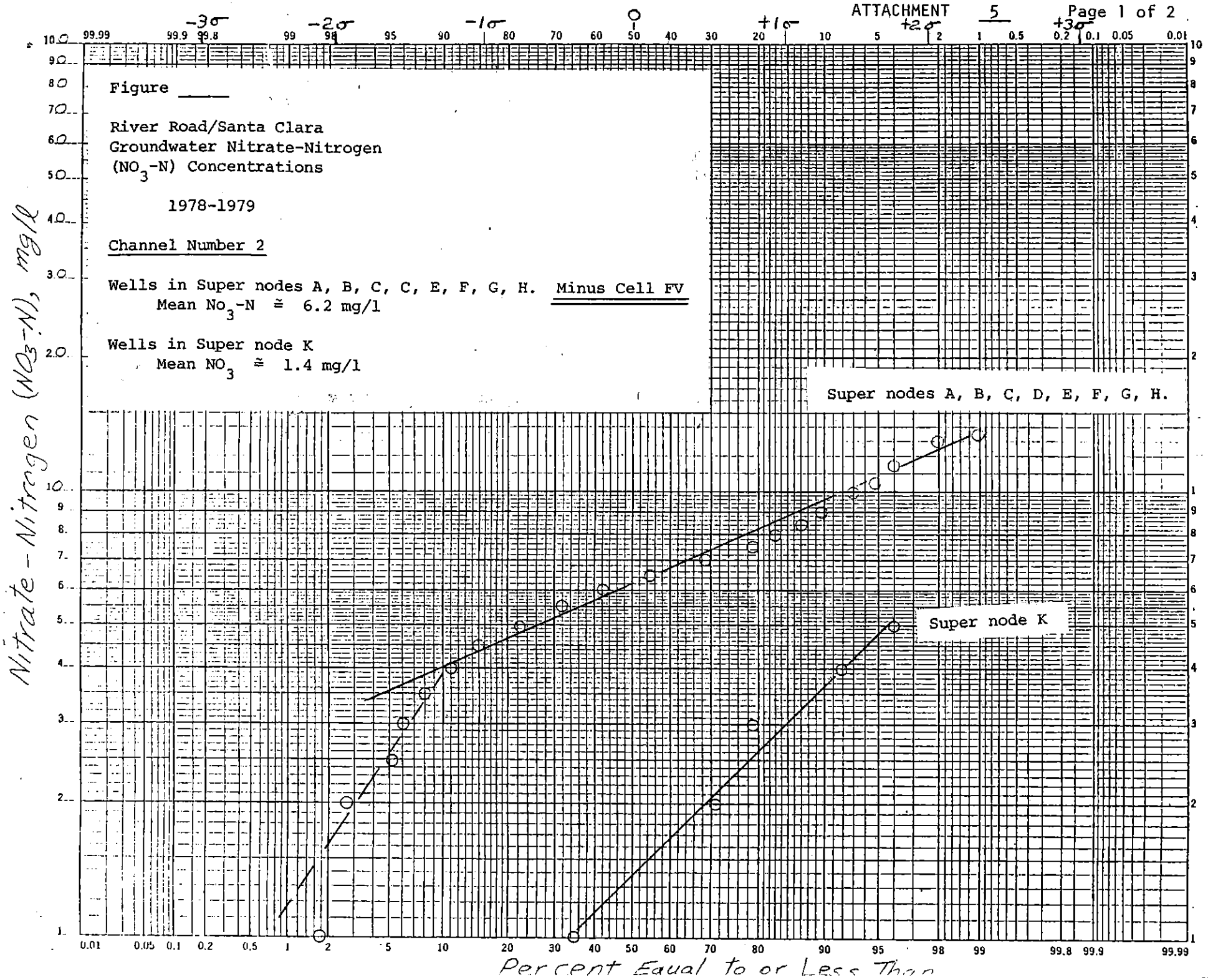
⊠ Completion date

□ Estimated completion date

STUDY SCHEDULE



ATTACHMENT 4


-3σ
-2σ
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+1σ
+2σ
+3σ
99.99 99.9 99.8 99 98 95 90 80 70 60 50 40 30 20 10 5 2 1 0.5 0.2 0.1 0.05 0.01
Figure
River Road/Santa Clara
Groundwater Nitrate-Nitrogen
(NO3-N) Concentrations
1978-1979
Channel Number 2
Wells in Super nodes A, B, C, C, E, F, G, H. Minus Cell FV
Mean No3-N ≅ 6.2 mg/l
Wells in Super node K
Mean NO3 ≅ 1.4 mg/l
Super nodes A, B, C, D, E, F, G, H.
Super node K
Nitrate - Nitrogen (NO3-N), mg/l
10 9 8 7 6 5 4 3 2 1
0.01 0.05 0.1 0.2 0.5 1 2 5 10 20 30 40 50 60 70 80 90 95 98 99 99.8 99.9 99.99
Percent Equal to or Less Than

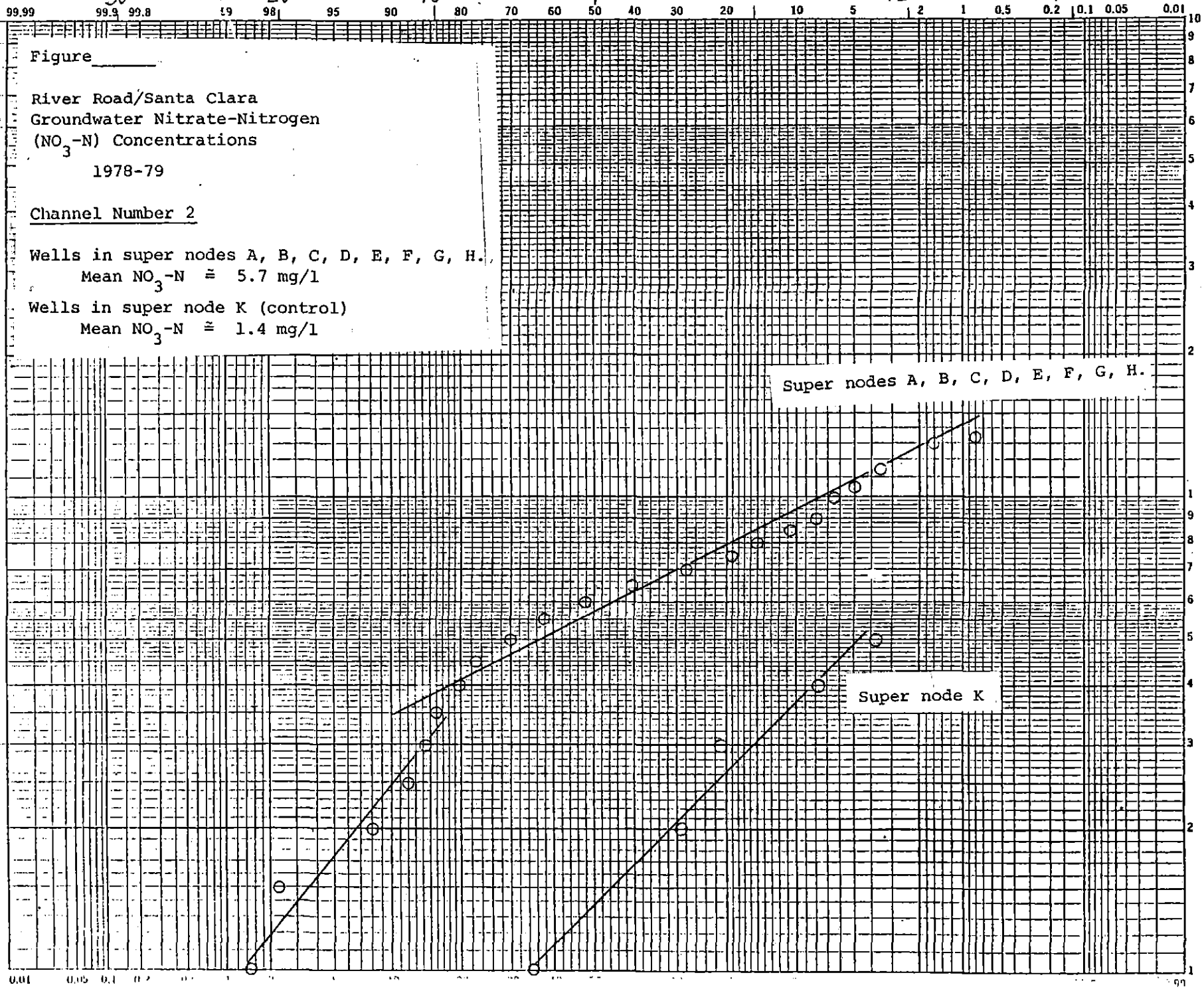
Figure _____

River Road/Santa Clara
Groundwater Nitrate-Nitrogen
(NO_3-N) Concentrations
1978-79

Channel Number 2

Wells in super nodes A, B, C, D, E, F, G, H.
Mean NO_3-N ≅ 5.7 mg/l

Wells in super node K (control)
Mean NO_3-N ≅ 1.4 mg/l



Discussion Of LCOG Conclusions and Recommendations in Relation to the Evaluation Section of This Staff Report.

Several sets of conclusions and recommendations are considered in this Attachment 6. They will be distinguished as Sweet, LCOG and DEQ, depending on the source.

LCOG: "NOTE: The intent of this study was the investigation of the hydrologic character and quality of the River Road/Santa Clara aquifer in regards to potential health concerns. Although some planning concerns are noted in these conclusions, the report does not address nor attempt to account for overall planning implications for growth and development."

LCOG Conclusion:

"1. Based on assumptions of current zoning and historical trends of parcels development in the River Road/Santa Clara area and considering DEQ standards for the installation of Subsurface Disposal Systems within the Urban Service Area, average Nitrate-Nitrogen levels will not exceed the current drinking water standard of 10 mg/L in the River Road/Santa Clara area nor north ward toward Junction City through the year 2030."

DEQ Conclusion:

Based on assumptions of current zoning and historical development trends, nitrate-nitrogen levels will not exceed 10 mg/l on the average. But they currently exceed 10 mg/l (e.g., 13.4 mg/l at well #1-B-IV) and will continue to exceed 10 mg/l at individual locations and times. The risk of using average values is shown in Attachment 5. In fact, measured nitrate-nitrogen values currently exceed the 5 mg/l planning target on the average. Ten (10) mg/l is the EPA drinking water standard. It is a maximum, not an average, and contains no safety factor.

LCOG Conclusion:

"2. Utilizing current zoning and meeting physical site standards (specifically considering the modeled average high water conditions) for subsurface disposal systems in the River Road/Santa Clara area an additional 1700 to 2000 dwelling unit equivalences could be constructed without generally exceeding the drinking water standard of 10 mg/L Nitrate-Nitrogen."

DEQ Conclusion:

The 5 mg/l nitrate-nitrogen planning target is currently exceeded on the average. And, as indicated above, 10 mg/l is a maximum standard, not an average. If the dwelling units are built, areas now exceeding 10 mg/l are predicted to expand laterally (Sweet), although maximum values may only increase slightly. Also, data shows extensive violation of bacterial drinking water standards of < 1/100 ml and the body contact standard of 200/100 ml. Construction of the additional dwelling unit equivalents on subsurface sewage disposal systems may aggravate the bacterial problem, and increase potential health hazards through macropore travel, as indicated by Sweet's dispersion/decay analysis.

LCOG Conclusion:

"3. Continued use of Subsurface Disposal Systems in the study area will extend over time and area the current situation of Nitrate-Nitrogen standards in excess of the 5 mg/L DEQ planning standard. This condition will persist in the River Road/Santa Clara area and in areas downgradient (up to 1/2 mile north) of the Beacon Drive Urban Service Boundary."

DEQ Conclusion:

Concur.

LCOG Conclusion:

"4. Construction of sanitary sewers in either River Road or River Road plus Santa Clara would significantly reduce the size of the area and shorten the duration of time in which the 5 mg/L Nitrate-Nitrogen DEQ planning standard will be exceeded.

DEQ Conclusion:

Concur. It is important to recognize that sewering does not guarantee a bacteria-free aquifer since the aquifer is susceptible to pollution. This is because the aquifer is shallow, is recharged locally, and is not separated (protected) from the ground surface by natural barriers or impervious layers. Nitrate-nitrogen would be reduced to the average levels predicted by the model.

LCOG Conclusion:

"5. The provision of an extensive network of storm drainage in River Road/Santa Clara is likely to cause general

increase in Nitrate-Nitrogen concentrations due to reduced aquifer dilution. The model predicts that the drinking water standards of 10 mg/L would be exceeded in some areas if storm drainage is provided under conditions of development with an additional 1700-2000 subsurface disposal systems."

DEQ Conclusion:

Concur.

Sweet Conclusion:

Concur.

LCOG Conclusion:

"6. The provision of an extensive storm drainage system with water transmitted out of the study area will lower the water table in many locations and will tend to increase the areas suitable for subsurface disposal systems siting."

DEQ Conclusion:

Concur. But, as indicated above, nitrate-nitrogen levels would also be raised by such construction, thus further degrading the groundwater.

LCOG Conclusion:

"7. The study findings do not support the conclusion that a health hazard exists based upon nitrate concentrations exceeding the U.S. Public Health Service standards for drinking water."

DEQ Conclusion:

Since most persons are on public water supply, an areawide public health hazard probably does not exist based on nitrate-nitrogen concentrations. But a health hazard does exist for domestic users at sites currently exceeding 10 mg/l. Clearly, a public health hazard exists based on fecal coliform data for persons using the aquifer for domestic or irrigation purposes.

LCOG Conclusion:

"8. Approximately 73 percent of the nutrient nitrogen-nitrate loading in the River Road/Santa Clara area aquifer comes from subsurface disposal systems."

DEQ Conclusion:

Concur.

Sweet:

Concur.

LCOG Conclusion:

> "9. The use of the shallow aquifer within the study area for consumption (drinking) purposes is not acceptable due to evidence of serious and widespread total and fecal coliform contamination in excess of drinking water standards. There are currently between 300 and 500 domestic use wells in the study area."

DEQ Conclusion:

Concur. Based on field surveys, over one out of three homes (3400 estimated) have shallow irrigation wells. When these additional irrigation wells are considered, substantial public contact with the aquifer is guaranteed.

LCOG Conclusion:

> "10. Although fecal coliform contamination levels in excess of contact recreation standards (200 fecal coliform/100 mL) are not uniform, approximately 32 percent of the wells showed at least one test in excess of these levels. Fourteen percent of the wells had median total coliform levels in excess of contact recreation standards (1,000 total/100 mL)."

DEQ Conclusion:

Concur.

Sweet Conclusion:

Sweet concludes that "At least 97% of the wells sampled exceeded bacterial limits for drinking water in more than one sample. About 14 percent of the sites had median" (concentrations in excess of contact standards), "and 89 percent had maximum total coliform concentrations in excess of contact sport limits."

LCOG Conclusion:

"11. The most serious indications of bacterial contamination occurred in a sewered area adjacent to a major sewage interceptor. High nitrate levels were not associated with these coliform concentrations."

DEQ Conclusion:

Concur.

LCOG Conclusion:

"12. Analysis scenarios including conditions of maximum subsurface density under 1990 General Plan guidelines (with zone changes), the effects of storm drainage under this maximum development and the impacts of community lagoons with reinfiltration under similar population densities would provide additional useful information in evaluating alternatives. These analyses were not performed due to monetary constraints."

DEQ Conclusion:

No comment. The value of this activity is discussed in the "Alternatives" section of this report.

LCOG Conclusion:

"13. An additional groundwater model study is not necessary to make rational planning decisions for River Road/Santa Clara. There remains, however, additional unanswered questions (such as the question of deep aquifer purity) that may be addressed by special and limited studies."

DEQ Conclusion:

Lane County did not fund these special investigations during the groundwater study. DEQ concurs that special limited studies can provide most needed additional information. Sweet recommended investigation of water quality in the deeper aquifer, sampling in the shallow zone for trace organics, and site specific monitoring of a functioning domestic drainfield system.

Additional DEQ Conclusion:

14. Remembering the significance of predicting average nitrate-nitrogen concentrations, the RR/SC model can:

a. Identify areas that should be protected for present and future development of domestic water supplies.

b. Identify groundwater impacts for a variety of planning and development scenarios.

The model is most useful when results are compared to the 5 mg/l nitrate-nitrogen planning target.

Additional DEQ Conclusion:

15. Septic tanks are now in use in areas where shallow groundwater levels make their continued use unacceptable. This, coupled with the documented groundwater contamination, necessitates action to correct existing problems.

LCOG:

"NOTE: The Recommendations of this report are directed primarily at the technical hydrologic and quality concerns of the River Road/Santa Clara aquifer and do not generally address or resolve the overall planning and development issues for the area."

LCOG Recommendation:

"1. The current EQC Moratorium on subsurface disposal due to nitrate concentration hazards should be removed in accordance with the study findings and conclusions."

DEQ Recommendation:

Refer to recommended alternative.

LCOG Recommendation:

"2. All structures within the Urban Service Area should be required to connect to public water supply systems for domestic consumption as provided by the existing water districts or should be able to show the availability of uncontaminated deep aquifer (greater than 60 feet) sources. (The current 1990 Plan indicates that Public Water Supply is an Urban Service that should be supplied to all residences with urbanization)."

DEQ Recommendation:

Concur. But it is not within the scope of this discussion.

LCOG Recommendation:

"3. All residences within 1/2 mile north of Beacon Drive should be provided with a well testing program to identify and prevent subsurface disposal-related health hazards."

DEQ Recommendation:

Concur. Refer to recommended alternative.

LCOG Recommendation:

"4. The draft Metropolitan Area General Plan has indicated that there is a need for more than an additional 2000 single family dwelling unit equivalent in RR/SC. If this Update Plan is adopted, it is recommended that community treatment alternatives other than subsurface disposal systems be developed."

DEQ Recommendation:

Generally concur. Refer to recommended alternative.

LCOG Recommendation:

"5. In order to monitor the nutrient and bacterial loading to the aquifer, to extend subsurface system life until community treatment decisions are made, and to prevent potential health hazards associated with high subsurface disposal systems densities, Lane County should establish a special septic management program for RR/SC. In cooperation with affected citizens and other local jurisdictions Lane County should investigate alternative methods to reduce costs and provide for an orderly transition to future community systems."

DEQ Recommendation:

This recommendation does not in itself help reduce the documented bacterial and nitrate-nitrogen pollution problems. Such a management program might be better suited to alternative <u>interim</u> sewerage facilities prior to sewering an area.

LCOG Recommendation:

"6. As a general rule, extensive storm sewering should not be considered without sanitary sewers. Provisions of a storm drainage system in the presence of sanitary sewers is desirable only in those geographical areas that are liable to inundation of existing subsurface disposal systems during conditions of high water and where modeling predicts that drainage will significantly lower high water elevations. Reinfiltration of storm waters should be considered."

DEQ Recommendation:

DEQ concurs if it is an element of a comprehensive effort to develop a groundwater protection and remedial action plan for the River Road/ Santa Clara area.

LCOG Recommendation:

"7. The hydrology modeling as performed in this groundwater study should be used as a tool in evaluating sites for a placement of subsurface waste disposal systems."

DEQ Recommendation:

The hydrology model is better suited for area predictions than for site-specific predictions. DEQ concurs if this is an element of a comprehensive groundwater protection and remedial action plan. The "protection" part of the plan must prevent or limit nitrate contributions to the groundwater. The "remedial action" part of the plan must eliminate or severely reduce current nitrate loads.

LCOG Recommendation:

"8. Additional model/transport analysis scenarios concerning maximum septic densities, storm drainage and lagoon/ reinfiltration systems should be performed as indicated in Conclusion #13."

DEQ Recommendation:

DEQ concurs provided such action is part of a comprehensive groundwater protection and remedial action plan.

LCOG Recommendation:

"9. The Consultants' Technical Recommendations should be acted upon positively."

DEQ Recommendation:

Concur.

LCOG Recommendation:

"10. Because recommendations #'s 1-6 are closely interrelated, they should not be acted upon independently. In particular, the moratorium should not be lifted without positive action on these related recommendations."

DEQ Recommendation:

The Department concurs with the Sweet recommendations. Refer to recommended alternative.

LCOG Recommendation:

"11. In order to reduce nitrate levels to DEQ Planning standards (5 mg/L) and in order to assure compliance with the adopted 1990 Plan, a commitment should be made for the provision of sewer service south of Beltline Road before the year 1990. (This Recommendation added at the request of the Environmental Protection Agency, Department of Environmental Quality and Water Resources Department.)"

DEQ Recommendation:

Refer to recommended alternative.

LCOG Recommendation:

"12. In order to reduce the impact of new development in the Santa Clara area on nitrate and coliform contamination levels, community lagoon systems should be encouraged with the provisions for potential connection to sanitary sewer systems as needed in the future."

DEQ Recommendation:

Refer to recommended alternative.

APPENDIX A

Environmental Quality Commission

POST OFFICE BOX 1760, PORTLAND, OREGON 97207 PHONE (503) 229-5696

VICTOR ATIYEH
Governor

Public Notice of Hearing
Prepared: March 4, 1980
Hearing: April 18, 1980

Before the Environmental Quality Commission
of the State of Oregon

A CHANCE TO BE HEARD ABOUT:

WHETHER TO CONTINUE, MODIFY OR REPEAL THE CURRENT SEPTIC TANK MORATORIUM IN EFFECT IN THE RIVER ROAD-SANTA CLARA AREA, LANE COUNTY

The Department of Environmental Quality is considering changes to Oregon Administrative Rules 340-71-020(9). The existing rule limits construction of subsurface sewage disposal systems in the River Road-Santa Clara area north of Eugene.

What is The Department of Environmental Quality Proposing?

Three options will be presented to the Commission. The options are listed below. The Commission could change the language of these proposals:

Option 1: REPEAL THE MORATORIUM.

Option 2: MODIFY THE MORATORIUM by:

a. Requiring a groundwater protection program to protect and restore groundwater quality.

b. Establishing timetables for sewerage construction as might be identified in the protection plan.

c. Requiring all structures to connect to public water supply systems as a prerequisite to modifying the moratorium.

Option 3: TAKE NO ACTION and thereby maintain the current moratorium.

Who May Be Affected By This Proposal?

Residents who have shallow domestic water wells and/or irrigation wells in the River Road-Santa Clara area, persons who wish to construct or install buildings requiring sewage disposal systems in the River Road-Santa Clara area, and downgradient groundwater users (i.e., north of Beacon Drive).

How To Provide Your Information:

Information may be provided by any interested person. Written comments should be sent to the Department of Environmental Quality, Willamette Valley Region, 1095 25th St. S.E., Salem, Oregon 97310, and should be received by 5:00 p.m., April 18, 1980. Oral and written comments may be offered at the following public hearing:

City: Eugene
Time: 10:00 a.m.
Date: April 18, 1980
Location: Eugene City Council Chambers, 777 Pearl St., Eugene
Hearing Body: Environmental Quality Commision

Where To Obtain Additional Information:

Copies of the staff report and proposed rules may be obtained from Terri Sylvester, Department of Environmental Quality, Willamette Valley Region, 1095 25th St. S.E., Salem, Oregon 97310, (503) 378-8240, or from Jane Fechtal, Department of Environmental Quality, Willamette Valley Region, 16 Oakway Mall, Eugene, Oregon 97401, (503) 686-7601.

(From outside the Eugene and Salem areas, the State's toll-free number is 1-800-452-7813.)

Legal References For This Proposal:

The rule making hearing is being proposed under authority of ORS 454.612; 454.625; 454.685; 468.020 and will continue, modify or repeal OAR 340-71-020(9).

Need For Rule:

The Department of Environmental Quality has received and reviewed the Final River Road-Santa Clara Groundwater Study, Final Technical Report, February, 1980. And the Environmental Quality Commission (EQC) has received a Lane County Commission resolution and petition to repeal the moratorium.

The EQC amended but did not repeal OAR 340-71-020(9) on July 27, 1979. Accordingly, the Lane County Commission resolution is still pending. And the final groundwater study's findings suggest rule changes may be appropriate.

Accordingly, the EQC has scheduled a public rule making hearing in Eugene on April 18, 1980.

Fiscal Impact:

Repeal the moratorium:

Agency costs would not be significantly affected by this action.

Local government could experience program costs associated with inspections conducted and permits issued in the sub-surface sewage disposal program. Their resultant costs would be covered by permit fees associated with that program.

The general public could experience greatly increased costs due to inflation and increased construction difficulties should a sewerage system eventually be constructed to serve the area. Initial savings might be derived by the ability to develop currently undeveloped land.

Modify the moratorium:

Agency costs could be increased depending upon how the moratorium is modified. Up to 0.15 existing staff positions for two years might need to be allocated to compliance inspection, plan review, and administrative work.

Local government might need to obligate local funds for additional planning efforts and construction activities. The amount would depend on the nature and timing of capital construction projects, if any.

The general public might derive short term savings by developing undeveloped land. But costs associated with capital construction projects would eventually be borne by the general public.

Take no action:

Agency costs would not be affected.

Local government would experience no immediate effects, but might eventually lose projected tax and other revenues by lack of development in the area.

The general public would be affected by their inability to develop undeveloped land.

Further Proceedings:

After rule making hearing, the EQC may adopt rules identical to those proposed, adopt modified rules on the same subject matter, or decline to act. The moratorium will remain in effect as currently administered until the Commission takes action. The Commission's deliberation should come on April 18, 1980, but may be carried over to later Commission meetings.

Dated: March 4, 1980
John E. Borden: wr
378-8240

NOTICE OF PUBLIC HEARING

A Chance To Be Heard About The

RIVER ROAD/SANTA CLARA SEPTIC TANK MORATORIUM

The Environmental Quality Commission will soon consider whether to continue, modify or repeal the current septic tank moratorium in effect in the River Road/Santa Clara area in Lane County. This rule-making hearing will take place before the Environmental Quality Commission on:

DATE: APRIL 18, 1980

LOCATION: EUGENE CITY COUNCIL CHAMBERS
777 PEARL STREET
EUGENE

BEGINNING: 10:00 A.M.

Interested citizens, especially those living in the River Road/Santa Clara area, people wishing to build houses or structures requiring septic tanks in the affected area, and those who use groundwater in or north of the area are urged to attend the public hearing and express their opinion on the merits of continuing, modifying or repealing the current septic tank moratorium.

Testimony may be presented orally or in writing at the hearing or may be delivered to the DEQ, Willamette Valley Region Office in writing at:

16 OAKWAY MALL
EUGENE, OREGON 97401

SUMMARY STATEMENT FOR THE MEDIA

Notice of Public Hearing: A Chance To Be Heard About The River Road/Santa Clara Septic Tank Moratorium.

The Environmental Quality Commission will soon consider whether to continue, modify or repeal the current septic tank moratorium in effect in the River Road/Santa Clara area in Lane County. This rule-making hearing will take place before the Environmental Quality Commission on:

Date:	April 18, 1980
Location:	Eugene City Council Chambers 777 Pearl Street Eugene
Beginning:	10:00 a.m.

Department of Environmental Quality staff have proposed three options for the Commission's consideration. The recommended option consists of three parts:

1. Repeal the current septic tank moratorium.

2. Adopt a regional septic tank rule to prevent new unacceptably high nitrate-nitrogen loads to the local groundwater system.

3. Obtain a Stipulated Agreement between the Lane Board of Commissioners and the Environmental Quality Commission which results in a groundwater protection and remedial action plan.

The Commission will base its decisions on:

1. Oral and written public testimony.

2. River Road/Santa Clara Groundwater Study, Final Technical Report.

3. The LCOG final report.

4. Department of Environmental Quality staff report.

Testimony may be presented orally or in writing at the hearing or may be delivered to the DEQ, Willamette Valley Region Office in writing at:

16 Oakway Mall
Eugene, Oregon 97401

Copies of the staff report and proposed rules may be obtained at the same location.

APPENDIX C

BEFORE THE
ENVIRONMENTAL QUALITY COMMISSION

NOTICE PERTAINING TO CONSISTENCY WITH STATEWIDE PLANNING GOALS

The enclosed Public Notice concerns a proposal that appears to conform to Statewide Planning Goals 6 (Air, Water, and Land Resources Quality) and 11 (Public Facilities and Services). We are aware of no conflict with other goals.

With regard to Goal 6, the proposal would revise State rules and standards for safe subsurface disposal of sewage. This by definition in the goal complies with Goal 6. The goal requires waste discharges from future and existing developments not to violate State standards.

With regard to Goal 11, the proposal addresses the current River Road/ Santa Clara septic tank moratorium in terms of assurances that groundwater will not be further polluted. To the extent that sewage disposal systems may be permitted under the proposal, such authorizations would accommodate the transition to future urban services, or be in accordance with alternatives developed in a later groundwater protection and remedial action plan. This is consistent with "timely" arrangement of services required by the goal. The major land use impact of this proposal is acceleration of development compared to the present moratorium status.

Public comment on each of the land use issues involved is welcome, and may be submitted in the same fashions as are indicated for testimony in the accompanying NOTICE OF PUBLIC HEARING.

It is requested that local, state, and federal agencies review the proposed action and comment on possible conflicts with their programs affecting land use and with Statewide Planning Goals with their expertise and jurisdiction.

The Department of Environmental Quality intends to ask the Department of Land Conservation and Development to mediate any apparent conflicts brought to our attention by local, state or federal authorities.

After rule making hearing, the EQC may approve rules identical to those proposed in one of the options, adopt modified rules on the same subject matter, or decline to act. The moratorium will remain in effect as currently administered until the Commission takes action. The Commission's deliberation should come on April 18, 1980 as part of a scheduled Commission meeting.

STATEMENT OF NEED FOR RULEMAKING
and
FISCAL IMPACT STATEMENT

Pursuant to ORS 183.335(2), this statement provides information on the Environmental Quality Commission's intended action to adopt a rule.

Proposed Amendment to Oregon Administrative Rules 340-71-030, Rules Governing Subsurface and Alternative Sewage Disposal

A. Legal authority for rules governing subsurface and alternative sewage disposal is ORS 454.625.

B. Need For Rulemaking:

The Department of Environmental Quality has received and reviewed the Final River Road/Santa Clara Groundwater Study, Final Technical Report, February, 1980. And the Environmental Quality Commission (EQC) has received a Lane County Commission resolution and petition to repeal the moratorium.

The EQC amended but did not repeal OAR 340-71-020(9) on July 27, 1979. Accordingly, the Lane County Commission resolution is still pending. And the final groundwater study's findings suggest rule changes may be appropriate.

Accordingly, the EQC has scheduled a public rulemaking hearing in Eugene on April 18, 1980.

C. Documents relied upon in considering the need for and in preparing the Rule.

"The River Road/Santa Clara Groundwater Study, Final Technical Report" prepared by Sweet, Edwards and Associates, Inc.

D. Fiscal Impact:

Repeal the Moratorium:

Agency costs would not be significantly affected by this action.

Local government could experience program costs associated with inspections conducted and permits issued in the subsurface sewage disposal program. Their resultant costs would be covered by permit fees associated with that program.

The general public could experience greatly increased costs due to inflation and increased construction difficulties should a sewerage system eventually be constructed to serve the area. Initial savings savings might be derived by the ability to develop currently undeveloped land.

Adopt a Regional Rule:

Agency costs could be increased depending upon content of the rule. Up to 0.15 existing staff positions for two years might need to be allocated to compliance inspection, plan review, and administrative work.

Local government might need to obligate local funds for additional planning efforts and construction activities. The amount would depend on the nature and timing of capital construction projects, if any.

XL1267

STATE OF OREGON

ENVIRONMENTAL QUALITY COMMISSION

FINDINGS

The Environmental Quality Commission of the state of Oregon finds that its failure to act promptly, by adopting a temporary rule OAR 340-71-030(10), will result in serious prejudice to the public interest or the interest of the parties concerned, for the following reasons:

1. Existing nitrate-nitrogen concentrations with the study area exceed the 5 mg/l planning target on the average. The 10 mg/l maximum drinking water standard is currently exceeded in several locations. The 10 mg/l standard contains no safety factor.

2. Additional urban density development on subsurface sewage disposal systems will slightly increase the magnitude of nitrate-nitrogen violations, and significantly increase the area where said violations occur.

3. The aquifer is generally contaminated as indicated by fecal coliform organisms in excess of drinking water and body contact standards. Pollutants can migrate rapidly laterally and to groundwater from drainfields via macropore travel.

4. A public health hazard exists based on fecal coliform data for persons using the aquifer for domestic (drinking) or irrigation purposes. A health hazard similarly exists in several areas based on nitrate-nitrogen levels.

5. Action is needed to correct the existing groundwater problems. Because of the close interrelationship of several recommendations, they should not be acted upon independently.

_____

Joe B. Richards, Chairman

XL1268

VICTOR ATIYEH
GOVERNOR

Environmental Quality Commission

Mailing Address: BOX 1760, PORTLAND, OR 97207
522 SOUTHWEST 5th AVENUE, PORTLAND, OR 97204 PHONE (503) 229-5696

MEMORANDUM

TO: Environmental Quality Commission

FROM: Director

SUBJECT: Agenda Item K, April 18, 1980, EQC Meeting

Request for Approval of Multnomah County Groundwater Protection Plan

Background

At its February 24, 1978 and August 25, 1978 meetings (Agenda Items Q and E, Attachments 1 and 2, respectively) the EQC instructed the staff, in cooperation with Multnomah County, to develop a plan for the protection of the east county groundwater aquifer.

The County over the past year has developed an East County Groundwater Plan and has incorporated the plan as an element of the Multnomah County Comprehensive Plan (see Attachment 3 - Multnomah County Resolution PC 10-79 and Attachment 4 - Multnomah County Ordinance No. 216). The Groundwater Plan Impacts and Strategies are displayed in Attachment 5. Multnomah County has submitted this plan to the EQC for review and approval.

Evaluation

Other alternatives were evaluated by the County. These are highlighted in Attachment 4, pages 5, 6 and 7. The adopted Groundwater Plan calls for 90% of all development in the area to be sewered by 1990, but permits new development on cesspools as a temporary measure. The accomplishment of this goal would result in a long-term improvement of groundwater quality and permit the area to fully develop under the Multnomah County Land Use Plan.

Director's Recommendations

It is recommended that the EQC approve the Multnomah County East County Groundwater Plan subject to the following provisions and/or courses of action to be pursued by Multnomah County and the Department:

1. Multnomah County is proposing to up-zone areas along the Burnside lightrail corridor. The County wishes to have some and/or all of these high density developments utilize cesspools as a temporary measure. The County will submit this high density report to the DEQ in the near future. The Department's staff will analyze their proposal and submit its findings and recommendations to the EQC for review and approval.

2. The Department believes the basic goal and framework of the Groundwater Plan is a responsible program to improve and protect the groundwater quality. The only real issue is the method of financing the needed improvements. Several statements (Page 2 - Financing; Pages 2 and 3 - EQC/DEQ Policy; Pages 5 and 6 - Construction of Laterals) in the Groundwater Plan indicate the County has assumed that federal financing will be available for all elements of the proposed sewage treatment and collection system, including laterals. The County should realize that sewerage works construction grant funds have been cut in recent years and that local sewerage facilities' improvements might have to rely on local or state funding. In fact, sewerage service planning should be based on the assumption that federal funds will not be available. We believe the proposal to up-zone along the Burnside corridor provides an opportunity to construct the necessary interceptors and trunk sewers. Therefore, when Multnomah County submits its high density up-zone plan, the County shall also submit a financial plan on how to accomplish implementing the Groundwater Plan with local funds. We realize that utilizing this approach will probably lengthen the time to fully implement the Groundwater Plan. It is expected that the high density report and local financing plan would be submitted by January 1, 1981.

3. The interim expansion of the Multnomah County Inverness Sewage Treatment Plant may have to be authorized. This expansion would be funded utilizing local monies.

4. The DEQ will review its subsurface sewage disposal rules with regard to cesspools and recommend changes to the EQC this year. In addition, the staff will review the water quality and funding issues and may suggest either rule changes and/or legislative proposals.

Bill

WILLIAM H. YOUNG

Bob Gilbert:m
229-5292
April 3, 1980

ATTACHMENT 1

ROBERT W. STRAUB
GOVERNOR

Environmental Quality Commission

522 SW 5th Avenue, Portland, Oregon 97204 PHONE (503) 229-5696

MEMORANDUM

To: Environmental Quality Commission

From: Director

Subject: Agenda Item No. Q, February 24, 1978 EQC Meeting

Multnomah County Groundwater Aquifer - Status Report

Background

An area of approximately 30 square miles in central Multnomah County is currently unsewered. Development has occurred over the past 30 - 50 years utilizing individual on-site sewage disposal systems, predominantly cesspools. An estimated 10 million gallons of sewage per day is presently discharged into the underlying porous gravels.

The area of concern is a regional groundwater discharge zone which receives water from the Cascades as well as local hills bordering the area. The aquifer receives approximately 50,000 acre feet of annual recharge from precipitation in the 30 square mile area. Groundwater production capabilities could therefore range from 50,000 acre feet (16,335,000,000 gallons) to 100,000 acre feet (32,670,000,000 gallons) annually.

Presently several water districts utilize the aquifer for domestic water supply purposes. The City of Portland has recently filed for a water right for approximately 200 million gallons per day (MGD). The aquifer would be utilized as an alternate and supplemental source to Bull Run and provide for continued growth in the metropolitan area.

In 1971 and 1973 the Department conducted water quality studies of the Columbia Slough. The chemical data obtained during these studies revealed high concentrations of nitrate - nitrogen (NO_3 - N) in the springs forming the headwaters of the South Arm of Columbia Slough. The individual subsurface sewage disposal systems lying directly south of the South Arm of Columbia Slough were presumed to be the prime contributors to the NO_3 - N levels. As a result the Department, assisted by the State Engineer's Office (now the Water Resources Department), conducted a water quality-hydrogeological evaluation of the central Multnomah County area. Data was collected for the period June 1974 to July 1975. The U.S. Geological Survey (USGS) and City of Portland Bureau of Water Works, under its exploratory program have also collected additional data from some of the same and other wells within this area from 1975 to 1977.

These surveys revealed that NO_3 - N levels were significantly higher in the unsewered area (4 - 6 mg/l) than in adjacent sewered areas in Gresham and Troutdale. The higher concentrations were found in the private shallow wells, springs and municipal wells developing water from the upper portions of the aquifer, while the deeper wells revealed concentrations of less than 1.0 mg/l NO_3 - N. The subsurface disposal of sewage is considered to be the prime contributor of NO_3 - N to the groundwater and provides an enrichment quality to the waters in the South Arm of Columbia Slough.

Summation

1. Subsurface sewage disposal systems in central Multnomah County discharge approximately 10 MGD of sewage into the groundwater aquifer. This discharge is considered to be the prime contributor of NO_3 - N to the shallow groundwater system which empties into the South Arm of Columbia Slough.

2. The aquifer is presently utilized as a domestic groundwater supply source and the City of Portland is proposing to utilize this aquifer as an alternate and supplemental source to Bull Run and as a water supply for continued growth in the metropolitan area.

3. This past year the Department proposed to foreclose the use of cesspools throughout the state in amending its subsurface sewage disposal regulations. This proposed rule change impacts the draft Multnomah County Comprehensive Framework Plan which calls for R-5 zoning in central Multnomah County vs. an R-10 to R-15 required for use of a septic tank-drainfield system.

4. The Department has requested that the amendment be deferred until the Department, Multnomah County, CRAG and other affected agencies develop a plan to protect the groundwater in conformance with the land use plan.

Director's recommendation

It is the Director's recommendation that the EQC instruct the staff, in cooperation with Multnomah County, CRAG and other affected agencies, to develop a plan for protection of the groundwater aquifer. The proposed plan to be developed by no later than September 1978 with EQC adoption as soon as practicable but by no later than December 31, 1978.

Bill

WILLIAM H. YOUNG

Robert E. Gilbert:mkw
229-5292
2/9/78

ATTACHMENT II

ROBERT W. STRAUB
GOVERNOR

Environmental Quality Commission

POST OFFICE BOX 1760, PORTLAND, OREGON 97207 PHONE (503) 229-5696

MEMORANDUM

TO: Environmental Quality Commission

FROM: Director

SUBJECT: Agenda Item No. E, August 25, 1978 EQC Meeting

Multnomah County Groundwater Protection Plan

Background

At its February 24, 1978 meeting (Agenda Item No. Q, Attachment 1), the EQC instructed the staff, in cooperation with Multnomah County, CRAG and other affected agencies, to develop a plan for protection of the groundwater aquifer. A proposed Multnomah County Groundwater Protection Plan (Attachment 2) has been developed and is being submitted to the EQC for approval and issuance of a consent order.

Evaluation

In reviewing alternatives to provide protection of the groundwater, a moratorium on subsurface sewage disposal permits including cesspools was considered. However, at this time, based on projected growth and considering an aggressive program promoting connection to the county sewer system, protection of the aquifer can be obtained without such a moratorium. Sampling of the groundwater will be continued to monitor the water quality and progress of the protection plan.

Summation

The goal of the Multnomah County Groundwater Protection Plan is to collect 90 percent of all sanitary and industrial waste from the Inverness, central Multnomah County, service area and to treat and discharge these wastes to the Columbia River by 1990. The accomplishment of this goal would result in a long-term improvement of groundwater quality and permit the area to fully develop under the Multnomah County Land Use Plan.

The basic features of this plan include:

1. Multnomah County-Gresham-Troutdale Consortium 201 study scheduled for completion in October 1979. This facility plan would resolve regional or separate treatment plant expansion questions. Regional or independent expansion would occur in 1983-1985.

2. Engineering design (Step II) and construction (Step III) of Multnomah County Inverness 8 sewer project (Attachment 2, Map Page 7). Construction of the interceptor sewers would allow connection of high sewage users, such as schools, hospitals, apartments, restaurants, etc., to the sewage system.

3. Through the Multnomah County land use planning and the consortium facility planning process, Multnomah County will develop by July 1979, a specific management plan identifying a time schedule for the eventual phasing out of cesspools in the county. The emphasis of the plan will be on methods of assuring existing and future development connections to a completed area-wide sewer trunk system with added treatment capacity. Among the alternatives to be examined for inclusion in the plan will be:

   a. Conditions imposed on zoning actions coming before the county.

   b. Current requirements include hooking to a sewer line when it is available and submission of a non-remonstrance agreement for sewer line proposals.

   c. Requirement for construction of a "dry sewer" system in developments approved for cesspools prior to availability of the major trunk line.

   d. Designation of areas where development will occur only by connection onto the sewer system.

   Portions of the management plan would become county ordinances.

4. Plan connection schedule is as follows:

Year	Goal No. of Connections
1978	2,500
1979	3,000
1980	3,500
1981	4,000
1982	4,500
1985	13,000
1990	32,000

Director's Recommendation

Having found the foregoing facts to be true, I recommend that the EQC authorize the Director to enter into a consent order with Multnomah County containing the basic features as above subject to the following conditions:

1. Acknowledgment by the property owner (applicant) that any new on-site system is interim and agreement to connect when sewer system becomes available.

2. New construction must be oriented to future sewers. (Plumbed to facilitate abandonment of on-site system and connection to sewers.)

3. New developments (i.e. subdivisions, apartments) be required to connect and/or provide dry sewer.

In addition, it is the Director's recommendation that the EQC instruct the staff to amend its subsurface sewage disposal rules to allow approval of cesspools only under the above conditions and only in areas where a master sewerage plan is adopted and an implementation agency is formed.

Bill

WILLIAM H. YOUNG

Robert E. Gilbert:eve
229-5292
8/10/78

ATTACHMENT 3

BEFORE THE PLANNING COMMISSION
OF MULTNOMAH COUNTY, OREGON

In the Matter of Recommending to the Board of County Commissioners Adoption of an East County Groundwater Plan for Submittal to the State Environmental Quality Commission.	RESOLUTION PC 10-79

WHEREAS, the groundwater of East Multnomah County is a valuable resource serving many domestic water systems; and

WHEREAS, the degradation of the groundwater resource in East Multnomah County would be a threat to the public health, safety and welfare; and

WHEREAS, recent tests indicate significant increases in the pollution levels of the groundwater in East Multnomah County; and

WHEREAS, Policy 13 of the adopted Comprehensive Framework Land Use Plan states that the County policy is to maintain and enhance water quality in accordance with applicable standards; and

WHEREAS, several adopted Community Land Use Plans express grave concerns over the threat to groundwater quality posed by use of cesspools; and

WHEREAS, these Community plans recommend sewer service in the Inverness area to solve the problem; and

WHEREAS, the County has actively participated in many local and regional sewer planning and construction efforts; and

WHEREAS, a Board of County Commissioners' resolution of June 15, 1978, determined it necessary for the County to work with the Department of Environmental Quality towards completion of a management plan for the disposal of subsurface sewage that satisfies their mutual concerns; and

WHEREAS, the State Environmental Quality Commission has requested a specific management plan for the elimination of cesspools; now, therefore,

BE IT RESOLVED, the Planning Commission of Multnomah County, Oregon recommends that the Multnomah County Board of Commissioners adopt the East County Groundwater Plan (including summary) as County policy, and submit it to the State Environmental Quality Commission, as such.

Dated this 22nd day of October, 1979.

APPROVED AS TO FORM:

JOHN B. LEAHY
County Counsel

By _____
Deputy

PLANNING COMMISSION
MULTNOMAH COUNTY, OREGON

By _____
Chairman

EAST COUNTY GROUNDWATER PLAN SUMMARY

INTRODUCTION

This summary is an outgrowth of the Preliminary East County Groundwater Plan submitted to the EQC in August, 1978. The Final updated plan reflects the County's recently adopted community plans. It is also based upon the work of the East County Sanitary Sewer Consortium. This updated plan is a specific management plan for phasing out the cesspools in East Multnomah County.

The updated groundwater plan is based on a number of assumptions and reservations. They are as follows:

1. Regional Problems - The groundwater resource which this plan intends to protect extends across many jurisdictions: Portland, Gresham, Troutdale, as well as unincorporated Multnomah County. All these jurisdictions have existing development on cesspools which contributes to the groundwater problem. The County can only take responsibility and action in the Inverness sewer system area.

2. MSD - MSD's role in solving the regional groundwater problem has not been fully defined. The County offers to work with MSD, the EQC/DEQ, and other agencies on this matter.

3. Schedule - The goals for sewer connections presented on pages 10 and 11 of the preliminary groundwater plan are still basically valid. The schedules for treatment plant capacity expansion and completion of the trunk and interceptor systems have slipped due to lack of federal financing. These slippages have consumed all of the float time in the schedules. Provision of additional treatment capacity must be expedited if the County is to avoid a sewer moratorium. If the County proceeds immediately with a temporary expansion of its treatment plant, it will have barely enough time to obtain additional permanent capacity before a sewer moratorium takes effect.

4. Financing - The updated plan assumes that federal financing will be available as needed for all elements of the proposed sewage treatment and collection system, including laterals. State law prohibits the County from spending General Fund revenues to benefit the Inverness sewer service area. The magnitude of expenditures involved in solving the groundwater problem, 50 to 60 million dollars, cannot be provided by the service area alone. The County is exploring other financing options. If Federal financing is not available when requested, the County will not be able to meet its schedule for solving the groundwater problem.

5. EQC/DEQ Policy - The County assumes that there will be a direct relationship between the EQC assessment of the groundwater problem and its financing policies. That is, if the EQC decides that there is a serious groundwater

problem, then they will provide funds for the solution. Conversely, if the EQC does not provide funding for the solution to the problem, the County will assume that the EQC does not consider the problem serious. The County further assumes that Administrative Rule OAR 340.44 provides an adequate precedent for the EQC to fund the County groundwater problem as they have funded the solution of the groundwater problem in Bend.

6. Moratorium - The County assumes that a sewer moratorium would have no significant effect on solving the groundwater problem in East County. This assumption is based on the premise that existing development is and will continue to be the source of the vast majority of groundwater pollution. The population increase from new development will be a small percentage of existing population. Most new development is going in on sewer. Prohibiting additional development on cesspools would not reduce groundwater pollution, but it would seriously upset the County's Comprehensive Plan. The other premise of this assumption is that construction of Inverness 8 interceptor and trunk lines will significantly reduce groundwater pollution by connecting several major sewage sources to sewer. Two hospitals, several schools and other major institutions would be involved. This reduction would probably compensate for the increase from development on cesspools.

In order to clarify these issues, the County has divided the updated plan into four topics, with problem analysis and recommendations for each topic.

5

1. Existing Development.

A. Problem Analysis.

The existing population of the Inverness service area is and will continue to be a major source of groundwater contamination for the area. Providing sewers for the existing population is the major obstacle in solving the groundwater problem.

Approximately 75,000 people live in the Inverness service area. This population is sufficient to make it the fourth largest city and the ninth largest county in Oregon. Approximately 90% of the population do not have sanitary sewers.

The County does not have the interceptor and trunk lines or the treatment plant capacity to serve this population. Such improvements would cost roughly 20 million dollars. Under current State law, property owners would have to pay the full cost of lateral sewers to connect to the Inverness system. A complete lateral system would cost, roughly, an additional 40 million dollars.

B. Recommendations for Existing Development.

1. Major Construction - The County and other involved parties would proceed with federal financing to obtain additional sewage treatment capacity through the East County Consortium and to construct the Unit 8 trunk and interceptor lines. There is not sufficient time under any scheme for the County to obtain additional permanent treatment capacity before the Inverness plant runs out of

its current capacity. Therefore, the County must proceed immediately with an interim expansion of the plant.

The County would prepare a 201 Plan at its own expense for a temporary expansion of the plant. Such an expansion would involve minor modifications rather than permanent construction, and would probably increase the capacity by approximately one half million gallons per day. The County would submit its 201 proposal to the DEQ for informal review. Assuming the approval of the 201 Plan, the County would proceed at its own expense with the temporary expansion. The earliest date for completing the temporary expansion is the Summer of 1982. This is also the date at which the County projects the Inverness Plant to reach capacity. The temporary expansion should provide capacity for an additional two years of service growth.

2. Construction of Laterals - Once the County has adequate treatment capacity and a complete trunk and interceptor system, it will initiate resolutions for the construction of lateral sewers throughout the Inverness sewer system. Once the laterals are complete, the County will require all existing development to hook up to sewer. This step will be preceded by a Community Involvement and Education Program.

It is assumed the construction of laterals will be federally financed with property owners providing the local match. To

obtain federal financing, it is assumed that the EQC will pass an Administrative Rule similar to Administrive Rule OAR 340.44, giving the East County area eligibility and priority for federal funds. If federal financing is not available, the County will proceed with other financing options. However, it may not be possible to meet the schedule for sewer connections if federal funds are unavailable.

3. Contamination Contingency Plan - The County will initiate planning for mitigating actions, should contamination exceed federal standards. The County would coordinate with DEQ, Water Districts, etc. DEQ would increase its monitoring of the groundwater problem.

2. New Development - Undeveloped Area.

A. Problem Analysis.

Almost all of the large vacant parcels in the Inverness service area are north of Halsey Street. The County expects most of the growth in population and industrial activity in the Inverness area to occur here. The current development pattern bears out this prediction.

The area is well served with interceptors and trunk sewers. The County requires connection to sanitary sewer as a condition of development in this area. Given the large scale of most developments in this area, sewers are economically feasible and have not inhibited development.

B. Recommendations for New Development in the Undeveloped Area.

1. Major Construction - Interceptors and trunks have already been constructed for this area.

2. Mandatory Sewers - Sewer connections are already a condition of development in this area.

3. Lateral Sewers - Additional laterals and trunks for this area are to be constructed by developers. The County may expedite this process by initiating improvements by resolution. This practice would be restricted to projects supported by property owners.

4. Storm Water Recharge - The County Street Standards Ordinance requires sump bottom manholes for storm drainage systems wherever feasible. The intent is to increase the flushing of the East County acquifer with storm water. Such flushing has been inhibited by the increase in paved surface.

3. New Development - Infill Area.

A. Problem Analysis.

The portion of the Inverness service area south of Halsey Street is a built-up area with few large vacant parcels. However, large lot sizes in this area provide many opportunities for flag lots and other forms of infill development. The County Comprehensive Plan encourages

infill development in this area. The plan also calls for very high density residential development in the vicinity of transit stations on the proposed light rail line on Burnside Street. The existing population of the Inverness portion of the LRT corridor is approximately 26,000. The comprehensive plan calls for an additional 10-15,000 people to live in this area. About 5000 - 6000 of these people will be in the high density units mentioned previously, the remainder in smaller infill developments.

This area is generally without interceptor and trunk sewers. Existing and new developments use cesspool/septic tank systems.

B. Recommendations for New Development in the Infill Area.

1. Deed Restriction - The County requires a sewer deed restriction as a condition of granting a building permit in the Inverness area. The deed restriction states that any property owner will not remonstrate against an assessment for lateral sewers.

2. Dry Sewers - The County will draft an ordinance that would require dry sewers for any major development not on a trunk sewer line.

3. Requirement for Connection - Once the County has a treatment capacity and a complete trunk and lateral system, new infill development would be required to connect to the sewer as a condition of construction.

4. High Density Plan - The County is preparing a special report on the high density clusters shown along the Burnside light rail corridor. The County will submit a report to the DEQ showing the location, projected population, timing of development, and timing of sewer connection for each of these clusters. The DEQ will respond with a policy for cesspools for each cluster.

4. Sewage Treatment Capacity.

A. Problem Analysis.

The County expects the existing Inverness sewage treatment plant to reach capacity in 1981 or 1982. The County plans to proceed with an interim plant expansion that will permit additional sewer hookups until the Summer of 1984. The County must obtain additional treatment capacity before that date or face a sewer moratorium. Either the existing plant must be expanded or the County must connect the Inverness system to a regional treatment plant. The CRAG/MSD 208 Sewer Plan recommends the regionalization alternative. The CRAG/MSD Plan permits other alternatives as long as they are developed by the East County Consortium through a 201 process demonstrating the superiority of the alternatives to the regionalization option.

This issue cannot be resolved easily without adequate study of the other alternative - local planned expansion. The County, Gresham, and Troutdale have drawn up a 201 plan of study and have selected a consultant. This study has been delayed at least a year because it was not funded by the EQC last year.

Regardless of the alternative chosen, time is running out to obtain additional capacity. The County estimates that regional plant capacity cannot be available any earlier than Summer of 1985, a year after the temporary Inverness expansion reaches capacity.

B. Recommendations for Treatment Capacity.

1. Financing - The EQC should give the East County Consortium 201 Study immediate priority for funding. EQC should also establish a funding priority for construction of the additional treatment capacity.

2. Implementation - The Consortium should be prepared to expedite the selected alternative for additional treatment capacity.

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BEFORE THE BOARD OF COUNTY COMMISSIONERS

FOR MULTNOMAH COUNTY, OREGON

In the Matter of Working with the Department of Environmental Quality for a Management Plan for the Disposal of Subsurface Sewage in East-Central Multnomah County	)	RESOLUTION

WHEREAS it is in the best interests of the citizens of Multnomah County that adequate provision be made for the disposal of sewage wastes in such a way as to protect public health, water quality and accommodate the developmental needs of East-Central Multnomah County; and

WHEREAS scientific analysis of the ground water of East-Central Multnomah County by the Department of Environmental Quality has indicated substantial increasing water pollution by measurement of nitrate levels, a recognized subsurface sewage polutant indicator; and

WHEREAS the Department of Environmental Quality is statutorily charged with the promulgation and enforcement of administrative rules for the installation of subsurface disposal systems in the State of Oregon; and

WHEREAS Multnomah County is responsible for effectively administering the administrative rules and regulating land uses in such a way as to protect the environmental quality of the County and provide for development associated with the need for housing and a balanced economy for the citizens of the County; now, therefore,

BE IT RESOLVED that the Board of County Commissioners for Multnomah County determines it necessary to work with the Department of Environmental Quality toward the completion of a management plan for the disposal of subsurface sewage that satisfies their mutual concerns.

June 15, 1978

BOARD OF COUNTY COMMISSIONERS
MULTNOMAH COUNTY, OREGON

By Donald E. Clark
Chairman

APPROVED AS TO FORM:

JOHN B. LEAHY
County Counsel

By Charles S. Crumpacker
Deputy

MULTNOMAH COUNTY OREGON

DEPARTMENT OF ENVIRONMENTAL SERVICES
2115 S E MORRISON STREET
PORTLAND, OREGON 97214
(503) 248-5000

June 12, 1978

Mr. Donald E. Clark, Chairman
Board of County Commissioners
Room 606 - Courthouse
Portland, OR 97204

RE: Subsurface Sewage Disposal within the Inverness Drainage ~~Road~~ Area

Dear Sir:

In 1975 the State Environmental Quality Commission agreed to allow continuation of the established County practice of allowing development using cesspools in East Multnomah County where sub-soil conditions are satisfactory. The State administrative rules (that were subsequently adopted) were based on the position articulated in Mel Gordon's statement of May 21, 1975.

The County acknowledged increasing levels of ground water aquifer pollution as a direct result of existing cesspool systems. Information available at that time concerning the rate of pollution did not indicate any emerging health hazard. The County's argument in favor of continued use of cesspools for new development was substantially based on the need for urban densities to financially support the construction of public sewers in the area which was consistent with the County's Comprehensive Plan. The larger land area needed for septic tanks would tend to defeat this objective.

In 1977, further studies by DEQ and other agencies along with the development of the water quality plan (PL 92-500 Sec 208) conducted by CRAG, brought new focus on the pollution issue. A recently proposed revision to the administrative rules to prohibit the development of land using cesspools was deferred until DEQ, Multnomah County, CRAG, and other affected agencies could develop a plan to protect the ground water in conformance with the Land Use Plan.

On February 24, 1978, the EQC instructed the DEQ staff to develop a plan for protection of the ground water aquifer in Multnomah County to be completed no later than September, 1978, with EQC adoption as soon as practicable but no later than December 31, 1978.

EQC will be considering funding priorities for public sewer project proposals in July, 1978. It is appropriate that the County's position on the ground water aquifer protection plan be developed as soon as possible. This will provide justification for prioritizing sewer projects currently being considered for extension of the service capacity for the County's Inverness sewer system.

The following resolution and preliminary East County ground water plan are forwarded to the Board of County Commissioners with the recommendation that the resolution be approved.

Very truly yours,

Rena Cusma

RENA CUSMA
Director

OJD/klw

Enclosure

PRELIMINARY EAST COUNTY GROUNDWATER PLAN

A. Introduction

The Oregon Environmental Quality Commision through the Department of Environmental Quality has expressed concern with the groundwater problem in East Multnomah County. The County has been instructed to prepare, in cooperation with D.E.Q., a plan for solving the subsurface waste disposal problem to protect the groundwater aquifer flowing to the Columbia River within the unsewered areas. This report constitutes the County's plan to alleviate the amount of subsurface waste ultimately discharging into the groundwater system. The provision of a sewer system within the Inverness Service area is seen as a top priority. The trunks, interceptors, and laterals will have to be in place for the sewer system to function independent of how the waste will be treated. The issues of responsibility for waste treatment are now being studied within East Multnomah County, but the basic premise of the need for a sewer line system and its construction is a given and plans for this phase should not be hampered by the resolution of the treatment issues.

B. Findings

1. Resource Problem

a. As a result of studies being conducted by the Department of Environmental Quality and the City of Portland Bureau of Water Works, information concerning the pollution of groundwater has become more available. For a number of years the urbanization of the unincorporated area between Portland and the East County cities has been taking place with cesspools and septic tanks being the primary means of waste disposal. This has resulted in large amounts (10 - 12 m.g.d.) of waste going into the ground. Waste quality tests in water district wells and City of Portland exploratory wells have revealed an increase in nitrate-nitrogen levels over recent years. This contaminant, besides being a problem for babies in and of itself, is also an indicator that severe problems are developing for the aquifer which drains toward the Columbia River.

b. Nitrate-nitrogen levels of greater than 10 m.g./liter (the Federal EPA Standard for public drinking water) is exceeded by some wells and shows signs of further increases in the surface levels of groundwater. Tests conducted by the City of Portland indicate that:

(1) Due to the age of the water tested, levels could get much higher in the future even if all waste disposal were to cease immediately.

2) The contaminated groundwater has the ability to migrate to lower levels if increased pumping of water occurs in the middle of lower levels of the aquifer. Continued increases in subsurface waste will not change the situation drastically in the present, but will ultimately prolong the problem.

c. The amount of imperviable surface (streets, houses, etc.) for the area prevents the necessary flushing action that rainwater can give. Drainage into the ground rather than on its surface can have a beneficial effect.

d. Nitrate-nitrogen contamination as well as other parameters presented by subsurface waste disposal such as viruses are not filterable by the existing system and are very costly to filter by other methods.

e. Septic tanks are much more efficient at ridding the waste of nitrogen by fixing it in the vegetation through the soil. Cesspools allow the wastes to migrate rapidly downward into oxygen free areas where the nitrate-nitrogen will remain for indefinate periods.

f. Since some water districts and the City of Portland have to use this aquifer for continued domestic water supply purposes, it becomes even more imperative to insure the future potability of the groundwater. Although further research is necessary to assess the danger and accurately monitor the water quality, enough is now known to certify that a problem does exist, that it most likely will get worse before it gets better. Action to solve this problem is necessary now rather than waiting until quality levels exceed standards in drinking water.

2. Population Growth & Services

a. The County only has the ability to correct the problem of ground water contamination within the Inverness Sewer Service area. It is within this area, however, that the problem is the greatest since it contributes a large share of the subsurface waste to the aquifer recharge area. The balance of the report will deal with this area. (SEE MAP, Page 7)

b. The period of greatest development and population growth for this area has already occurred. From 1940 to 1960, a great deal of growth occurred and by 1960 the population was 80% of what it is estimated to be today. The amount of growth projected for the area by the year 2000 represents an increase of about 12,000 persons and an increase of about the same number of dwelling units. The reason for the closeness of the two figures is explained by the forecasted decrease in persons per dwelling unit.

CRAG Population Projections

Inverness Treatment Plant Service Area

C.T. \ Yr.	** 1960	** 1970	1975	1985	1990	2000
73*	2863	1905	1626	1375	1284	1192
77	2388	2119	1865	2050	2000	2000
78	2291	2379	2115	2400	2400	2400
79	3478	3945	3782	4450	4600	4750
80.01	3046	3492	3455	3700	3750	3800
80.02	3115	3180	2913	3250	3300	3350
81	6232	6650	6356	6886	7011	7360
82.01*	2485	2666	2540	2746	2796	2935
82.02	4724	5193	4776	5350	5400	6700
83.0*	5079	5408	4821	5318	5401	5526
92.01	4208	5385	5508	5850	6000	6600
92.02	2832	3942	3964	4300	4500	4650
93	4964	6634	6897	7250	7500	7700
94	4060	6048	5965	6950	7400	7950
95	415	4200	5882	5500	6000	6450
97.01	1797	4246	4552	4600	4700	5250
97.02	5200	6549	6604	6800	6900	7000
Totals	59,177	73,941	73,621	78,825	80,942	85,613
Dwelling Units	16,975	24,243	28,870	33,259	35,500	40,768
Person/ Dwelling Unit	3.5	3.05	2.55	2.37	2.28	2.1

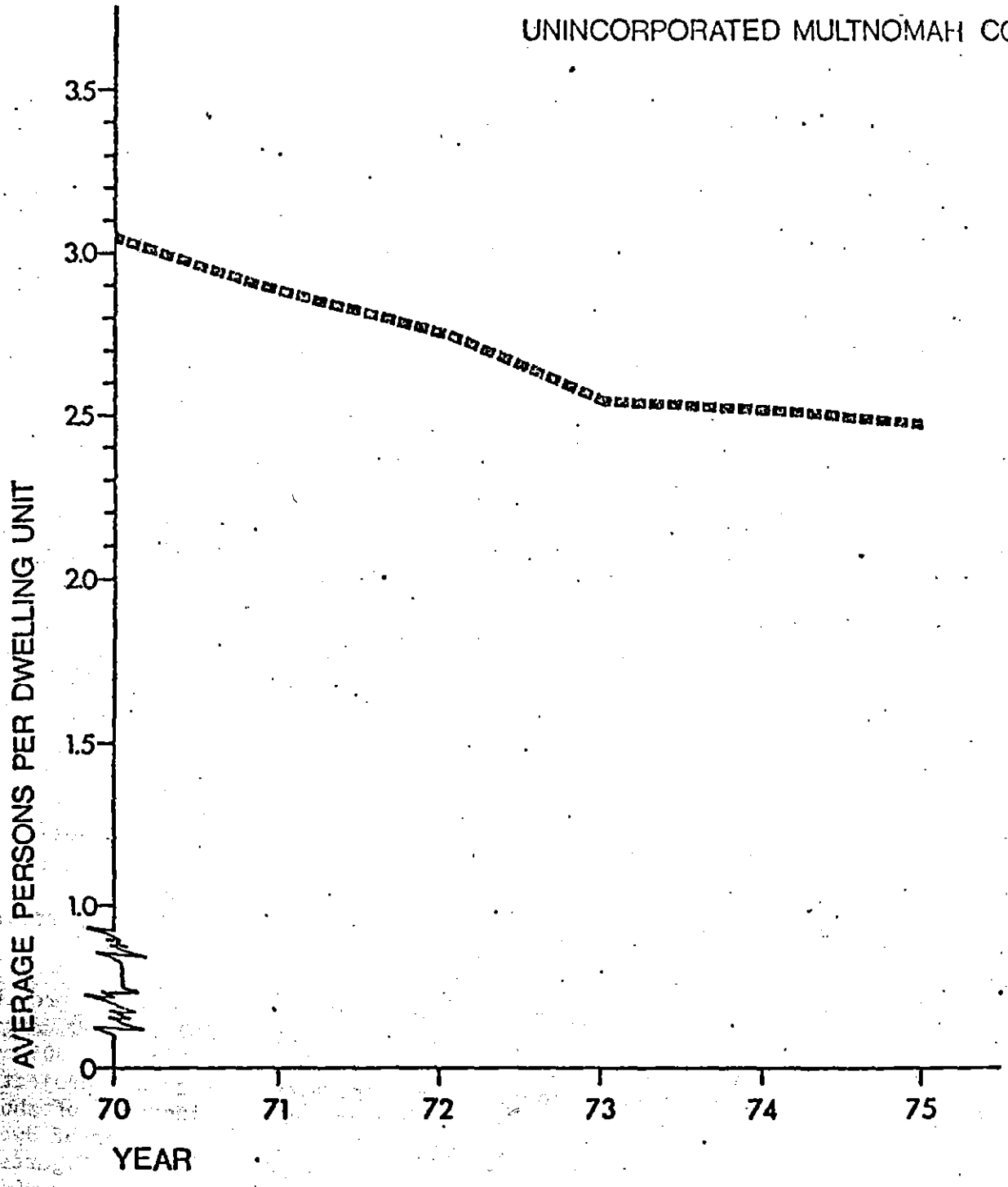
73 @ 91.7%
82.01 @ 97.8%
83 @ 83.1%

Average growth rate from 1970-2000 = 389 persons per year for a total of 11,672

* Proportion of Census Tract in Service Area
** Census Figures

HOUSEHOLD SIZE

UNINCORPORATED MULTNOMAH CO.



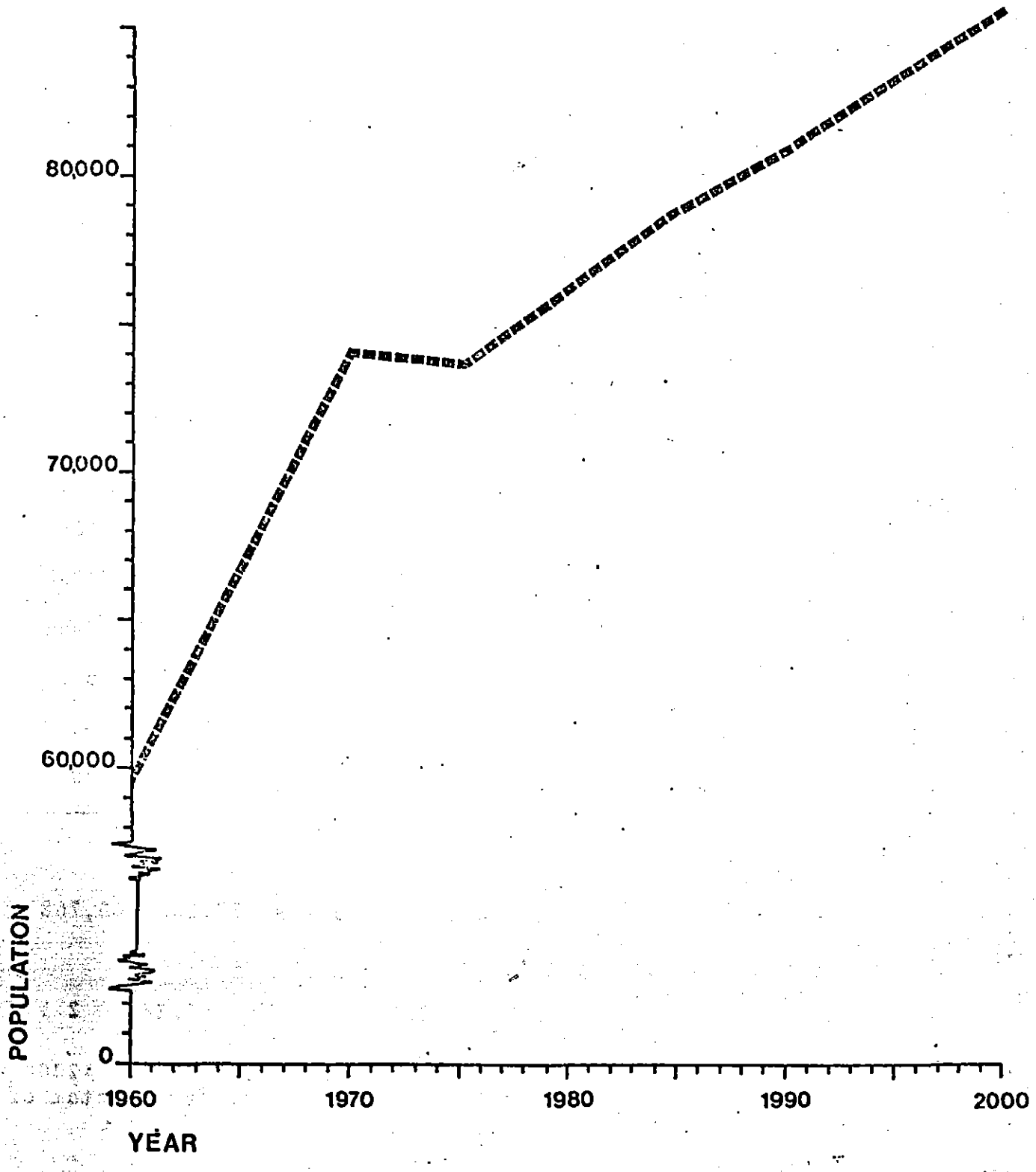
CRAG, Building Permit Statistics

1960

7

POPULATION GROWTH IN THE INVERNESS SEWER SERVICE AREA

CRAG Projections



c. The additional growth represents a 14% population increase in the Inverness Service area by the year 2000. This is easily explained by the fact that most of the area is already developed to a fairly high density with homes which are likely to still be present by the year 2000. The County is encouraging added density within the urban growth boundary so it is conceivable that more people could be present in the area, but the difference could not be too great due to the already developed portion for much of the land.

d. The basic waste disposal problem is already largely present and will not increase by any great amounts as it will be limited by the amount of available space for development and by the type of disposal required for future development (especially non-residential development). The scope of the problem then becomes more one of coping with the existing waste disposal than one of controlling future increases.

3. The Present Sewer System

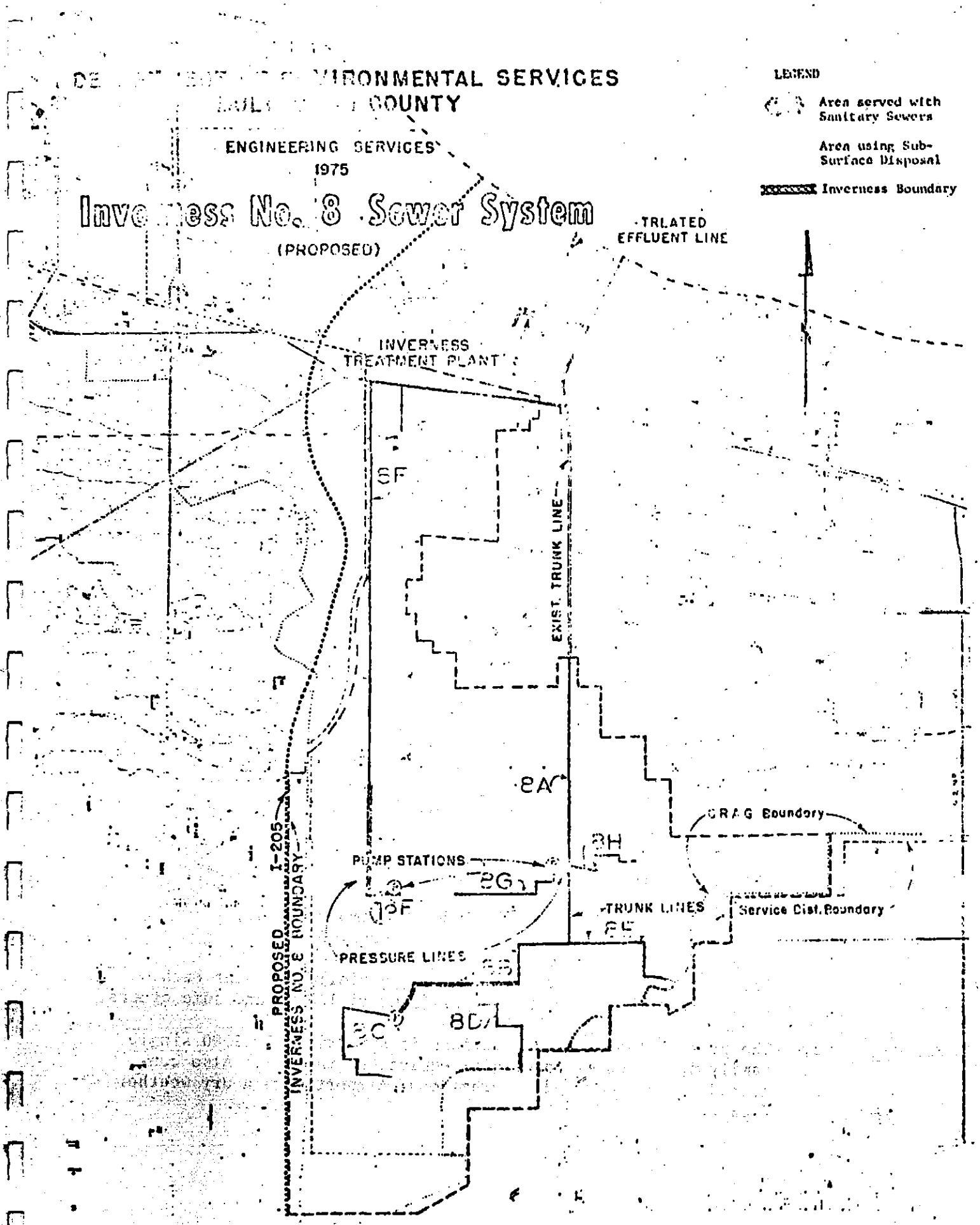
a. The present Inverness-Central County Sewerage Collection System included the following trunk sewers:

NE 122nd Avenue from Inverness Drive to NE Sacramento Street;
NE Whitaker Way from NE 122nd Avenue to NE 136th Avenue;
NE Sandy Blvd. from NE 122nd Avenue to NE 162nd Avenue;
NE 148th Avenue from NE Sandy Blvd. to NE 150th Drive;
NE 162nd Avenue from NE Sandy Blvd. to NE Halsey Street;
NE Halsey Street from NE 150th Avenue to NE 162nd Avenue;
Columbia Slough from NE 82nd Avenue to NE 105th Avenue
Portland International Airport to NE 105th Avenue;
NE 105th Avenue and NE Holman Street to Inverness Sewage Treatment Plant.

b. The following lateral sewers are included in the systems:

Barker Brook Subdivision (includes Holcomb Heights), Highwood Subdivision, Prestige Park, Argay Downs, Rivercliff Estates, Hollyview, Clearview (partial), Stonehurst, Lancashire, Strathmore (partial), Schuyler Park, Victor Seven, Airway Park, A. P. Industrial Park and some others.

c. The present number of connections is approximately 2500 single family dwellings or commercial equivalent thereof. Also connected is the Portland International Airport with a dry weather flow of 0.5 MGD.


DE VIRONMENTAL SERVICES
COUNTY
ENGINEERING SERVICES
1975
Inverness No. 8 Sewer System
(PROPOSED)
LEGEND
Area served with Sanitary Sewers
Area using Sub-Surface Disposal
Inverness Boundary
TRLATED EFFLUENT LINE
INVERNESS TREATMENT PLANT
EXIST. TRUNK LINE
8F
8A
8H
8G
8E
8B
8C
8D
CRAG Boundary
PUMP STATIONS
TRUNK LINES
Service Dist. Boundary
PRESSURE LINES
I-205
PROPOSED INVERNESS NO. 8 BOUNDARY

d. In new subdivisions having sewers, all units are required to connect to sanitary sewer. No cesspool or septic tank may be replaced within 300 feet of an accessible sanitary sewer, in compliance with the Department of Environmental Quality regulations. Therefore, the majority of sewered homes lie in the area within one-quarter mile of NE Sandy Blvd. or the three main sewered streets extending south therefrom.

It should be noted that since the construction of the Inverness Sewage Treatment Plant, fewer than 100 owners of existing homes have installed and/or connected to sanitary sewers. Almost all of those utilizing sewer service are doing so in response to building requirements.

A "dry sewer" was constructed in SE Main Street from SE 100th Avenue to SE Cherry Blossom Drive in 1976 as part of the Portland Adventist Hospital complex. This will be utilized as a portion of the Inverness VIII Project. The pump station site at SE Cherry Blossom Drive and SE Main Street was also acquired at that time.

e. Presently, petitions are being circulated for lateral sewers on NE Russell Street from NE 117th Avenue to NE 122nd Avenue, NE Marx Street from NE 101st Avenue to NE 115th Avenue and the extension of Inverness VII Trunk Sewer from NE 136th Avenue and NE Whitaker Way to NE 148th Ave.

4. Required Sewerage Facilities.

The elimination of subsurface disposal of sanitary wastes in the Inverness service area will require a large capital investment. The following approximate costs of required publicly owned facilities represent current costs and are accurate for preliminary planning purposes only.

a.	Treatment Plant Expansion (to 10.5MGD)	$12,000,000
b.	Trunk & Interceptor Construction	5,000,000
c.	Lateral Sewer Construction	35,000,000
	TOTAL:	52,000,000

5. The Current Citizen Involvement and Attitudes.

a. As a part of the Comprehensive Planning Program several communities were formed to provide the necessary citizen involvement. The communities involved in the Inverness Service area are Cully/Parkrose, Hazelwood, Powelhurst, and Wilkes/Rockwood. Basically the citizen attitudes thus far have been supportive of the need for sewering the area. As a result of presentations by staff at

the County level, there has been an understanding generated of the seriousness of the resource problem. The importance of early education and communication has made it clear that these factors can go a long way toward solving the initial citizen resistance to the need for sewers.

C. Issues:

The issues brought up by the findings section of this plan are many and some of them do not have easy answers. The following plan section will attempt to answer as many of the issues as possible:

1. Accepting the severity of the groundwater problems as a given, what is the best way to alleviate the amount of subsurface waste presently going into the ground?

2. Who will bear the costs of solutions and what are the best methods to implement them?

3. How can communications and education be improved to gain the necessary citizen support for sewers if sewers are to become politically feasible.

4. A moratorium on all new development until sewers are available will substantially impact the Comprehensive Framework Plan policies on land use which encourage higher densities and infill within the urban growth boundary. What is the best course of action to achieve both improved groundwater and provide for projected housing and employment needs?

5. Cooperation and interconnected progress and regulation will be necessary among agencies if success is to be achieved in reducing subsurface waste disposal.

6. What other techniques besides waste treatment can be implemented to help reduce the contaminants already existing within the groundwater system? In the last 5 years, storm sewers in this area have been constructed with "sump-bottom" manholes in order that as much storm water as possible be "recharged" to the aquifer. This should result in continued dilution of groundwater pollutants.

7. No immediate solution will solve the problem and a long term program is necessary, but what combinations of short term and long term actions will be both politically and technically acceptable?

8. Improved priority for Multnomah County construction grant requests will be a substantial factor in diverting subsurface waste. The construction of Inverness 8 will permit immediate connection of two hospital complexes, several shopping centers, many multi-family apartments and schools, and extend the necessary "back-bone" of the central Multnomah County sewerage collection system.

D. Plan

1. Objective.

The goal of the following plan is to collect 90 percent of all sanitary and industrial waste from the Inverness service area and to treat these wastes at the Inverness Treatment Plant or a regional treatment plant. These wastes should be collected, treated and discharged to the Columbia River by 1990. The accomplishment of this goal would result in a long-term improvement of ground water quality and permit the area to fully develop under the Multnomah County Land Use Plan.

2. Plan Schedule.

1978 - Goal 2500 Connections.

June - East County Groundwater Plan
East County Plan Resolution ???
Consultant Agreement for Plant Capacity and Infiltration Study

Nov. - Plant Capacity and Infiltration Study completed. Begun, not completed

1979 - Goal 3000 Connections.

Jan. - Step I Federal grant approval for Gresham - Troutdale - Multnomah Consortium 201 Study.(
Step II Federal grant approval for Inverness 8 Sewer Project.

June - Land Use Supplement to East County Groundwater Plan.

Oct. - Gresham - Troutdale - Multnomah Consortium 201 Study completed.

Nov. - Regional or separate treatment plant decision.

1980 - Goal 3500 Connections.

Jan. - Step III Federal grant approval for Inverness 8 Sewer Project.

March - Step II Federal grant approval for Inverness or Regional Treatment Plant Expansion.

1981 - Goal 4000 Connections.

March - Step III Federal grant approval for Inverness or Regional Treatment Plant Expansion

1982 - Goal 4500 Connections.

July - Sewer connection rate evaluation report.

Dec. - Inverness or Regional Treatment Plant Expansion completed.

1985 - Goal 13,000 Connections.

1990 - Goal 32,000 Connections.

3. Implementation.

a. Funding.

It will be necessary to invest approximately $52 million in sewer facilities in order to meet the goal. Sewers in this area are provided by the Central County Service District. The Central County District financing plan is based on funding treatment plant, sewer trunk, and interceptor facilities with Federal grants and loans from Multnomah County. The County funds are recovered by connection charges collected at the time of the connection. The financing plan provides for lateral sewer construction by local improvement districts with the benefited property owners paying the cost of construction.

The construction of sewers costing $52 million is a major undertaking for the people in this area. The preliminary schedule included as part of this plan assumes that Federal grants will be available to support treatment plant and interceptor construction. The availability of these grant funds are an essential element of the plan.

b. Citizen Involvement.

The Comprehensive Plan citizen groups will carry on beyond the Comprehensive planning stage. They will be useful advisory groups in further developing the strategy to solve the current waste disposal problems. The generation of citizen support for measures designed to obtain hook-ups of existing subsurface waste disposal systems to sewers will be vital if any program is to succeed. The established citizen involvement process is seen as a useful way to gain this support.

c. Legislation.

ORS 451 permits the construction of sewers by the County when a majority of the property owners or voters favor the installation of sewers. The County does not have statutory authority to force property owners to pay for the installation of lateral sewers.

3/

The Inverness Treatment Plant is expected to reach capacity in 1982 or 1983 at the present connection rate. A major increase in this rate prior to the availability of additional treatment facilities could result in treatment plant overloading and unsatisfactory treatment. It is appropriate that this connection rate be reviewed in 1982 to determine the effect of the County sewer promotion efforts. If the County sewer promotion efforts are not sufficiently effective, it may be necessary to ask the legislature for statutory authority to construct a lateral sewer system in this area.

d. Land Use Supplement to the East County Groundwater Plan.

The Multnomah County Land Use Plan will not be available until early 1979. This supplement to be prepared with and completed after the land use plan will be a specific management plan for the phasing out of cesspools in East Multnomah County.

LAND USE SUPPLEMENT
EAST COUNTY GROUNDWATER PLAN

Implementation

d. Land Use Plans

As the result of urban community plan formulation policies regarding future development are now in place for the Inverness Service Area. The Inverness Service Area is affected by community plans for Columbia, Cully/Parkrose, Hazelwood, and small parts of Powellhurst and Wilkes/Rockwood (see map). The format of these community plans closely follows that of the Multnomah County Comprehensive Framework Plan (adopted Sept., 1977), and in many cases directly references the overall policy considerations.

The overall planning policy which addresses the problems of East County groundwater problems in policy No. 37 on Public Utilities. The pertinent language in that policy states:

> THE COUNTY'S POLICY IS TO REQUIRE A FINDING PRIOR TO APPROVAL OF A LEGISLATIVE OR QUASI-JUDICIAL ACTION THAT:

Water and Disposal System

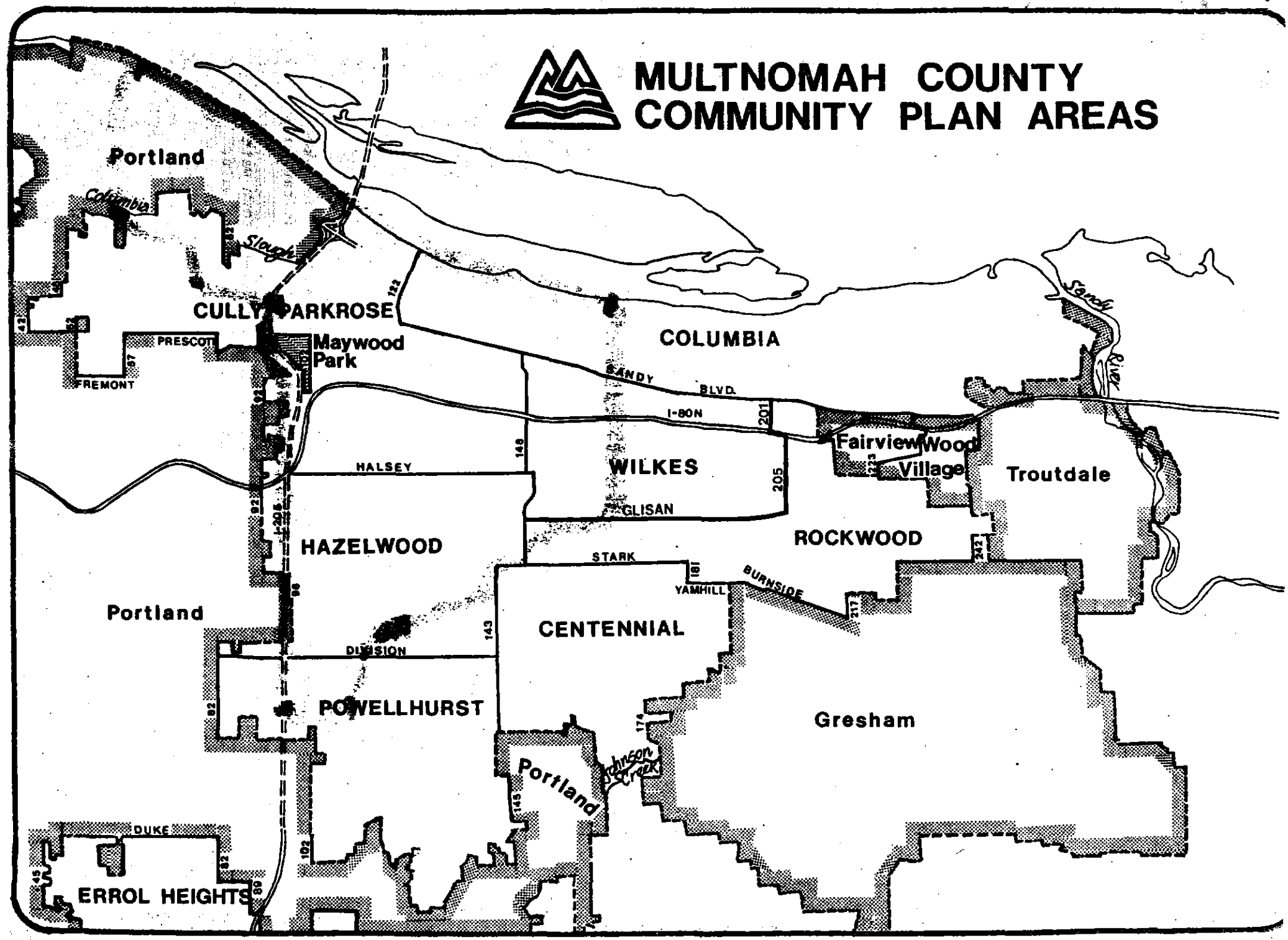
A. The proposed use can be connected to a public sewer and water system, both of which have adequate capacity; or

B. The proposed use can be connected to a public water system, and the Oregon Department of Environmental Quality (DEQ) will approve a subsurface sewage disposal system on the site; or

C. There is an adequate private water system, and the Oregon Department of Environmental Quality (DEQ) will approve a subsurface sewage disposal system; or

D. There is an adequate private water system, and a public sewer with adequate capacity.

As an adjunct to the utilities, community facilities, and transportation policies, Policy No. 32 contains the need for capital improvements to implement the policies. The language in the Capital Improvements Policy makes it apparent that capital improvements will be programmed to protect the health of the residents in the County. Policy No. 32 states:


MULTNOMAH COUNTY
COMMUNITY PLAN AREAS
Portland
Columbia
Slough
CULLY
PARKROSE
Maywood Park
PRESCOTT
FREMONT
COLUMBIA
SANDY BLVD.
I-80N
Sandy River
Fairview
Wood Village
Troutdale
WILKES
HALSEY
GLISAN
HAZELWOOD
ROCKWOOD
STARK
YAMHILL
BURNSIDE
Portland
CENTENNIAL
DIVISION
POWELLHURST
Gresham
Johnson Creek
Portland
DUKE
ERROL HEIGHTS

THE COUNTY'S POLICY IS TO ESTABLISH AND MAINTAIN A CAPITAL IMPROVEMENTS PROGRAM TO ACHIEVE DESIRED TYPES AND LEVELS OF PUBLIC SERVICES AND FACILITIES, AND TO PROVIDE FOR THE TIMELY, ORDERLY AND EFFICIENT ARRANGEMENT OF PUBLIC SERVICES AND FACILITIES IN ACCORD WITH THE PLAN POLICIES AND STRATEGIES, CONSIDERING:

A. The health, safety and general welfare of County residents;

B. The level of services required, based upon the needs and uses permitted in the urban, rural and natural resource areas;

C. The equitable distribution of costs based upon the benefits received from the public utility system or facility; and

D. The environmental, social and economic impacts.

An additional policy in the Frameworks Plan is Policy No. 13 on Air and Water Quality. That policy states:

THE COUNTY'S POLICY IS TO SUPPORT THE MAINTENANCE, AND WHERE POSSIBLE, THE ENHANCEMENT OF AIR AND WATER QUALITY AND THE REDUCTION OF NOISE POLLUTION BY REQUIRING, PRIOR TO APPROVAL OF A LEGISLATIVE OR QUASI-JUDICIAL ACTION, A STATEMENT FROM THE APPROPRIATE AGENCY THAT ALL STANDARDS CAN BE MET WITH RESPECT TO:

A. Air Quality;
B. Water Quality; and
C. Noise Levels.

In addition the strategy section of this policy contains the following language:

Planning

1. The County should participate in environmental quality planning through participation in the regional planning process and committee structure charged with the preparation of:

   A. An Air Quality Maintenance Plan;
   B. A Water Quality Management Plan; and
   C. A Land Use Plan.

2. Community Plan elements of the Comprehensive Plan should take into consideration airshed quality and noise level limitations.

3. The County should prepare and maintain coordinated storm water management and sewer plans in accord with the regional water quality management plan.

Implementation

1. The following should be addressed in the preparation of the Community Development Ordinance:

   A. As a part of the Capital Improvements Program process, priority should be given to areas where the public health, safety or welfare is being impaired.

Within each community plan, which were those plans prepared for the urbanized area of unincorporated East Multnomah County, direct reference is made to the two above mentioned Framework Plan Policies. In addition, some specific language has been included in each separate community plan depending upon the specifics of that area. The following material relates to those individual plans:

1. Cully/Parkrose (C.P.) Policy 13 - Air & Water Quality

   Strategies (in addition to policy) The County should:

   A. Act to oppose the degradation of water quality in the Columbia Slough and domestic water aquifers by working towards the development of a sanitary sewerage system for the community and other communities in the same drainage system.

   B. Review all land development application in the Columbia Slough Lowlands to assure their compatability with the areas potential for the regions second major source of domestic water. This includes use and storage of toxic chemicals, emissions and water.

   Policy 37 Utilities - Added Policy Language:

   COMPREHENSIVE FRAMEWORK PLAN UTILITIES POLICY NO. 37 APPLIES TO THE CULLY/PARKROSE COMMUNITY, AS WELL AS THE FOLLOWING:

   All land uses in the community must utilize a public water system as a source for drinking water.

   Development must coincide with the full provision of utilities, including sewerage, water and streets.

   Development on lots greater than 10,000 square feet or lots which were part of a lot over 10,000 square feet at the adoption of the Plan must be connected to a sanitary sewerage system. This construction requirement may be temporarily waived by the County Director of Environmental Services if the following conditions are met:

   A. The County Engineer certifies that a larger sewerage project will be undertaken in the area within five years and economies of scale can be achieved by doing it at a later time; and

B. A temporary disposal system is approved by the County Sanitarian; and

C. Financial security is provided in the amount of the cost of the sewerage project. (The amount of the financial security will be credited to the assessment against the property at such time as the project is constructed).

2. Columbia Community Plan - Policy 13, Air & Water Quality

Findings

A. Water quality in the Columbia Slough is enriched with nutrients, the major source of which is the subsurface disposal of 10-12 million gallons/day of household sanitary waste through cesspools and septic tanks.

B. Water quality in the Upper Columbia Slough appears to be in violation of the following DEQ water quality standards for Willamette Basin streams.

- Aesthetic conditions offensive to the human sense of sight, smell, taste or touch.

- No more than 10% cumulative increase in natural stream turbidities.

C. High nitrate levels occur in the Parkrose Water District wells located a short distance south of the Columbia Slough, but these levels are still lower than 10 parts per million which is the maximum allowable for domestic water supplies. The high nitrate levels may be confined to the upper groundwater aquifers and not significantly affect the deep groundwater aquifers being developed by the City of Portland as an alternative source of domestic water.

Strategies

Community Recommendation

1. In regard to water quality:

A. The Columbia Community recommends that the County proceed to sewer the upper area of the Columbia Slough drainage basin to insure the long term water quality of the ground water.

B. Developments with large paved areas shall be encouraged to utilize settling ponds or other similar methods to maintain the water quality in the Columbia Slough.

3. The Oregon Department of Environmental Quality should fully determine the water quality of the Columbia Slough and the groundwater quality in the Columbia Slough watershed. If a significant degradation of water quality due to subsurface sewage waste is found, an appropriate solution should be enacted to protect water quality and public health. The solution should consider the degree and trend of pollution, an adequate level of treatment, and the economic costs involved.

4. The Section 208 Water Quality Planning Process should be supported as a means to deal with the pollution problems related to urban stormwater runoff.

Policy 37 - Utilities

Findings

Sewer

1. There are three sewer treatment plants: The County Inverness Plant, The Gresham Plant and The Troutdale Plant that can provide service to the Columbia Community. Because of the flat topography, all sewer service involves some pumping to the treatment plant.

2. The soil conditions in most of the community will not allow sub-surface sewage disposal.

3. The cities in East Multnomah County and the County have formed a Sanitary Sewer Consortium to determine the best method of providing service to Central Multnomah County.

4. To provide service to the entire area, all three plants must ultimately be expanded.

5. The consideration of sewer service delivery is intended to be aided by joint urban planning area management agreements. These agreements will be prepared as an element of the ongoing planning process.

Strategies

Community Recommendations

1. The agencies that provide public sewer and water should be requested to participate in the Multnomah County Capital Improvements Program to insure co-ordinated development. In addition to these policy sections the Columbia Plan contains a large section on future service requirements for full development. That section is reproduced as Appendix I.

Considerations for community facilities and improvements.

"Provide for sanitary and storm sewers, supplemented with innovations in natural drainage..."

Powellhurst Community Plan

Policy 13 - Air and Water Quality

Findings

The Johnson Creek watershed occupies most of the Powellhurst Community. In 1975 the Department of Environmental Quality did a study of water quality in Johnson Creek, Water Quality in Johnson Creek, 1970-1975. This study showed a high concentration of phosphorus, nitrate-nitrogen and bacteria which resulted from septic tank effluent, urban runoff and agricultural runoff. At SE 45th Avenue pollution was excessively high. The study states, "Bacterial concentrations in Johnson Creek usually exceed the limits imposed by the Oregon Water Quality Standards", and the report recommends installation of sanitary sewers throughout the Johnson Creek Drainage basin by 1985. DEQ has tested the groundwater quality of the Johnson Creek watershed from public wells of the Gilbert Water District. The water from these wells is tested yearly by DEQ, as is all other public well-water according to State health laws. In recent years there has been a trend of rising nitrate levels that are above natural background levels.

Strategies

Community Recommendations:

1. The Oregon Department of Environmental Quality should fully determine the water quality of Johnson Creek and the groundwater quality in the Johnson Creek watershed. If a significant degradation of water quality due to subsurface sewage waste is found, an appropriate solution should be enacted to protect water quality and public health. The solution should consider the degree and trend of pollution, an adequate level of treatment, and the economic costs involved.

2. The Section 208 water quality planning process should be supported as a means to deal with the pollution problems related to urban stormwater runoff.

Policy 32 - Capital Improvements

Capital Improvements List

Natural drainage and recharge areas, to protect groundwater resources and to complement sanitary and storm sewer systems.

Hazelwood Community Plan, Policy 13 - Air & Water Quality

Findings

1. There are no waterways in Hazelwood, however, the development of the community has contributed to the:

   A. Pollution of the groundwater system due to reliance on cesspools for disposal of domestic waste water.

Strategies

Community Recommendations:

1. The Section 208 water quality planning process should be supported as a means to deal with the pollution problems related to urban stormwater runoff.

Policy 37 - Utilities

SEWAGE DISPOSAL

1. Public sanitary sewer facilities are virtually non-existent in the Hazelwood area. The porous gravel soils have a high capacity to absorb sewage; however, disposal of raw sewage into the ground could hinder programs to recharge drainage water and develop new water sources. Increased levels of pollution have been found in the ground water of both the Johnson Creek and the Columbia Slough basins.

2. Recent studies by the County, CRAG, and DEQ confirm the recommendation of the 1965 Master Sanitary Sewer Plan that Mid-Multnomah County (the Hazelwood area in particular) should be sewered as soon as practical.

Strategies

Community Recommendations

1. The community recommends the use of natural drainage solutions where practical. For example, the use of on-site recharge areas, porous pavement, and special curb designs can reduce the amount of runoff from parking areas into the streets and, in the future, into an underground urban scale drainage system.

Policy 32 - Capital Improvements

Capital Improvements List

A. Sanitary sewer to serve the community.

Within the Hazelwood Plan it has also been noted under Policy 6 (Urban Land Area) that it is the community intent to require sewers through the following language:

The above material contains most of the pertinent plan policies that attempt to answer the problems of groundwater pollution. (Together the Framework Plan and the Community Plans make up the Multnomah County Comprehensive Plan). The County Plans trys to balance the need for urban growth within the Urban Growth Boundary while recognizing the need to control the groundwater pollution problems resulting from large subsurface waste disposal. As the groundwater situation becomes clearer, revisions to the plans through the normal updating process may be necessary.

Policy 37 - Utilities

Sewage Disposal

1. The existing Johnson Creek Interceptor is designed to serve the watershed at the population and density anticipated in the Framework Plan. The Johnson Creek Interceptor feeds into the City of Portland treatment and collection system.

2. The porous gravel soils have a high capacity to absorb sewage; however, disposal of sewage into the ground and the tendency of Johnson Creek to flood could hinder programs to recharge drainage water and develop new water sources.

3. Recent studies of the County, CRAG, and DEQ confirm the recommendation of the 1965 Master Sanitary Sewer Plan that Mid-Multnomah County (the Powellhurst area in particular) should be sewered as soon as practical.

Strategies

1. Community Recommendations:

   A. The community recommends the use of natural drainage solutions where practical. For example, the use of low areas such as wetlands for retaining storm runoff and releasing it gradually, can help purify water and recharge the groundwater.

      Within the Powellhurst Plan it has also been noted under Policy 6 (Urban Land Area) that it is the community intent to require sewers by the following language:

      -Considerations for Community Facilities and Improvements

         Provide for urban scale, separated, underground sewer and drainage systems, complemented with innovations in natural drainage such as the design of gutters, porous materials, and the mixture of open space uses with water recharge areas.

Wilkes Community Plan

The Wilkes Community Plan was prepared in 1976 and pre-dates even the Framework Plan. It is a very short document and will be up for revision and update in _____. A finding in this plan states, "The area is served by sewer and there is adequate capacity to serve the area to full development." The Wilkes community is being currently developed on sewer from Inverness and is therefore not a problem with reference to groundwater pollution.

BEFORE THE BOARD OF COUNTY COMMISSIONERS

FOR MULTNOMAH COUNTY, OREGON

ORDINANCE NO. _____

An ordinance Amending Multnomah County Code Chapter 11.10 by adopting the East County Groundwater Plan as an element of the Comprehensive Plan.

MULTNOMAH COUNTY ORDAINS AS FOLLOWS:

SECTION I FINDINGS

A. General.

1. The East County Groundwater Plan, (hereinafter "Groundwater Plan"), is a specific management plan for the elimination of cesspools in East Multnomah County, specifically in the Inverness Service area.

2. The majority of residents in the Inverness Service area dispose of sanitary wastes via cesspools. Continued use of cesspools poses significant problems:

   a. Cesspools are not a permanent method of sanitary waste disposal in an urban area because there are a limited number of sites for cesspools on an urban residential lot and each site has a finite service life.

   b. Continued use of cesspools threatens to contaminate domestic water quality and to violate LCDC Goal 6, and the applicable federal standards and community plan policies set out below.

   c. Once the groundwater is contaminated, elimination of cesspools will not affect an improvement in water quality for many years.

3. The alternatives considered by the Board of County Commissioners as solutions to the problem of groundwater pollution are:

   a. The Groundwater Plan which calls for 90% of all development in the area to be sewered by 1990, but permits new development on cesspools as a temporary measure.

   b. A ban on all new development not connected to sewer service ("building moratorium").

c. To provide sewers as cesspool systems fail.

d. To require individual pre-treatment for new development.

e. To delay action until there is a declared health hazard.

4. The State Environmental Quality Commission has requested that the County prepare a specific management plan for the elimination of cesspools in East Multnomah County.

5. A Board of County Commissioners Resolution of June 15, 1978, determined it necessary for the County to work with Department of Environmental Quality towards completion of a management plan for the disposal of subsurface sewage that satisfies their mutual concerns.

6. Land Conservation Development Commission (L.C.D.C.) Goal #2 requires coordination with affected Governmental Units. The County has coordinated with the Metropolitan Service District, City of Portland and other affected agencies, in developing the Groundwater Plan.

7. Planning Commission Resolution PC 10-79 recommends that the Board of County Commissioners adopt the East County Groundwater Plan as County Policy and submit the plan to the Environmental Quality Commission.

8. The Board concurs with the Planning Commission and finds that the Groundwater Plan conforms to the applicable L.C.D.C. goals and County Comprehensive Plan policies as described below.

B. Water Quality.

1. a. L.C.D.C. Goal 6, Air, Water and Land Quality, states the following:

"Goal: To maintain and improve the air, land and water resources of the State.

"All waste and process discharges from future development, when combined with such discharges from existing development, shall not threaten to violate, or violate, applicable state or federal environmental quality statutes, rules and standards...."

b. Policy 13, Air and Water Quality, of the County Comprehensive Framework Plan, states that the County Policy is to maintain and enhance water quality in accordance with applicable standards.

c. Policy 13, Strategy 1A, of the Cully/Parkrose and Columbia Community Plans states that the County should oppose the degradation of water quality in the domestic water acquifer by developing sanitary sewer for the drainage system of the acquifer.

d. Policy 13, Finding 1A, of the Hazelwood Community Plan states that development in the community has contributed to pollution of the groundwater system from use of cesspools.

2. The East County groundwater system is a valuable resource serving the Parkrose, Hazelwood and Richland Water Districts and other domestic water supply systems. The City of Portland is currently developing a $15-$20 million well and pipeline system to use the groundwater as a supplement and emergency alternative to Bull Run.

3. The Federal Standard, as established by E.P.A., for nitrates in drinking water, is 10 parts per million. The D.E.Q., with assistance of other agencies, has tested the nitrate level of several East County domestic water supply wells. The nitrate levels in shallower wells were found to be rising, and the levels in some wells used by Parkrose and Richland Water Districts have nitrate readings of 7-9 parts per million.

4. As the D.E.Q. states, sanitary waste disposed through cesspools from existing development is the cause of the high nitrate readings in the groundwater.

5. The majority of development that has occurred since the Inverness Treatment Plant and lines were constructed has been connected to sewer. The majority of large vacant parcels in the Inverness area have sewer service available. The County requires connection to sewer as a condition to development in areas where sewer service is available. It is the existing unsewered development that is and will continue to be the major source of groundwater pollution.

6. Approximately 200 residential units are built in the Inverness area each year which are not connected to sewer. This annual rate of 200 unsewered units per year would account for less than 1% of the total amount of existing unsewered units, i.e., the amount of new development that will go in on cesspools would contribute only negligibly to the groundwater contamination problem.

7. The population of the unsewered portion of the Inverness Service area (S. of Halsey St.) is expected to increase by 2500-3500 people between 1980 and 1990. This increase represents less than 8% of the existing population using cesspools.

8. Construction of the Inverness 8 Interceptor, as proposed by the Groundwater Plan, would connect several major existing services of groundwater pollution to sewer, such that approximately one million gallons a day of sewage that presently contributes to the groundwater problem would then be connected to sewer. The reduction in pollution which would result from connecting these major sources of pollution to sewer would compensate for 10-20 years of new development on cesspools at the rate of 200 units per year.

C. Public Facilities.

1. a. L.C.D.C. Goal #11, Public Facilities, and County Framework Plan Policy #32, Capital Improvements, advocate the planning and development of a timely, orderly and efficient arrangement of public facilities to serve as a framework for urban development.

   b. Policy #13 of the Cully/Parkrose and Columbia Community Plans, and Policies #6 and #32 of the Hazelwood Community Plan advocate the provision of sewers.

2. The area which will be provided for by the sewage facilities proposed in the Groundwater Plan is within the Urban Growth Boundary as designated by the metropolitan regional planning body.

3. The sewer facilities contemplated by the Groundwater Plan are necessary and suitable for the level of development envisioned by the County Comprehensive and Community plans and meet the requirement of Goal 11 by providing a framework for urban development.

4. The Groundwater Plan provides for the construction of necessary sewage facilities in accordance with the County Master Plan for sewage facilities and the Regional Sewer Plan and thereby satisfies Goal 2 by its provision for regional coordination.

D. Housing.

1. L.C.D.C. Goal #10, Housing, and County Framework Plan Policy #21, Housing Choice, advocate provision of an adequate number of housing units at price ranges and rent levels commensurate with the financial capabilities of Oregon and the Region's households, and allowance for flexibility in housing location, type and density. The goal also requires plans to provide for the appropriate type, location and phasing of public facilities sufficient to support housing development.

2. The County Housing Goal enacted in the Framework Plan, The Community Plans, The Housing Opportunity Plan for Assisted Housing, and Report on Housing Demand and Supply in Urban East Unincorporated Multnomah County, requires significant additional development in the Inverness Service Area, including high density development in the unsewered area south of Halsey Street. The Department of Environmental Quality will not approve such development without the County's commitment that the area will be sewered in the near future.

3. The East County Groundwater Plan provides for the development of sewer service necessary to support the County housing goal. It permits some development on temporary cesspools in advance of sewer construction as a means of supporting the housing goal.

4. Because, as indicated in findings B5-7 above, new unsewered development will have only a negligibly deleterious impact on groundwater pollution, a building moratorium is a drastic solution to the groundwater pollution problem which is not called for under present circumstances and which would have a significantly negative effect on County's efforts to comply with L.C.D.C. Goal #10.

E. Citizen Involvement.

1. L.C.D.C. Goal #1, Citizen Involvement, and County Framework Plan Policy #3, Citizen Involvement, advocate a program that ensures opportunity for citizens to be involved in all phases of the planning process.

2. The Comprehensive Framework Plan and Community Plans, which provide the basis for the Groundwater Plan, were developed with extensive citizen involvement.

3. The Planning Commission conducted a public hearing, with extensive additional notice on Resolution P.C. 10-79.

4. The Board of County Commissioners has held two public hearings and one informal meeting on PC 10-79, and has held two public hearings on this ordinance.

5. There will be opportunities for citizen involvement in the development of the ordinances, financing measures, etc., that arise from the Groundwater Plan.

F. Evaluation of Alternatives.

1. Providing lateral sewers as cesspool systems fail is not a viable solution to the groundwater pollution problem because it is not ecomically feasible. Information presented by the County Engineer indicates that the costs are prohibitive.

2. Requiring individual pretreatment for new development is not a viable solution because as indicated by the County Engineer, there is presently no economically feasible method for filtering nitrates either at the point of waste discharge or from the groundwater after discharge.

3. Delaying action until a health hazard is declared is an unacceptable solution for many reasons:

   1) It is not in the best interests of the citizens of Multnomah County;

   2) It is in conflict with the applicable L.C.D.C. Goal, federal requirements and community plan policies set out above; and

   3) Once the groundwater is contaminated, elimination of cesspools will not affect an improvement in water quality for many years.

   4) The decision to act requires advance planning because the County will require a minimum of 10 years to design and construct the necessary treatment plant capacity, interceptor, trunk lines and lateral sewer.

4. Ban on all new development not connected to sewer service is an unacceptable solution because it is in conflict with the County's effort to comply with L.C.D.C. Goal #10 and with the County's housing goal and development plans set out in findings D-1 and 2, and because new unsewered development will have only a negligible impact on groundwater quality. (Findings B5-8).

5. On the basis of the findings made above, the Groundwater Plan, which calls for 90% of the development in the area to be sewered by 1990 but permits new development in cesspools as a temporary measure, is the preferable solution:

   1. Provision of sewer facilities to existing development would provide service to the major sources of the pollution problem and result in significant reduction of groundwater pollution. (Finding B-8).

   2. Permitting new construction to be serviced by cesspools as a temporary measure would have only a negligible impact on groundwater quality. (Finding B- 5 and 6).

   3. The Groundwater Plan best serves the requirements of L.C.D.C. Goal #6 by maintaining and improving water quality preserving the objectives of L.C.D.C. Goal #10 and the County's housing and development needs.

4. The Groundwater Plan is consistent with the objectives of L.C.D.C. Goal #2 and #11 and the County's Comprehensive and Community Plans provisions.

SECTION II CODIFICATION

Section III of this Ordinance is hereby added to and made a part of Multnomah County Code Chapter 11.10.

SECTION III

The East County Groundwater Plan is adopted.

SECTION IV

The Director of the Department of Environmental Services shall forward the Groundwater Plan to the Environmental Quality Commission.

ADOPTION

This Ordinance being necessary for the health, safety and general welfare of the people of Multnomah County, shall take effect on _____.

ADOPTED this ____ day of _____ 1979, being the date of its _____ reading before the Board of County Commissioners of Multnomah County, Oregon.

BOARD OF COUNTY COMMISSIONERS
FOR MULTNOMAH COUNTY, OREGON

By _____
Presiding Officer

APPROVED AS TO FORM

JOHN B. LEAHY
County Counsel for
Multnomah County, Oregon

By Denise Francis
Denise Francis
Deputy County Counsel

ATTACHMENT 4

BEFORE THE BOARD OF COUNTY COMMISSIONERS

FOR MULTNOMAH COUNTY, OREGON

ORDINANCE NO. 216

An ordinance Amending Multnomah County Code Chapter 11.10 by adopting the East County Groundwater Plan as an element of the Comprehensive Plan.

MULTNOMAH COUNTY ORDAINS AS FOLLOWS:

SECTION I FINDINGS

A. General.

1. The East County Groundwater Plan, (hereinafter "Groundwater Plan"), is a specific management plan for the elimination of cesspools in East Multnomah County, specifically in the Inverness Service area.

2. The majority of residents in the Inverness Service area dispose of sanitary wastes via cesspools. Continued use of cesspools poses significant problems:

a. Cesspools are not a permanent method of sanitary waste disposal in an urban area because there are a limited number of sites for cesspools on an urban residential lot and each site has a finite service life.

b. Continued use of cesspools threatens to contaminate domestic water quality and to violate LCDC Goal 6, and the applicable federal standards and community plan policies set out below.

c. Once the groundwater is contaminated, elimination of cesspools will not affect an improvement in water quality for many years.

3. The alternatives considered by the Board of County Commissioners as solutions to the problem of groundwater pollution are:

a. The Groundwater Plan which calls for 90% of all development in the area to be sewered by 1990, but permits new development on cesspools as a temporary measure.

b. A ban on all new development not connected to sewer service ("building moratorium").

c. To provide sewers as cesspool systems fail.

d. To require individual pre-treatment for new development.

e. To delay action until there is a declared health hazard.

4. The State Environmental Quality Commission has requested that the County prepare a specific management plan for the elimination of cesspools in East Multnomah County.

5. A Board of County Commissioners Resolution of June 15, 1978, determined it necessary for the County to work with Department of Environmental Quality towards completion of a management plan for the disposal of subsurface sewage that satisfies their mutual concerns.

6. Land Conservation Development Commission (L.C.D.C.) Goal #2 requires coordination with affected Governmental Units. The County has coordinated with the Metropolitan Service District, City of Portland and other affected agencies, in developing the Groundwater Plan.

7. Planning Commission Resolution PC 10-79 recommends that the Board of County Commissioners adopt the East County Groundwater Plan as County Policy and submit the plan to the Environmental Quality Commission.

8. The Board concurs with the Planning Commission and finds that the Groundwater Plan conforms to the applicable L.C.D.C. goals and County Comprehensive Plan policies as described below.

B. Water Quality.

1. a. L.C.D.C. Goal 6, Air, Water and Land Quality, states the following:

"Goal: To maintain and improve the air, land and water resources of the State.

"All waste and process discharges from future development, when combined with such discharges from existing development, shall not threaten to violate, or violate, applicable state or federal environmental quality statutes, rules and standards...."

b. Policy 13, Air and Water Quality, of the County Comprehensive Framework Plan, states that the County Policy is to maintain and enhance water quality in accordance with applicable standards.

c. Policy 13, Strategy 1A, of the Cully/Parkrose and Columbia Community Plans states that the County should oppose the degradation of water quality in the domestic water acquifer by developing sanitary sewer for the drainage system of the acquifer.

d. Policy 13, Finding 1A, of the Hazelwood Community Plan states that development in the community has contributed to pollution of the groundwater system from use of cesspools.

2. The East County groundwater system is a valuable resource serving the Parkrose, Hazelwood and Richland Water Districts and other domestic water supply systems. The City of Portland is currently developing a $15-$20 million well and pipeline system to use the groundwater as a supplement and emergency alternative to Bull Run.

3. The Federal Standard, as established by E.P.A., for nitrates in drinking water, is 10 parts per million. The D.E.Q., with assistance of other agencies, has tested the nitrate level of several East County domestic water supply wells. The nitrate levels in shallower wells were found to be rising, and the levels in some wells used by Parkrose and Richland Water Districts have nitrate readings of 7-9 parts per million.

4. As the D.E.Q. states, sanitary waste disposed through cesspools from existing development is the cause of the high nitrate readings in the groundwater.

5. The majority of development that has occurred since the Inverness Treatment Plant and lines were constructed has been connected to sewer. The majority of large vacant parcels in the Inverness area have sewer service available. The County requires connection to sewer as a condition to development in areas where sewer service is available. It is the existing unsewered development that is and will continue to be the major source of groundwater pollution.

6. Approximately 200 residential units are built in the Inverness area each year which are not connected to sewer. This annual rate of 200 unsewered units per year would account for less than 1% of the total amount of existing unsewered units, i.e., the amount of new development that will go in on cesspools would contribute only negligibly to the groundwater contamination problem.

7. The population of the unsewered portion of the Inverness Service area (S. of Halsey St.) is expected to increase by 2500-3500 people between 1980 and 1990. This increase represents less than 8% of the existing population using cesspools.

8. Construction of the Inverness 8 Interceptor, as proposed by the Groundwater Plan, would connect several major existing services of groundwater pollution to sewer, such that approximately one million gallons a day of sewage that presently contributes to the groundwater problem would then be connected to sewer. The reduction in pollution which would result from connecting these major sources of pollution to sewer would compensate for 10-20 years of new development on cesspools at the rate of 200 units per year.

C. Public Facilities.

1. a. L.C.D.C. Goal #11, Public Facilities, and County Framework Plan Policy #32, Capital Improvements, advocate the planning and development of a timely, orderly and efficient arrangement of public facilities to serve as a framework for urban development.

   b. Policy #13 of the Cully/Parkrose and Columbia Community Plans, and Policies #6 and #32 of the Hazelwood Community Plan advocate the provision of sewers.

2. The area which will be provided for by the sewage facilities proposed in the Groundwater Plan is within the Urban Growth Boundary as designated by the metropolitan regional planning body.

3. The sewer facilities contemplated by the Groundwater Plan are necessary and suitable for the level of development envisioned by the County Comprehensive and Community plans and meet the requirement of Goal 11 by providing a framework for urban development.

4. The Groundwater Plan provides for the construction of necessary sewage facilities in accordance with the County Master Plan for sewage facilities and the Regional Sewer Plan and thereby satisfies Goal 2 by its provision for regional coordination.

D. Housing.

1. L.C.D.C. Goal #10, Housing, and County Framework Plan Policy #21, Housing Choice, advocate provision of an adequate number of housing units at price ranges and rent levels commensurate with the financial capabilities of Oregon and the Region's households, and allowance for flexibility in housing location, type and density. The goal also requires plans to provide for the appropriate type, location and phasing of public facilities sufficient to support housing development.

2. The County Housing Goal enacted in the Framework Plan, The Community Plans, The Housing Opportunity Plan for Assisted Housing, and Report on Housing Demand and Supply in Urban East Unincorporated Multnomah County, requires significant additional development in the Inverness Service Area, including high density development in the unsewered area south of Halsey Street. The Department of Environmental Quality will not approve such development without the County's commitment that the area will be sewered in the near future.

3. The East County Groundwater Plan provides for the development of sewer service necessary to support the County housing goal. It permits some development on temporary cesspools in advance of sewer construction as a means of supporting the housing goal.

4. Because, as indicated in findings B5-7 above, new unsewered development will have only a negligibly deleterious impact on groundwater pollution, a building moratorium is a drastic solution to the groundwater pollution problem which is not called for under present circumstances and which would have a significantly negative effect on County's efforts to comply with L.C.D.C. Goal #10.

E. Citizen Involvement.

1. L.C.D.C. Goal #1, Citizen Involvement, and County Framework Plan Policy #3, Citizen Involvement, advocate a program that ensures opportunity for citizens to be involved in all phases of the planning process.

2. The Comprehensive Framework Plan and Community Plans, which provide the basis for the Groundwater Plan, were developed with extensive citizen involvement.

3. The Planning Commission conducted a public hearing, with extensive additional notice on Resolution P.C. 10-79.

4. The Board of County Commissioners has held two public hearings and one informal meeting on PC 10-79, and has held two public hearings on this ordinance.

5. There will be opportunities for citizen involvement in the development of the ordinances, financing measures, etc., that arise from the Groundwater Plan.

F. Evaluation of Alternatives.

1. Providing lateral sewers as cesspool systems fail is not a viable solution to the groundwater pollution problem because it is not ecomically feasible. Information presented by the County Engineer indicates that the costs are prohibitive.

2. Requiring individual pretreatment for new development is not a viable solution because as indicated by the County Engineer, there is presently no economically feasible method for filtering nitrates either at the point of waste discharge or from the groundwater after discharge.

3. Delaying action until a health hazard is declared is an unacceptable solution for many reasons:

   1) It is not in the best interests of the citizens of Multnomah County;

   2) It is in conflict with the applicable L.C.D.C. Goal, federal requirements and community plan policies set out above; and

   3) Once the groundwater is contaminated, elimination of cesspools will not affect an improvement in water quality for many years.

   4) The decision to act requires advance planning because the County will require a minimum of 10 years to design and construct the necessary treatment plant capacity, interceptor, trunk lines and lateral sewer.

4. Ban on all new development not connected to sewer service is an unacceptable solution because it is in conflict with the County's effort to comply with L.C.D.C. Goal #10 and with the County's housing goal and development plans set out in Findings D-1 and 2, and because new unsewered development will have only a negligible impact on groundwater quality. (Findings B5-8).

5. On the basis of the findings made above, the Groundwater Plan which calls for 90% of the development in the area to be sewered by 1990 but permits new development in cesspools as a temporary measure, is the preferable solution:

   1. Provision of sewer facilities to existing development would provide service to the major sources of the pollution problem and result in significant reduction of groundwater pollution. (Finding B-8).

   2. Permitting new construction to be serviced by cesspools as a temporary measure would have only a negligible impact on groundwater quality. (Finding B-5 and 6).

   3. The Groundwater Plan best serves the requirements of L.C.D.C. Goal #6 by maintaining and improving water quality preserving the objectives of L.C.D.C. Goal #10 and the County's housing and development needs.

4. The Groundwater Plan is consistent with the objectives of L.C.D.C. Goal #2 and #11 and the County's Comprehensive and Community Plans provisions.

SECTION II CODIFICATION

Section III of this Ordinance is hereby added to and made a part of Multnomah County Code Chapter 11.10.

SECTION III

The East County Groundwater Plan is adopted.

SECTION IV

The Director of the Department of Environmental Services shall forward the Groundwater Plan to the Environmental Quality Commission.

ADOPTION

This Ordinance being necessary for the health, safety and general welfare of the people of Multnomah County, shall take effect on January 19, 1980.

ADOPTED this 20th day of December 1979, being the date of its second reading before the Board of County Commissioners of Multnomah County, Oregon.

Authenticated by the County Executive on the 20th day of December, 1979

DONALD E. CLARK, County Executive

BOARD OF COUNTY COMMISSIONERS FOR MULTNOMAH COUNTY, OREGON

By _____ Presiding Officer

APPROVED AS TO FORM

JOHN B. LEAHY
County Counsel for
Multnomah County, Oregon

By _____
Paul G. Mackey
Deputy County Counsel

ATTACHMENT 5

GROUNDWATER PLAN IMPACTS & STRATEGIES

IMPACTS

1. Policy & Schedule - Affirm need for sewer service
2. Requires $50-60 million in facilities
3. Seeks maximum federal funds
4. Does not commit County or citizens to any expenditure
5. Rejects moratorium

STRATEGIES

YEAR ONE

1. Hire consultant for financing plan
2. Design temporary plant expansion
3. Continue consortium/208 study for permanent plant expansion
4. Design Inverness 8 interceptor with federal & county funds
5. Adopt dry sewer ordinance
6. Submit high density report to DEQ

YEAR TWO

1. BCC & citizens adopt financing plan
2. Construct temporary plant expansion
3. Resolve permanent plant issue; local or regional?
4. Construct Inverness 8 lines
5. Construct lateral sewers by petition

YEARS THREE & FOUR

1. Implement financing plan
2. Design & construct additional plant capacity
3. Construct Inverness 8 lines
4. Construct laterals per finance plan

YEARS FIVE TO "N"

1. B.C.C. initiates lateral construction by resolution
2. Planning for additional treatment capacity

12/13/79

VICTOR ATIYEH
GOVERNOR

Environmental Quality Commission

Mailing Address: BOX 1760, PORTLAND, OR 97207
522 SOUTHWEST 5th AVENUE, PORTLAND, OR 97204 PHONE (503) 229-5696

MEMORANDUM

To: Environmental Quality Commission

From: Director

Subject: Agenda Item No. M, April 18, 1980, EQC Meeting

Proposed Amendments to the Administrative Rules for:

(1) Licensing Hazardous Waste Treatment Sites (OAR Chapter 340, Division 62); and
(2) Hazardous Waste Management (OAR Chapter 340, Division 63)

Background and Problem Statement

Due to a high potential for public health and environmental damage, hazardous wastes require special management procedures. These procedures generally entail controlling their pathway from the time of generation through transportation, storage, treatment and disposal. The benefits of this are two-fold:

(1) To provide for the adequate disposal of all hazardous wastes and not just those which happen to reach a proper treatment or disposal site; and,

(2) To foster consideration of alternative methods and schemes to reduce the amount of waste as well as its inherent hazard.

The Legislature recognized the need for this control and granted the Commission authority over hazardous waste disposal in 1971 and over generation and storage in 1977. This was implemented through rules adopted by the Commission in 1972, 1978, and 1979. The Public Utility Commissioner also adopted rules for managing hazardous waste transportation in 1979, which left a void only in the lack of authority to control hazardous wastes going to treatment facilities.

The 1979 Legislature recognized this deficiency in the State's hazardous waste management program by enacting Senate Bill 76, directing the Department to license hazardous waste treatment sites (excluding generators with on-site treatment of their own wastes). The rules herein proposed for adoption, OAR Chapter 340, Division 62, (see Attachment IV) are primarily those by which the Department would license treatment sites. The legal basis for this action may be found in ORS Chapter 459 and Senate Bill 76.

The comments in this memorandum generally pertain to the treatment site rules, OAR Chapter 340, Division 62. However, certain amendments are also proposed for OAR Chapter 340, Division 63 (adopted by the Commission in June, 1979) to clarify language and to reflect recent changes in federal hazardous waste legislation (Attachment V). The legal basis for this action is likewise found in ORS Chapter 459 and Senate Bill 76.

The statement of need for this rulemaking is attached. (Attachment I).

Alternatives and Evaluation

The alternatives to the problem of controlling hazardous waste treatment sites are whether or not to license and, if so, how restrictive to make the license. Three distinct alternatives can be identified:

(1) No license. In this case, treatment sites would simply be required to abide by the rules for hazardous waste management, such as using the manifest system, recordkeeping, and reporting to the Department.

The drawback is the lack of a direct way to assure compliance with the rules and, in effect, would continue treatment as the weak link in the State's hazardous waste management program.

(2) License similar to a hazardous waste disposal site. This would require a hazardous waste treatment site licensee to follow the same procedures and meet the same stringent requirements as he would to open a disposal site, including the five thousand dollar licensing fee, the report justifying the need for the site, and the geological survey.

Such requirements are believed to be excessively stringent as there would normally be neither on-site waste disposal nor storage of wastes for periods greater than six months.

(3) License similar to a hazardous waste collection site. This approach was selected by the Department as being the most reasonable because of the operative similarities between treatment and collection sites. Both sites collect hazardous wastes for shipment to a disposal site but the treatment site would, in addition, detoxify, desolublize, or reduce the volume of the waste. However, it is anticipated that most hazardous waste treatment sites would also collect hazardous wastes subject to the conditions of the license and concomitant plan approvals.

A public hearing was held on March 4, 1980, in Portland (Attachment II). Ten persons attended, of whom one testified. Written comments were received from one person not in attendance and are included in the Response to Public Comment (Attachment III).

Prior to the public hearing, the proposed amendments were reviewed by the Department staff and an ad hoc advisory committee consisting of industrial and environmental groups and the general public. Over 100 advance notices of rulemaking were mailed in October, 1979; subsequently about 50 interested persons received a first draft of these rules in November. A public information meeting was held to discuss the proposed rules on December 10, 1979, with 10 persons attending and an additional 11 submitting written comments. A Responsiveness Summary of these comments was made available to persons upon request.

The proposed Division 62 amendments basically describe the procedure which a person has to follow in applying for a hazardous waste treatment site license. In general, he must describe (with detailed drawings) the operation of the site, including the proposed unit operations; wastes to be accepted; storage facilities; monitoring and reporting program; public, employe and environmental protection; and liability insurance. Rules are also included to guide the Department in issuing or denying a new license, and for the renewal, modification, termination or expiration of an existing license.

There is also a procedure whereby the Department can authorize (by letter) a temporary collection site to respond to a short-term problem. This will be done in cases where it is not possible to get a permanent site established but the need for local waste collection clearly exists. The criteria proposed are that (1) the environmental benefits outweigh the perceived hazard; and (2) a local public agency is willing to accept joint responsibility with the site operator.

It is believed that a license will have a negligible economic impact on a treatment site that is well-run and complies with the hazardous waste management rules (Division 63).

The proposed Division 63 amendments are housekeeping changes; specifically reclassification of oxidizers as Reactive rather than Ignitible (so that they would not be handled with other Ignitibles); a proposal to handle waste PCBs in accordance with federal law; a similar proposal to redefine carcinogens; and the incorporation of treatment sites language into several existing rules.

Summation

(1) The nature of hazardous wastes requires that they be completely controlled from the time of generation through transportation, storage, treatment and disposal. The Department believes that these steps are all sufficiently controlled at this time except treatment.

(2) The 1979 Legislature recognized this deficiency in the State's hazardous waste management program with the enactment of S.B.76, which directed the Department to license hazardous waste treatment sites.

(3) The proposed changes to OAR Chapter 340, Division 62, outline procedures whereby this licensing may be accomplished. As there will be no disposal of wastes on-site, the rules generally parallel those for licensing a hazardous waste collection site rather than those for a disposal site.

(4) Division 62 also includes a straightforward proposal to put into rule form a statute exempting certain classes of hazardous waste collection sites from licensing.

(5) The proposed housekeeping changes to OAR Chapter 340, Division 63, are generally self-explanatory.

(6) The subject rules have been reviewed by an advisory committee consisting of Department staff, industrial and environmental groups, and the general public.

Director's Recommendation

Based upon the findings in the Summation, it is recommended that the Commission adopt the amendments to OAR Chapter 340, Divisions 62 and 63.

Michael Downs

William H. Young

Attachment I Statement of Need for Rulemaking
Attachment II Hearing Officer's Report
Attachment III Response to Public Comment
Attachment IV Proposed Amendments to Division 62
Attachment V Proposed Amendments to Division 63

R. Reiter:pl
229-6434
April 2, 1980

HP1156

ATTACHMENT I

Agenda Item M, April 18, 1980, EQC Meeting

STATEMENT OF NEED FOR RULEMAKING

Pursuant to ORS 183.335(7), this statement provides information on the Environmental Quality Commission's intended action to adopt a rule.

(1) Legal Authority.

The legal authority for these amendments is found in ORS 459.410-.690 and Senate Bill 76 (1979). Specific citations are:

(a) ORS 459.440(2) pertaining to the Commission's authority to establish minimum requirements for hazardous waste treatment and treatment sites.

(b) ORS 459.505(3) pertaining to the Commission's authority to exempt certain classes of hazardous waste collection sites from licensing requirements.

(c) ORS 459.505(6) directing that all hazardous waste treatment sites be licensed by July 1, 1980.

(2) Need For The Rules.

The need for these rules is fourfold:

(a) To provide administrative rules for implementing the Legislative mandate to license hazardous waste treatment sites by July 1, 1980.

(b) To facilitate waste clean-up of small quantities of hazardous waste by allowing the Department to authorize by letter (instead of license) the establishment of temporary collection sites to meet short-term clean-up efforts.

(c) To clarify language and to reflect recent changes in federal hazardous waste legislation.

(d) To have adopted adequate administrative rules so that the state of Oregon would be eligible to manage the federal Hazardous Waste Program being promulgated under the Resource Conservation and Recovery Act of 1976.

(3) Principal Documents Relied Upon in This Rulemaking.

No relevant documents were used in preparing these amendments.

HP1156.A

STATE OF OREGON

DEPARTMENT OF ENFIRONMENTAL QUALITY INTEROFFICE MEMO

To: Environmental Quality Commission

From: Richard Reiter, Hearings Officer

Subject: Proposed Rule Making Pursuant to Senate Bill 76
Report of Public Hearing--March 4, 1980

On March 4, 1980, a public hearing was held pursuant to a notice issued January 21, 1980. The hearing was held in Portland at 1 p.m. in Room 511 of the Department's offices at 522 Southwest Fifth.

Ten persons were present, representing eight businesses and/or associations. Following an explanation of the purpose of the meeting, only George Ward offered comments for the record. George requested that:

1. The rules be flexible enough to recognize all types of treatment, including biological treatment techniques.

2. The rules be flexible enough to accommodate basic research programs using or creating small quantities of hazardous waste.

There being no other verbal testimony, the record was left open until March 20, 1980, for receipt of written comments.

Richard P. Reiter

RPR:n
HN8029

ATTACHMENT III
Agenda Item M, April 18, 1980, EQC Meeting

RESPONSE TO PUBLIC COMMENT

The attached is a summary of comments received to date in response to the March 4, 1980, public hearing on proposed amendments to administrative rules for:

(1) Licensing Hazardous Waste Treatment Sites (OAR Chapter 340, Division 62); and,

(2) Hazardous Waste Management (OAR Chapter 340, Division 63).

Further comments may be found in the March 4, 1980, Responsiveness Summary submitted with the January 18, 1980, Request for Public Hearing.

Comment: Do the proposed rules affect the treatment of hazardous waste in research and development programs?

Department Response: The Department has attempted to provide a scheme for the management of small quantities of hazardous waste under Section 63-135 and management facilities treating/disposing of such waste need not obtain a management facility license (Section 63-405(1)(c)).

Exactly when a research and development facility becomes a pilot plant and when a pilot plant becomes a full scale operation is waste specific and very difficult to define except on a case-by-case basis. For this reason we do not wish to blanket exempt research and development but will consider it simply another hazardous waste management facility.

Moreover, we do not have the statutory authority to grant special exemptions for any class of operation.

Comment: Under DEQ regulation, a notice of proposed rulemaking must meet the minimum standards of the Administrative Procedure Act, ORS Chapter 183. That statutory provision requires, among other things, that any notice of proposed rulemaking must include (1) a statement of the need for a rule; (2) how the rule will meet the need; and (3) a listing of any studies or technical data used to develop the rule. ORS 183.335(7).

The notice of January 21, 1980, even supplemented with the responses to earlier comments, is, in several particulars, inadequate under the standards of Oregon's APA. While the notice provides generalized guidance as to the statutory basis and purpose of the rules as a whole, in too many crucial instances it gives no explanation of individually important sections of the proposed regulations. Regulations promulgated without adequate notice, of course, have no validity. ORS 183.335(10).

Department Response: Having reviewed the procedures followed to date, it is the Department's opinion that the intent of ORS 183.335(7) has been satisfied by the following activities and publications:

1. Advanced Notice of Proposed Rulemaking--October 17, 1979
2. Notice of Public Information Meeting--November 5, 1979
3. Reminder of Public Information Meeting--November 30, 1979
4. Public Information Meeting--December 10, 1979
5. Request to EQC for Authorization to hold Public Hearing-January 18, 1980
6. January 18, 1980 EQC Meeting
7. Notice of Public Hearing--January 21, 1980
8. Notices of Intended Actions in February 1, 1980, Secretary of State's Administrative Rules Bulletin
9. March 4, 1980, Public Hearing
10. Staff Report for April 18, 1980, EQC Meeting

Comment on 62-060(2): DEQ has explained in its Responsiveness Summary why it considers that temporary collection sites should be exempt from the licensing requirements. Responsiveness Summary at 3. We sympathize with the perceived need, but are concerned with the potential for abuse in this exemption. While the requirement for participation by a local public agency is a good one, we would suggest the following additional safeguards:

(1) In approving each request for an exemption, DEQ must review the site's proposed operation and issue the approval only upon written finding that: (a) the operation can meet all requirements of a licensee found in ORS 459.517 (as amended by SB 76) or (b) that any failure of the

operation to meet those requirements is determined by DEQ, in writing, to be outweighed by other benefits to the public health or the environment of granting the temporary site approval.

(2) At the end of sixty days after approval of an exemption, DEQ shall inspect the site to insure that it is no longer being used and shall instruct the operator to close the site in a manner calculated to protect the environment and human health. After the site is closed, DEQ shall perform a final inspection to satisfy itself that no residues or hazardous waste remain. The inspection shall include chemical analysis of ground and surface water at or near the site as appropriate.

(3) If, after sixty days, the site is still in operation, DEQ must either: (a) issue and publish an extension of the approval, with reasons therefor; or (b) undertake enforcement action pursuant to ORS 459.650-459.995 and implementing regulations.

Department Response: Comment (1) is implied in the rules, while comments (2) and (3) reflect normal Department policy. It is our intent to require all sites operating for more than 60 days to obtain a collection site license.

Comment on 62-060(3): DEQ's decision to grant grandfather exemptions to treatment sites previously permitted is flatly illegal. In addition, even were some legal justification found for the exemption, DEQ has failed to provide any rationale for its decision in the Notice of Rulemaking. For these reasons, the administrative grandfather clause should be stricken from the rules, or, at least, reproposed to the public for comment with adequate explanation of its legal basis and policy justification.

The legislature expressed in unequivocal terms its intent that all treatment sites be licensed. First, the hazardous waste statute declares that "no person shall treat a hazardous waste anywhere in the State without obtaining a hazardous waste treatment site license." ORS 459.505(1)(c). (The only exception provided is for generators who treat their own waste. ORS 459.505(2)). Second, ORS 459.505(6) requires, in direct conflict with DEQ's proposed rule, that hazardous waste treatment sites operating when the Act took effect must obtain a license by July 1, 1980. The intent of the legislature could not be more clear.

The fact that permits were previously issued pursuant to OAR 340-14-025 and 340-45-035(1) does not diminish the force of our argument. Whatever requirements applied to treatment sites prior to the enactment of SB 76, it is clear that the legislature considered them inadequate. What the law requires is a comprehensive and public licensing procedure. Any old sites that intend to keep operating must follow that new procedure or cease operations. DEQ's action assures that the public would rarely know where the old sites were and would be denied forever the chance to review their operations in light of the new standards.

Department Response: It is unfortunate that we have chosen language that gives this appearance. The intent of this rule was not to grandfather certain treatment sites but to combine the hazardous waste management requirements into a single permit with other Department requirements already established for the site. New wording has been proposed to more accurately reflect this intent.

Comment on 62-065: We note that missing from the list of elements in a collection or treatment site application are certain personnel training requirements imposed by statute. ORS 459.517(6) expressly requires as a condition to holding a license that the license applicant "assure that all personnel employed by the licensee are trained in proper procedures for handling, transfer, transport, treatment, and storage of hazardous waste." Therefore, we suggest that: (1) this statutory condition be included in OAR 340-62-065; and, (2) DEQ establish basic guidelines as to the comprehensiveness of this training.

Department Response: Agreed. The requirement for a training program has been added to 62-065(1)(c). However, it is presently felt that a licensee should design his own training program but that it be subject to Department approval. As knowledge is gained in the future, the Department may endeavor to develop guidelines as to the comprehensiveness of the training program.

Comment on 62-065(1)(f): If DEQ considers the need for geological information [we assume it covers hydrological information as well] a serious one--and it should--then there is no reason to limit the material provided in the application to that "currently available". In some cases, there will be sufficient data previously generated for some other purpose to meet DEQ's requirements. In other cases, that may not be the case. Since the application should demonstrate any geological or hydrological features that might accentuate rather than mitigate the effects of a spill or other contamination, it would be a grievous error to require presentation of information on such conditions only when it was, fortuitously, previously collected.

Department Response: Agreed. Proposed rule modified.

Comment on 62-065(1)(h): We are concerned about the scope of the requirement for liability insurance. By inserting the word "ordinary" into the regulatory provision, DEQ has created a potential ambiguity. We have reviewed the Responsiveness Summary on this point and find it unhelpful. The legislature intended that each operator of a collection or treatment site would insure its operation in sufficient amounts "to protect the environment and the health, safety, and welfare of the people of this state." ORS 459.517(5). The term liability insurance certainly

was used there in the generic sense--to insure against whatever damage, however caused. The only question for DEQ's consideration is how much insurance will be required. DEQ strongly implies in its Responsiveness Summary that damage from pollution and seepage need not be covered by the insurance, since "there will be no on-site waste disposal at a collection or treatment site." Responsiveness Summary at 6. In the very next sentence, however, DEQ goes on to claim that the liability insurance would cover sudden or accidental release. Could not an accidental release result in pollution or seepage? The scope of insurance coverage is left unclear.

We urge DEQ to clarify the matter by stating simply that liability insurance will be required to cover any damage to the environment, health, or safety caused by the operation, be it sudden or incremental, accidental or inherent in the operation. The only decision for DEQ is how much insurance will be required, site by site, not what mode or type of hazard it will cover.

Department Response: We would like to clarify the point made in our Responsiveness Summary with regard to the need for pollution and seepage liability insurance. This coverage, also known as environmental impairment insurance, is designed to extend coverage to those incidents that are excluded from ordinary liability insurance by virtue of not being "sudden or accidental"; i.e., they are gradual, unintended happenings. We can only visualize this coming from the leaching of toxic materials from previously landfilled waste or perhaps steady-state incinerator emissions. However, we agree to delete the word "ordinary" to cover other unforeseen circumstances.

The exact method of providing for environmental impairment insurance is presently being debated by Congress in its consideration of the [toxic materials] Superfund bill.

Comment on 62-065(1)(i): While we agree with DEQ's proposal to require some "economic analysis of the operation," 62-065(1)(i), we find that phrase much too vague to assist either treatment site operators or the public. Whatever DEQ means to include by that requirement, it should be spelled out more effectively. At a minimum, the regulations should require a submission sufficient to assess the financial health of the concern proposing to operate the site in order to insure that adequate resources will be available if a serious accident occurs or if DEQ finds it necessary to sue the operation for improper management activities. The need for such an analysis is particularly acute here, since DEQ has determined that it cannot legally impose a bonding requirement on treatment site operators. [A list of proposed submissions is appended].

Department Response: Agreed to the extent of requiring the need to insure economic liability and adequate resources.

The list of proposed submissions is reasonable and, to a certain extent, is covered in other sections of this rule such as (1)(b); however, it is preferred to determine the exact information required on a case-by-case basis.

Comment on 62-065(4): [We understand] that DEQ may wish to begin consideration of an application before it is complete. The regulations should be amended, however, to add the assurance that: "no collection or treatment site may be approved until the Department has evaluated a complete application."

Department Response: Agreed. Proposed rule modified.

Comment on 62-075: The Department has indicted its intent "to inspect both collection and treatment sites at least once every six months." (Responsiveness Summary, page 6.) Since that is the Department's intention, it would be beneficial to all concerned to include such a provision in the regulations. There is express statutory authority in that licensees are required to allow access to the site and its records (ORS 459.670).

We propose, therefore, that a new section be added to OAR 340-62-075 requiring unannounced inspections at least once every six months.

Department Response: The Department has stated its intention to inspect both collection and treatment sites at least once every six months. As the agency ultimately responsible for their environmentally sound operation, we intend to keep this commitment. However, as we have numerous other program demands, we wish to retain the flexibility to alter this schedule as our experience and the demands of a given site vary. Proposed rule not modified.

Comment on 62-075: DEQ has already been criticized for its failure to enunciate standards for its approval of treatment site applications. DEQ has responded, understandably, that since the Environmental Protection Agency is currently formulating siting criteria under the Resource Conservation and Recovery Act, it intends to wait for those rules and incorporate them, as appropriate, at a later time. Responsiveness Summary, page 5. We can appreciate the desire to piggyback EPA's regulations, but we are similarly concerned that an acceptable siting program in accordance with legislative intent, be quickly established. We consider DEQ's abdication of responsibility on this point to be contrary to law and would suggest that there are certain minimum criteria that could be implemented now to provide some guidance to applicants and the public and some check on DEQ discretion. [Legal references citing the need for standards as well as a list of suggested standards follows.]

Department Response: While it is acknowledged that the suggested standards are reasonable, and, indeed, the type of information that will be considered, we wish to defer putting it into rule form at this time. The Department does not have the resources nor feel it beneficial to engage in the necessary comprehensive review of these licensing standards when the results of several years of EPA work is impending. (It is noted, however, that we are now using EPA's proposed rules as guidelines and will probably substantially adopt them when they are promulgated.) Proposed rule not modified.

Comments on 62-075(1) and 63-405(1)(d): * We are concerned about the exemption . . . of sites established prior to July 1, 1980. Notice of intent to permit collection or treatment sites should be issued to allow for the public to bring any problems connected with the particular site to the attention of the Department. We do not believe exemption from the public notice requirement is in keeping with the intent of SB 76 or Oregon's Administrative Procedures Act.

* For the reasons set out [in Comments on 62-060(2)], we urge DEQ to withdraw its proposal to exempt previously permitted sites, through OAR 340-63-405(1)(d). Similarly, we consider the decision in OAR 340-62-075(1) to limit public participation to only those license applications for sites established after July 1, 1980, to be wholly illegal.

Department Response: Agreed. Proposed rule modified for consistency with other Department programs.

Comment on 63-115(1): DEQ has proposed to raise the pH level used in defining corrosive waste from 12 to 12.5. That means, in regulatory terms, that more material (how much is not announced) will be exempt from hazardous waste management rules. The new standard (12.5 pH) would, moreover, exempt material three times as alkaline as the current standard (12.0 pH). Once exempt, the material need not be handled with the care required for hazardous waste and may be disposed of without the strict controls imposed on hazardous waste. Since micro-organisms and some larger vertebrates are highly susceptible to damage from changes of pH in the water in which they live, such an exemption could, depending on the volume of material actually exempt and the location and means of disposing of it, have significant environmental impacts.

. . . We therefore urge DEQ to postpone alteration of the corrosive waste definition as proposed until it has provided the public with:

(1) Information on what wastes this change seeks to accommodate and any technical information related to the change;

(2) Data on the expected volume of waste this change will exempt from the hazardous waste controls in ORS Chapter 459 and where it can or should be disposed of;

(3) A statement on how this change relates to development now underway at the Environmental Protection Agency to define hazardous wastes for the purposes of the Resource Conservation and Recovery Act, 42 USC 6901 et seq.

(4) An extension of time for comment after dissemination of the information requested.

Department Response: Agreed. Proposal withdrawn. However, it is noted for the record that, under 62-100, the Department may permit the disposal of a specified hazardous waste in a specified solid waste disposal site.

PERSONS SUBMITTING COMMENTS

Merrie Buel (1)	Oregon Environmental Council 2637 Southwest Water Avenue Portland, OR 97201
George Ward (2)	George D. Ward & Associates 821 Northwest Flanders Portland, OR 97209
Terence L. Thatcher (1) Kevin Kirchner Daniel Hester	Oregon Wildlife Federation Pacific Northwest Resources Clinic University of Oregon School of Law Eugene, OR 97403

(1) Submitted written comments
(2) Comment from March 4, 1980, public hearing

HP1205

ATTACHMENT IV
Agenda Item M, April 18, 1980, EQC Meeting

PROPOSED AMENDMENTS TO DIVISION 62

(PART C: COLLECTION AND TREATMENT SITES)

62-060 LICENSE REQUIRED FOR A HAZARDOUS WASTE COLLECTION OR TREATMENT SITE.

(1) Except as provided in ORS 459.505[(3)], no person shall establish or operate a hazardous waste collection or treatment site without a license [therefor] issued by the Department pursuant to ORS 459.410-459.690 and these rules.

[(1)] (a) Licenses shall establish minimum requirements for [the storage of hazardous wastes, minimum requirements for] operation, maintenance, monitoring , [and] reporting, and supervision of a collection or treatment site[s], and shall be properly conditioned to ensure compliance with pertinent local, state and federal standards and other requirements and to adequately protect life, property and the environment.

[(2)] (b) Licenses shall be [issued] addressed to the applicant for the activities and operations of record, and shall be terminated automatically upon issuance of a new or modified license for the same operation.

(2) Pursuant to ORS 459.505(3), the Department may exempt certain collection sites operating for less than 60 days from having to obtain a collection site license. However, prior to establishment, such sites shall obtain written authorization from the Department and shall comply with such rules as may be indicated therein.

(a) The applicant must demonstrate that the storage, due to the type and quantity of waste, site operation, and other relevant factors, is not likely to endanger the public health and safety and the environment.

(b) A local public agency must accept joint responsibility for the site operation.

(3) Treatment facilities operating under a current Department permit may have the hazardous waste requirements either combined into the existing

permit or obtain a separate treatment site license.

(a) Persons required to apply for a treatment site license but holding a current Department permit shall notify the Department of their status as a hazardous waste treatment site.

(b) Such persons shall submit information required by these rules as the Department deems necessary to condition their permit to the requirements of a hazardous waste treatment site.

(c) An existing permit shall be modified according to the procedures of the Division (Air Quality, Water Quality, or Solid Waste) under which it was issued.

62-065 APPLICATION FOR A HAZARDOUS WASTE COLLECTION OR TREATMENT SITE LICENSE.

(1) An application for a new collection or treatment site license shall consist of a written report, signed by the applicant or his authorized representative, which shall contain or be accompanied by, but not limited to:

(a) The name and address of the applicant and person [or persons] to be directly responsible for the operation of the [collection] site[.] and the organization chart for all persons working at the site.

(b) The experience of the applicant in the handling of hazardous substances.

(c) The management program for the operation of the [collection] site, including the proposed methods of storage, treatment, and waste disposal, the site maintenance program, personnel training program, and the proposed emergency measures and safeguards to be provided for the protection of the public, the site employees, and the environment.

(d) A schedule and description of sources, types and quantities of material to be [stored] accepted and special procedures, if any, for their handling.

(e) A description and preliminary engineering sketch of the size and type of facilities to be constructed, including the height and type of fencing to be used; the size and construction of structures or buildings, warning signs, notices and alarms to be used; the type of drainage and waste handling facilities and maximum capacity of such facilities; the location and source of each water supply to be used and the location and the type of fire control facilities to be provided at such site.

(f) The exact location and place where the applicant proposes to operate and maintain the [collection] site including that geological, hydrological, and meteorological information necessary to determine site suitability.

(g) A proposed program for continuous surveillance of the [collection] site and for regular reporting to the Department.

(h) A proposal and supporting information justifying the amount[s] of liability insurance proposed to protect the environment and the health, safety and welfare of the people of this State, including the names and addresses of the applicant's current or proposed insurance carriers and a Certificate of Insurance of the [copies of insurance] policies then in effect.

(i) An economic analysis of the site operation sufficient to assure that it is economically viable and can provide adequate resources for sound operation.

(j) A statement indicating compliance with local land-use plans.

(2) An application to renew , [or] modify, terminate, or allow a collection or treatment site license to expire shall consist of a written report, signed by the applicant or his authorized representative, which shall contain or be accompanied by, such items of subsection (1) of this Section as shall be deemed pertinent by the Department.

(3) The Department may require the submission of such other information as it deems necessary to make

a decision on granting, modifying or denying the license.

(4) Applications which are incomplete, unsigned, or which do not contain the required information, may be excluded from consideration by the Department at its discretion. The applicant shall be notified in writing of the deficiencies. No license shall be issued until all relevant information has been submitted and reviewed.

62-070 PLANS REQUIRED FOR A HAZARDOUS WASTE COLLECTION OR TREATMENT SITE.

Before a collection or treatment site is established, constructed, [maintained] or [substantially] modified[,] to an extent that would result in a change in any item specified in Section 62-065(1), an applicant or licensee must submit to the Department final detailed plans and specifications covering construction and operation of the [collection] site and all related facilities; and receive written approval of such final plans from the Department.

62-075 HEARINGS AND ISSUANCE OR DENIAL OF A HAZARDOUS WASTE COLLECTION OR TREATMENT SITE LICENSE.

(1) Upon receipt of an application for a hazardous waste collection or treatment site, the Department shall provide an opportunity for the applicant or any interested agency, person, or group of persons to request or petition for a public hearing with respect to the application. If the Director determines that useful information may be produced thereby, or if there is a significant public interest in holding a hearing, a public hearing will be held. Instances of doubt shall be resolved in favor of holding the hearing. There shall be public notice of such a hearing.

[(1)] (2) [Upon receipt of an application] Within 90 days, the Department shall make such investigation as it considers necessary to determine whether or not a license should be issued. The determination of the Department, including proposed license provisions and conditions if the Department recommends issuance of a license, shall be forwarded to the applicant and, at the discretion of the Department, to other interested persons for comment. All comments must be submitted in writing within fourteen (14) days after mailing of the Department's determination, if such

comments are to receive consideration prior to final action on the application.

[(2)] (3) After fourteen (14) days have elapsed since the date of mailing of the Department's determination and after considering all comments received, the Department shall notify the applicant of this decision by certified mail at the address designated by him in his application.

[(3)] (4) If the Department refuses to issue a license, it shall state the reasons for such action and advise the applicant that he may request a hearing before the Commission or its authorized representative. Such a request for hearing shall be made in writing to the Director within 20 days of the date of the refusal and shall state the grounds for the request. Any hearing shall be conducted pursuant to the regulations of the Department.

62-080 RENEWAL, MODIFICATION, TERMINATION OR EXPIRATION OF A HAZARDOUS WASTE COLLECTION OR TREATMENT SITE LICENSE.

(1) An application for renewal, modification or termination of a license or to allow a license to expire shall be filed in a timely manner, but not less than sixty (60) days prior to the expiration date of the license. Rule [Section] 340- 62-075 pertaining to the issuance of a license shall apply to renewal, modification, termination or expiration of a license. A license shall remain in effect until final action has been taken by the Department on any appropriately submitted and complete application pending before the Department.

(2) In the event that the Department finds it necessary to modify a license due to changed conditions or standards, receipt of additional information or any reason it deems would threaten public health and safety, the Department shall notify the licensee or his authorized representative by certified mail. Such notification shall include the proposed modification and the reasons for modification. The modification shall become effective twenty (20) days from the date of mailing of such notice unless within that time the licensee requests a hearing before the Commission. Such a request for hearing shall be made in writing and shall

include the reasons for such hearing. At the conclusion of any such hearing the Commission may affirm, modify or reverse the proposed modification.

62-085 SUSPENSION OR REVOCATION OF A HAZARDOUS WASTE COLLECTION OR TREATMENT SITE LICENSE

(1) Whenever, in the judgment of the Department from the results of monitoring or surveillance of the operation of any collection or treatment site, there is reasonable cause to believe that a clear and immediate danger to the public health and safety exists from the continued operation of the site, without hearing or prior notice, the Department shall order the operation of the site halted by service of the order on the site superintendent. Notice of such suspension or revocation must state the reasons for such action and advise the licensee that he may request a hearing before the Commission or its authorized representative. Such a request for hearing shall be made in writing to the Director within 90 days of the date of suspension and shall state the grounds for the request. Any hearing shall be conducted pursuant to the regulations of the Department.

(2) In the event that it becomes necessary for the Department to suspend or revoke a collection or treatment site license due to violation of any provision of ORS 459.410-459.690, noncompliance with these rules or the terms of the license, the threat of degradation of a natural resource, unapproved changes in operation, false information submitted in the application or any other cause, the Department shall notify the licensee by certified mail of its intent to suspend or revoke the license and the timetable and procedures to be followed. Such notification shall include the reasons for the suspension or revocation. The suspension or revocation shall become effective 20 days from the date of mailing of such notice unless within that time the licensee requests a hearing before the Commission or its authorized representative. Such a request for hearing shall be made in writing to the Director and shall state the grounds for the request. Any hearing [held] shall be conducted pursuant to the regulations of the Department.

ATTACHMENT V
Agenda Item M, April 18, 1980, EQC Meeting

PROPOSED AMENDMENTS TO DIVISION 63

1. 63-011(15) "Hazardous waste treatment site" means a facility or operation, other than a hazardous waste disposal site, at which hazardous waste is treated in [compliance with these rules and other applicable local, State, and Federal regulations.] accordance with a license issued pursuant to ORS Chapter 459 and OAR Chapter 340, Divisions 62 and 63.

2. 63-110 IGNITABLE WASTE.

(1) A waste is ignitable if it has any of the following properties:

(a) Any liquid that has a flash point less than 60° C (140° F) as determined by the Pensky-Martens Closed Tester (ASTM D93-73) or an equivalent method.

(b) Any flammable compressed gas as defined by 49 CFR 173.00(b) (See Appendix).

[(c) Any oxidizer as defined by 49 CFR 173.151 or 173.151a.]

[(d)] (c) Any Class C explosive as defined by 49 CFR 173.100.

[(e)] (d) Any other waste, that under conditions incident to its management, is liable to cause fires through friction, absorption of moisture, spontaneous chemical change, or retained heat from manufacturing or processing; and when ignited burns so vigorously and persistently as to create a hazard during its management.

3. 63-120 REACTIVE WASTE

(1) A waste is reactive if it has [either] any of the following properties:

(a) Any waste that is normally unstable and readily undergoes violent chemical change such as reacting violently or forming potentially explosive mixtures with water; or generating toxic fumes when mixed with water under mildly acidic or basic conditions.

(b) Any waste that is capable of detonation or explosive reaction with or without a strong initiating source or heat before initiation. This includes explosives as defined by 49 CFR 173.51 (Forbidden), 173.53 (Class A), or 173.88 (Class B).

HP1254

(c) Any oxidizer as defined by 49 CFR 173.151 or 173.151a. NOTE: Unless determined otherwise, oxidizers shall be assumed to be incompatible with all other materials.

(2) Reactive waste shall be managed as hazardous or as otherwise approved by the Department.

(3) Waste explosives under the direct control of a local, State, or Federal agency are exempt from the rules of this Division.

4. 63-125(2) Halogenated Hydrocarbons and Phenols (excluding polymeric solids).

(a) Waste containing halogenated hydrocarbons (excluding polychlorinated biphenyls) or halogenated phenols is toxic if it contains 1 percent or greater of such substances.

[(i) Waste containing polychlorinated biphenyls is toxic if it contains 100 ppm or greater of such substances.]

[(1)](b) A generator may dispose of up to 200 pounds of waste containing halogenated hydrocarbons or halogenated phenols per month (excluding polychlorinated biphenyls and pesticides) in accordance with Section 63-135 of this Part.

[(ii) Polychlorinated biphenyls shall be managed as hazardous or as otherwise approved by the Department.]

[(A) Household items containing polychlorinated biphenyls may be disposed with other household refuse.]

(c) Waste containing polychlorinated biphenyls is toxic and shall be managed in accordance with 40 CFR 761.

5. 63-125(4) Carcinogens.

(a) Waste containing carcinogens as identified by OSHA in 29 CFR [1910.93c] 1910 is toxic. NOTE: See appendix for specific compounds and concentrations.

(b) The identified carcinogenic wastes shall be managed as hazardous or as otherwise approved by the Department.

6. Add Section 340-63-405(1)(d) as follows:

(d) Treatment facilities operating under a current Department permit may have the hazardous waste requirements either combined into their existing permit or obtain a separate treatment site license.

(A) Persons required to apply for a treatment site license but holding a current Department permit shall notify the Department of their status as a hazardous waste treatment site.

(B) Such persons shall submit information required by these rules as the Department deems necessary to condition their permit to the requirements of a hazardous waste treatment site.

(C) An existing permit shall be modified according to the procedures of the Division (Air Quality, Water Quality, or Solid Waste) under which it was issued.

7. 63-415 LICENSE REQUIRED. Any person owning or operating a hazardous waste [collection or disposal site] <u>management facility</u> or engaged in a hazardous waste disposal operation under ORS 459.510(3) shall obtain a license pursuant to ORS Chapter 459 and OAR Chapter 340, Divisions 62 and 63.

8. APPENDIX

The following regulations appear in condensed form and are presented for guidance only. The reader is referred to the appropriate Code of Federal Regulations for the full text.

(1) CFR Title 29, <u>Labor, Part 1910,</u> Occupational Safety and Health Administration, U. S. Department of Labor.

<u>(2) CFR Title 40, Polychlorinated Biphenyls (PCBs), Part 761, U. S. Environmental Protection Agency.</u>

[(2)] <u>(3)</u> CFR Title 49, <u>Transportation, Parts 100 - 199,</u> U. S. Department of Transportation.

9. Delete section entitled "29 CFR 1910.93c Carcinogens" in the APPENDIX and replace with the following:

29 CFR 1910.xxxx Carcinogens: A carcinogen means any of the substances listed below, or compositions containing such substances, but does not include compositions containing less than the hazardous concentration of the listed substance.

Section	Substance	Hazardous Concentration (%)
1910.1003	4-Nitrobiphenyl	0.1
1910.1004	alpha-Naphthylamine	1.0
1910.1006	Methyl Chloromethyl ether	0.1
1910.1007	3,3'-Dichlorobenzidine (and salts)	1.0
1910.1008	bis-Chloromethyl ether	0.1
1910.1009	beta-Naphthylamine	0.1
1910.1010	Benzidine (and salts)	0.1
1910.1011	4-Aminodiphenyl	0.1
1910.1012	Ethyleneimine	1.0
1910.1013	beta-Propiolactone	1.0
1910.1014	2-Acetylaminofluorene	1.0
1910.1015	4-Dimethylaminoazobenzene	1.0
1910.1016	N-Nitrosodimethylamine	1.0
1910.1017	Vinyl chloride	1.0
1910.1028	Benzene	0.5
1910.1045	Acrylonitrile (non-polymeric)	1.0

VICTOR ATIYEH
GOVERNOR

Environmental Quality Commission

Mailing Address: BOX 1760, PORTLAND, OR 97207
522 SOUTHWEST 5th AVENUE, PORTLAND, OR 97204 PHONE (503) 229-5696

MEMORANDUM

To: Environmental Quality Commission

From: Director

Subject: Agenda Item No. O, April 18, 1980, EQC Meeting

Request for a Variance from Subsurface Rules; OAR 340-71-030(4)(f)(E), Illahee Planned Unit Develoment, Douglas County

Background and Problem Statement

ORS 454.657 provides that after hearing, the Commission may grant variances from the particular requirements of any rule or standard pertaining to subsurface sewage disposal systems. The Commission shall grant Variances only where it finds that strict compliance with the rule or standard is inappropriate for cause or because special physical conditions render strict compliance unreasonable, burdensome or impractical.

ORS 454.660 provides that the Commission may delegate the power to grant variances to special variance officers appointed by the Director.

OAR 340-75-040 prohibits a variance officer from granting a variance on a parcel or lot that contains an area suitable for installation of a subsurface system that would comply with OAR 340-71-020 to 71-035.

Illahee Planned Unit Development is proposing a community drainfield system to serve 66 homes. The site proposed for the drainfield complies with the standards in OAR 340-71-020 to 71-035; thus a variance officer may not grant a variance on this site. In such instances, the Commission is requested to consider a variance.

The developer is requesting a variance to the standard that establishes disposal trench width at not less than 24 inches; OAR 340-71-030(4)(f)(E). The developer and his consultant contends that due to the soil conditions on the site and the type of distribution system planned, it is unreasonable burdensome and impractical to require disposal trenches to be 24 inches in width. They request a variance that would allow the disposal trenches to be 8 inches in width. This would conserve resources, washed drainfield rock, and reduce system costs, while providing a workable disposal system.

Alternatives and Evaluation

The Commission may grant or deny the variance application. In the event of denial, the system would be installed with disposal trenches 24 inches wide.

The University of North Carolina has monitored several hundred drainfields installed with narrow trenches and pressure distribution similar to this proposal. They report no clogging has occurred.

Staff is of the opinion that this proposal is sound. A pressure distribution system installed under conditions like those that exist on this site should provide a reliable, workable disposal system.

Summation

1. ORS 454.657 provides that the Commission may grant variances from the particular requirements of any rule or standard pertaining to subsurface sewage disposal systems if it finds that special physical conditions render strict compliance unreasonable, burdensome or impractical.

2. The owner of Illahee Planned Unit Development in Douglas County has requested a variance from the standard contained in OAR 340-71-030(4)(f)(E), that sets the minimum width of a disposal trench at 24 inches.

3. Considering the system design proposed and conditions on the site, staff is of the opinion that the proposal is sound.

4. Findings. The Commission finds that the requirement for 24-inch wide trenches to be inappropriate because special physical conditions on the site render strict compliance unreasonable, burdensome, and impractical.

Director's Recommendation

Based upon the findings in the summation, it is recommended that the variance requested be granted.

WILLIAM H. YOUNG

Attachment: Variance

Jack Osborne:bpr
229-6218
April 1, 1980
XB1206

Application for Variance from Administrative Rules
Regulating Subsurface Sewage Disposal Systems

Please complete this application form and submit two hundred twenty-five ($225) dollars and required attachments to:

Department of Environmental Quality
Subsurface & Alternative Sewage Systems Section
Box 1760
Portland, Oregon 97207

REFERENCE INFORMATION - Please Print

Illahe Development, Inc.
Name of Owner

P.O. Box 596
Address

Roseburg, OR 97470
City State Zip Code

673-5978
Business Phone Home Phone

27 T26S R6W W.M.
Section

7497.00 & 7497.72 66 Acres
Tax Lot or Account No. Parcel Size

Subdivision Name _____

Lot _____ Block _____

County _____

ATTACHMENTS

Provide The Following Items:

1. Complete and accurate directions to the property. A locater map would be helpful.

2. Copies of all correspondence and field notes relating to past denial(s) for septic tank-drainfield development. A copy of the site evaluation must be included.

3. Two (2) copies of the parcel's legal description (metes and bounds, warranty deed, sales contract, or approved subdivision plat).

4. Two (2) copies of an assessor or title company plat map or a surveyor plat map.

5. Two (2) copies of a statement from the local government agency regulating zoning, land use planning, and building requirements which assures development of the proposed sewage generating structure will not conflict with any applicable ordinances.

6. Two (2) copies of narrative description of your variance proposal including the system construction specifications. Please list the step-by-step procedures that you propose to be followed for the installation of this system.

7. On a plot plan draw to a defined scale of not less than one inch equals thirty feet, show the location and dimensions of the proposed drainfield and its replacement area. Indicate separation distances between disposal trenches, wells, springs, water courses, agricultural drainage tile, ditches, drainage ways, waterlines, buildings, roads, embankments, and other identifying features which help demonstrate parcel to drainfield relationships. Please provide two (2) copies.

8. Two (2) copies of a profile view of the proposal which illustrates the projected drainfield layout, trench dimensions, backfill depth, boundaries, (in cases where a crown over the drainfield is proposed), slope direction and percent of slope.

A minimum of two test pits must be provided within the specific area where the actual variance system is being proposed. The pits should be approximately two feet wide, four feet long, and excavated to either bedrock or to a depth of five (5) feet. Similar pits must be provided in the area of the repair system.

Please note that it is your responsibility to present all of the facts and the reasoning which you feel justifies the granting of the variance as requested.

Signature of Owner President

March 12, 1980
Date

DEQ/WQ-406 Revised (8/79)

State of Oregon
DEPARTMENT OF ENVIRONMENTAL QUALITY
RECEIVED
MAR 24 1980
WATER QUALITY CONTROL

NORTHWEST SOIL CONSULTING

Steve Wert, C.P.S.S.
SOIL SCIENTIST

1347 N.E. Ridge Ave.
Roseburg, Oregon 97470

673-4148

March 13, 1980

Jack Osborne
Department of Environmental Quality
Subsurface & Alternative Sewage Systems Section
Box 1760
Portland, Oregon 97207

Subject: Proposal for a variance to trench width.

Dear Jack:

On March 11, 1980, Harold Ball, Greg Farrell, and Steve Wert met with Jack Osborne, Mark Ronayne, and Jim Van Domelen concerning a drainfield for the Illahee P.U.D.. The site and design has been approved by the DEQ for a community drainfield to serve 66 homes. The purpose of the meeting was to seek a variance to install the trenches by using a trenching machine.

We propose:

1. Use a trenching machine to cut an 8" wide trench 24-30" deep.
2. Use 1¼" PVC pipe to pressure distribute effluent.
3. Install drainlines ten feet apart on center.
4. Dose effluent so no more than 6" of trench depth is inundated at any one dosing.
5. Use standard drainrock (2½-3/4" washed rock) to surround drain lines.
6. Install trenches when soil is at its driest to prevent compaction and smearing.
7. Small clay dams will be used in the trench bottom to prevent excess loading.

8. Total length of drain lines will be designed based on the DEQ recommendations. The length will be dependent on the amount of storage required in the trenches.

University of North Carolina has allowed the installation of 200-300 drainfields which were installed using 4" or 6" "ditch-witch" machines. The drainfields are following septic tanks. A spacing of five feet on centers is used. Some of those systems are four years old. They report no clogging mat has developed in that time. They dose several times per day.

They are encouraged by their experience to the point that a system is being designed to handle 40,000 gal/day effluent flow.

University of Wisconsin's Small Waste Flow project has experimented with trenching machines. Dr. Jerry Tyler says the machine loosens the silt loam soil they worked with. It did not compact it. It did smear the soil when the soil moisture content was at field capacity.

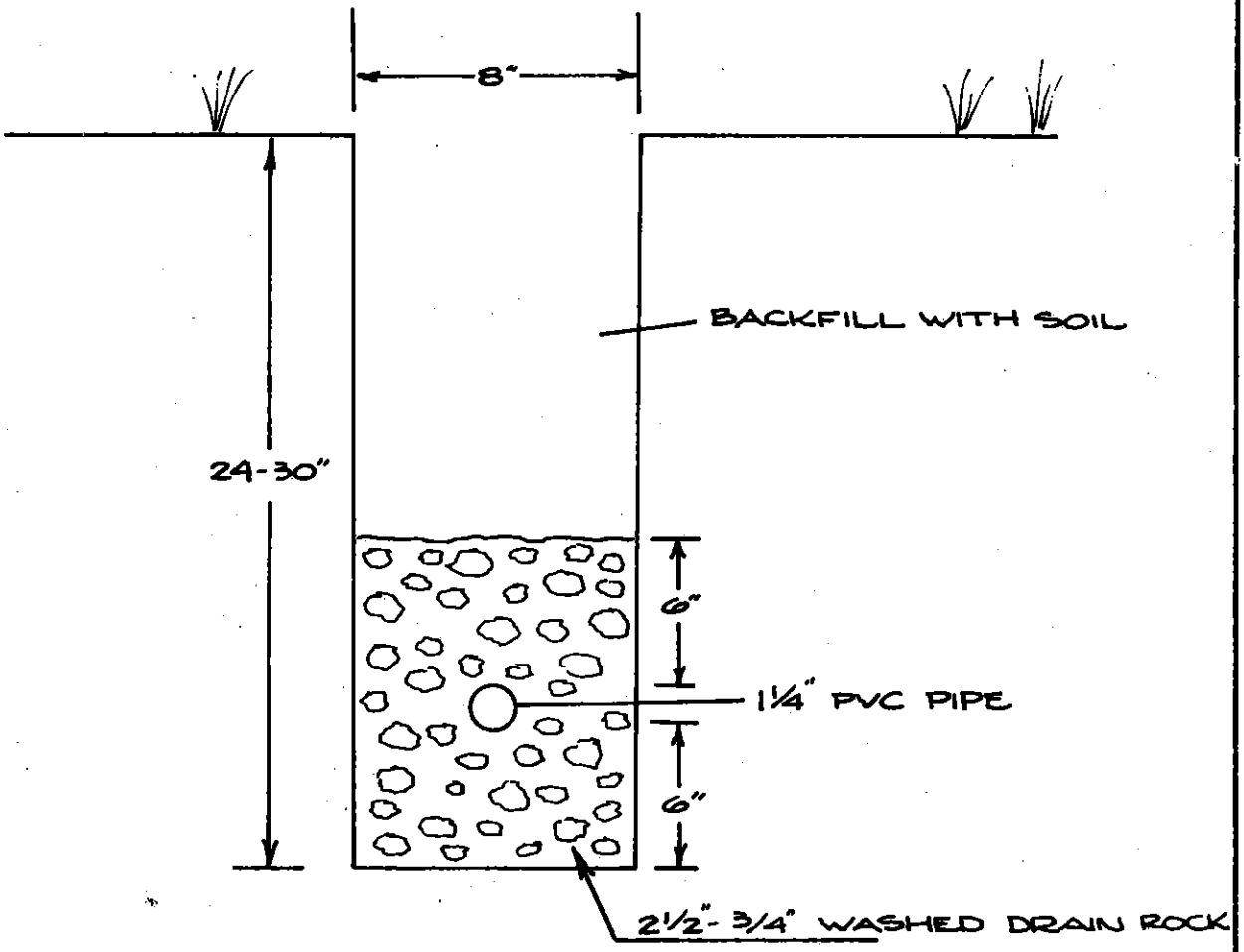
If you have any questions, feel free to call. Should you wish to talk to North Carolina, I have their number.

Sincerely,

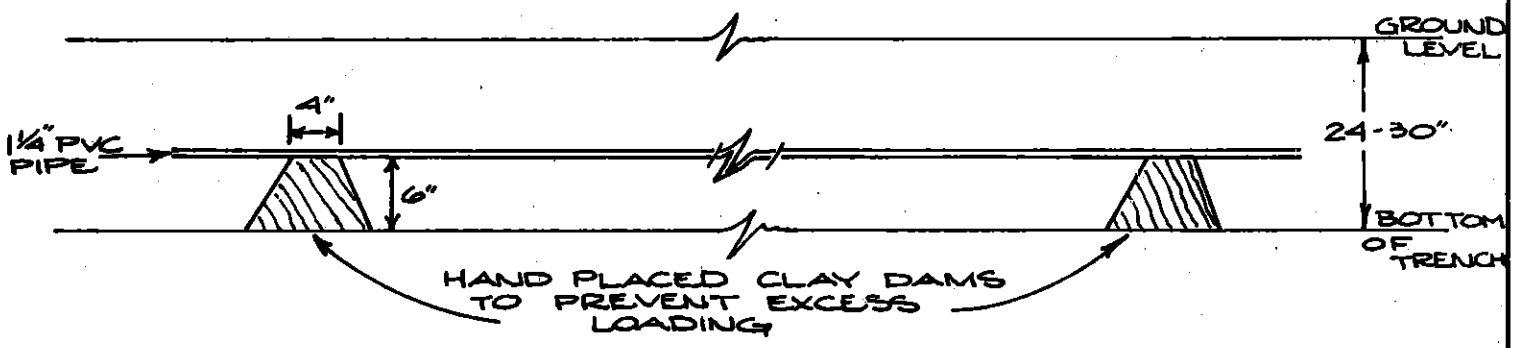
Steve Wert

Steve Wert

TYPICAL CROSS-SECTION OF PROPOSED 8" TRENCH FOR ILLAHEE DRAINFIELD



TYPICAL TRENCH SECTION



TYPICAL LONGITUDINAL SECTION

VICTOR ATIYEH
GOVERNOR

Environmental Quality Commission

Mailing Address: BOX 1760, PORTLAND, OR 97207
522 SOUTHWEST 5th AVENUE, PORTLAND, OR 97204 PHONE (503) 229-5696

MEMORANDUM

To: Environmental Quality Commission

From: Director

Subject: Agenda Item No. P, April 18, 1980, EQC Meeting

S.W. Lesser Road Area, within the city of Portland--
Certification of Plans for Sewerage System as
Adequate to Alleviate Health Hazard, ORS 222.898

Background

This area was referred to the State Health Division for a health hazard survey by resolution of the Multnomah County Board of Commissioners on November 21, 1978.

The area was surveyed from May 14 to 17, 1979. One hundred one of the one hundred forty-three properties were surveyed. Twenty-five (25) properties had inadequate sewage disposal.

The administrator of the State Health Division on November 1, 1979, after following all due process required by ORS 222.850 to ORS 222.915, issued an order adopting the 'Findings of Fact and Recommendations by Hearings Officer' dated September 13, 1979, in this matter. A certified copy of same was filed with the city of Portland on November 5. The order, finding that a danger to public health exists, covers the S.W. Lesser Road area southwesterly of the city of Portland and due west of the Mt. Sylvania campus of Portland Community College.

The city had 90 days after receipt of the certified copy of the Findings to prepare preliminary plans and specifications, together with a time schedule for removing or alleviating the health hazard. The city requested a 90-day extension of time to complete these items on February 11, 1980.

By letter dated March 28, 1980, the city of Portland submitted to DEQ a preliminary plan and specifications, together with a schedule for construction of sewers.

The Environmental Quality Commission has 60 days from time of receipt of preliminary plans and other documents to determine them and the proposed time schedule either adequate or inadequate to remove or alleviate the dangerous conditions and to certify same to the city.

Evaluation

The city proposes to use conventional gravity collection sewers to serve the area. Flows are proposed at this time to exit from two subsystems (to the west and south) and be conveyed to existing sewer lines of the city of Tigard and the Unified Sewerage Agency of Washington County respectively providing interagency agreements are executed. Treatment and disposal would be at the Durham sewage plant in Washington County. Work would consist of approximately 5 miles of sewers.

The proposed time schedule envisions construction completion by the spring of 1983. Included in this schedule is about a fourteen-month design period necessary to perform surveys, acquire easements, negotiate interagency agreements, prepare final construction cost estimates, etc. Considering these tasks, the nature of the terrain, interfering utilities, the number of streets and highways in the area, etc., the design schedule is reasonable. The proposed time schedule for all work items appears reasonable and therefore acceptable.

Financing is proposed at this time to be entirely from property assessments.

The plan, specifications and time schedule proposed, appear to be sufficient to satisfy the law.

The conditions dangerous to public health within the territory can be removed or alleviated within the time schedule, as proposed, by the construction of the sewer system described.

Summation

1. Pursuant to the provisions of ORS 222.850 to 222.915, the State Health Division issued an order adopting findings and certifying a copy of Division's finding to the city of Portland.

2. The city has submitted preliminary plans and specifications together with a time schedule to the DEQ for review.

3. ORS 222.898(1) requires the Commission to review the preliminary plans and other documents submitted by the city within 60 days of receipt.

4. The sanitary facilities proposed by said plans and specifications will remove the conditions dangerous to public health within the area, and the proposed time schedule is reasonable.

5. ORS 222.898(2) requires the Commission to certify to the city its approval if it considers the proposed facilities and time schedule adequate to remove or alleviate the dangerous conditions.

Director's Recommendation

Based upon the findings in the Summation, it is recommended that the Commission approve the proposal of the city of Portland and certify said approval to the city.

Bill

William H. Young

Attachment: 1 Certificate

James L. Van Domelen:1
229-5310
April 2, 1980

WL1251

STATE OF OREGON

ENVIRONMENTAL QUALITY COMMISSION

In the Matter of An Annexation of Certain Territory to the city of Portland, Oregon, Pursuant to the Provisions of ORS 222.850 to 222.925 Due to Conditions Causing a Danger to Public Health	)))))))	CERTIFICATE

The Environmental Quality Commission of the state of Oregon on March 28, 1980, received preliminary plans and specifications together with a time schedule for the implementation of a plan to install sanitary sewers in certain territory commonly known and referred to as the S.W. Lesser Road Area adjacent to the corporate limits of the city of Portland, Oregon.

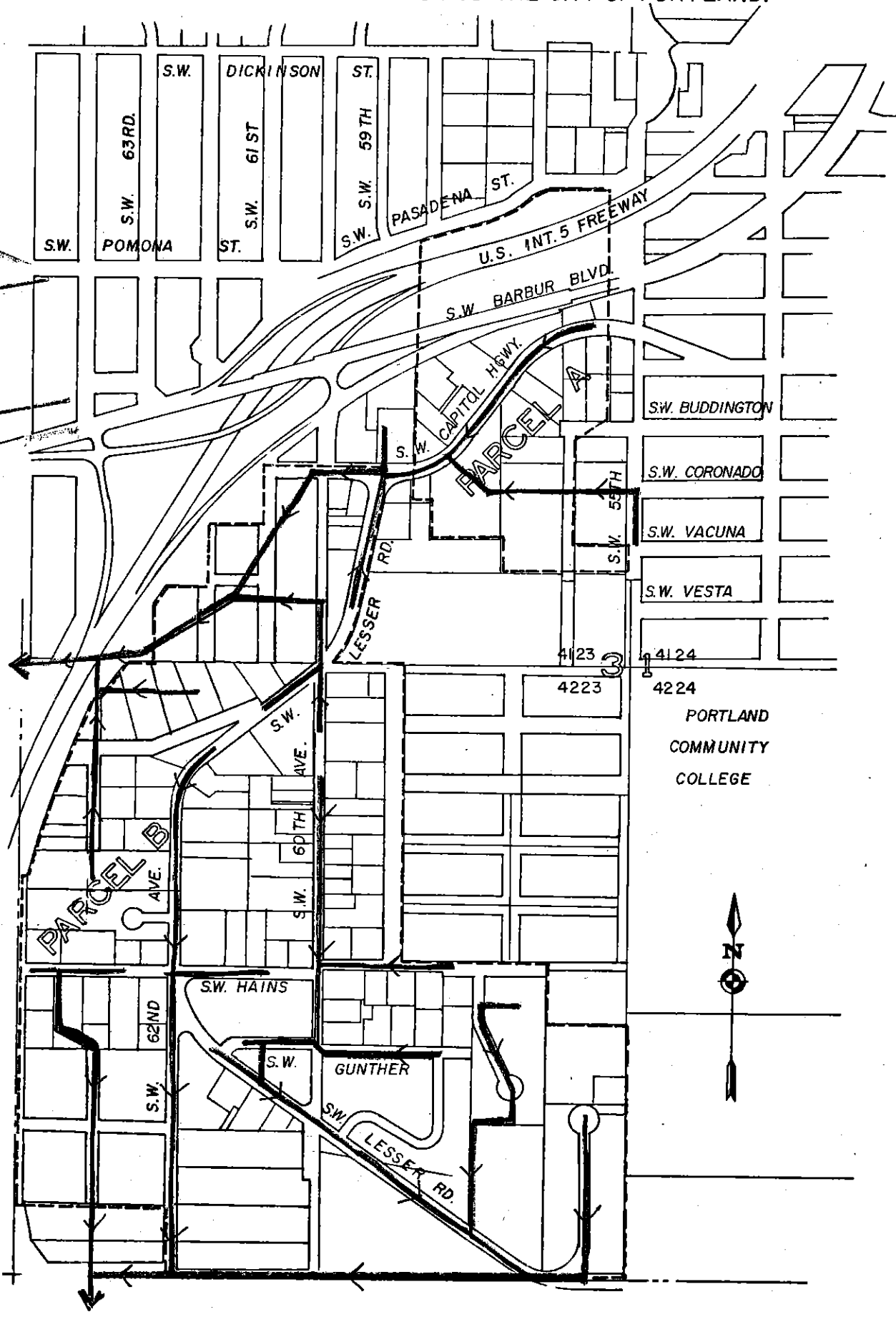
Pursuant to the Provisions of ORS 222.898, the Environmental Quality Commission reviewed and hereby approves said plans and specifications and the time schedule, copies of which are contained in Exhibit "A" attached hereto and made a part hereof and does hereby certify its approval to the city that it considers the sanitary sewers adequate to remove or alleviate the conditions causing a danger to public health existing within the area adjacent to the city of Portland as aforesaid; to-wit: inadequate installations for the disposal and treatment of sewage.

Dated this 18th day of April, 1980.

Chairman
Environmental Quality Commission

WL1251

PROPOSED SANITARY SEWER SYSTEM FOR THE S.W. LESSER ROAD HEALTH HAZARD ANNEXATION AREA TO THE CITY OF PORTLAND.



APPROVED

on

ay

State of Oregon
DEPARTMENT OF ENVIRONMENTAL QUALITY
RECEIVED
MAR 28 1980
WATER QUALITY CONTROL

ALT. 3

PROPOSED TIME SCHEDULE FOR CONSTRUCTING SANITARY SEWERS

in the

SW LESSER ROAD HEALTH HAZARD ANNEXATION AREA

DATE	WORK ITEM
April 4, 1980	Preliminary sewer plans and schedule completed and copies forwarded to E.Q.C.
May 1, 1980	City receives approval of preliminary plans and schedule from E.Q.C.
May 14, 1980	City Council adopts ordinance in accordance with ORS 222.900 which adopts plans and schedule approved by E.Q.C.
May 14, 1980	City Engineer directed to prepare final plans and specifications for sewers in the annexed area. Sewer design begins.
May 28, 1980	Neighborhood meeting held to obtain property owners input prior to design.
July 16, 1981	Final plans and specifications complete and transmitted to Auditor's Office
Nov. 13, 1981	Assessment notices sent to property owners; remonstrance period begins
Nov. 25, 1981	Neighborhood meeting held to inform and answer questions of property owners
Dec. 2, 1981	Remonstrance period ends, public hearing held
Dec. 16, 1981	Council passes time and manner ordinance
Dec. 29, 1981	City sends out advertisement for bids
Jan. 27, 1982	Bids opened, low bid determined
Feb. 10, 1982	City Council awards contract
Mar. 3, 1982	Contract documents executed and construction begins
Mar. 3, 1983	Construction complete

APPROVED

on _____

By _____

№ 113

STANDARD CONSTRUCTION SPECIFICATIONS

Unless specified otherwise in the contract documents, these Standard Construction Specifications apply in their entirety to all City of Portland, Department of Public Works and Bureau of Water Works construction contracts advertised for bids and all permits issued after:

MARCH 1, 1978

APPROVED
ON _____
BY _____

DEPARTMENT OF PUBLIC WORKS
CITY OF PORTLAND, OREGON

FOREWORD

This first edition of Standard Construction Specifications for the City of Portland, Oregon replaces the specifications adopted by the City Council in 1963 through passage of Ordinance No.116510. These new specifications have been compiled and partially rewritten by the City of Portland from specifications recently formulated and authored by a statewide committee of the Oregon Chapter of the American Public Works Association, of which the City of Portland is a member.

Being a first edition, there may exist in these specifications minor errors, discrepancies or omissions; it would be appreciated by the editor if users of these specifications would notify the Office of Public Works Administrator of any required corrections.

The specifications contained herein have been authorized by the Council of the City of Portland for use on all Public Works and Bureau of Water Works construction projects through passage of an enacting ordinance.

Revisions

These specifications may be revised periodically as needed. Each revision will be on replacement looseleaf pages to be inserted as indicated, accompanied by a replacement title page with the effective date of the revision. This revised date will be the current date of these specifications and will be referred to in all subsequent advertisement for bids and on all issued permits.

It shall be the responsibility of each holder or user of these specifications to verify that he has the latest revised copy; revisions are available from the Office of Public Works Administrator at the current price per sheet, plus postage, where applicable.

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DIVISION ONE - GENERAL REQUIREMENTS

* * * *

401 TUNNELING, BORING AND JACKING

401.1.00 DESCRIPTION

401.1.01 TUNNELING

Tunneling shall include all methods by which the underground passageway is first excavated and then pipe or conduit brought in and placed.

401.1.02 BORING

Boring shall include all methods by which a pipe or conduit is pushed or pulled into place and by which the excavation method precludes the stationing of a workman within the pipe or conduit without stopping or removing the excavation equipment.

401.1.03 JACKING

Jacking shall include all methods by which a pipe or conduit is pushed or pulled into place with one or more workmen inside to excavate and assist in keeping the conduit on a straight and true grade and alignment.

401.1.04 PERMITTER

Within this section, permitter shall designate the owner of railroad tracks or other facilities with prior rights, under which a pipe or conduit must be tunneled, bored or jacked.

401.2.00 MATERIALS

401.2.01 PIPE BEDDING AND PIPE ZONE MATERIAL

Conform to the requirements of Section 204 EXCAVATION, EMBANKMENT, BEDDING AND BACKFILL.

401.2.02 PIPE

Conform to Section 402 PIPE AND FITTINGS (SANITARY AND STORM SEWERS) for the strength, class, and type as shown or specified.

401.2.03 CASING

Use corrugated metal pipe for casing in tunneled, bored or jacked applications where specified and approved. Give coupling bands a protective coating similar to pipes. Provide galvanized bolts for connection. Corrugated metal pipe shall conform to the requirements in Section 402 PIPE AND FITTINGS (SANITARY AND STORM DRAINS).

Provide casing of size to permit proper construction to the required lines and grades. Casing shall be the type shown in the table below.

Use a minimum gauge or wall thickness corresponding to the size of casing selected from the following; however, be responsible for selecting the gauge consistent with the operations and the specified requirements of the permitter.

Diameter Inches	AASHTO M 36 Corrugated Metal Pipe U.S. Standard Gauge	Smooth Steel Pipe Min. Thickness
15-24	12	¼ ASTM A 53
30-36	10	5/16 AWWA C 201
48-78	8	Not Allowable

Equip jacked casings with nipples at the spring line and crown at 10-foot centers when pressure grouting is specified.

Optionally construct the casing of galvanized standard, off-set tunnel liner plate with gauge and section modulus per inch of width, as approved. Nipples for pressure grouting, when specified, shall be installed at the spring line and crown at 10-foot centers.

401.3.00 CONSTRUCTION

401.3.01 GENERAL

Conform to all Federal, State and local laws and regulations pertaining to tunneling and specifically to the standards set forth in the Oregon Safety Code for Places of Employment, Chapter 24, Safety Code for Mining, Tunneling and Quarrying, published by the Oregon Industrial Accident Commission, latest revision.

Before the start of the work, submit satisfactory evidence to the Engineer that all insurance coverage requirements called for by the permitter have been complied with. All proposed construction methods and materials shall be approved by the Engineer and permitter before the start of construction. Written

approval to proceed from the permitter shall be submitted to the Engineer before the start of construction.

401.3.02 EXCAVATION

Excavation shall be unclassified and shall include whatever materials are encountered to the depths as shown or as required. Make estimate of the kind and extent of the various materials which will be encountered in the excavation.

401.3.03 TUNNELING DETAILS REQUIRED

Submit details of the following to the Engineer for approval before beginning the tunnel construction:

1. Tunnel shaft bracing and dimensions
2. Tunnel supports
3. Method of backpacking tunnel supports
4. Bracing to prevent pipe or conduit shifting and flotation
5. Backfill material or pressure grout mix, placement method and equipment.

401.3.04 JACKING AND BORING DETAILS REQUIRED

Submit details of the following to the Engineer for approval before beginning the jacking or boring construction:

1. Jacking pit bracing
2. Casing, pipe or conduit
3. Jacking head
4. Excavation method
5. Tee or wye installation
6. A substitute design for any part of the system that must be changed as a result of the jacking or boring operation. (Manhole, headwall, etc.)
7. Any structure that is required because of the particular method or procedure used by the Contractor.
8. If placed in a casing, bracing to prevent pipe shifting and flotation, backfilling material, method and equipment.
9. Backfill material or pressure grout mix, placement method and equipment.

401.3.05 TUNNELING

Tunneling will be permitted only where shown, specified or approved.

Make the subgrade, upon which the pipe is to be placed or constructed, firm, thoroughly compacted and true to grade. Pipe bedding shall conform to the Standard Plans for the type of bedding specified. Restore to grade by backfilling with approved Bedding Material, at no expense to the Owner, all excavation below grade, which is made inadvertently or without authority.

401.3.06 ALTERNATE OF JACKING OR BORING

Jacking or boring may be allowed in lieu of the open trench method or tunneling. However, written approval by the Engineer must first be obtained. The Engineer retains the right to reject either the jacking or boring method without rejecting the other. Approval by the Engineer shall in no way relieve the Contractor of the responsibility for making a satisfactory installation meeting the requirements set forth herein.

401.3.07 JACKING AND BORING

Equip the leading section of pipe or conduit with a jacking head securely anchored thereto to prevent any wobble or alignment variation during the jacking or boring operation. For jacking, all excavation shall be carried out entirely within the jacking head, and no excavation in advance thereof shall be permitted. For jacking, every effort shall be made to avoid any loss of earth outside the jacking head. Remove excavated material from the pipe or conduit as excavation progresses, and do not allow such material to accumulate within the pipe or conduit.

Jack or bore all pipes or conduits to true line and grade. Should any deviation from true line and grade be considered excessive, in the judgment of the Engineer, take up and relay that portion of the pipe or conduit at no expense to the Owner.

Should appreciable loss of ground occur during the jacking or boring operations, backpack all voids promptly. Fill all remaining voids upon completion of the operations; such filling or backpacking shall be with grout or approved granular material.

The design of all sewer pipe or conduit is based upon the superimposed loads and not upon the loads resulting from the jacking or boring operations. Be responsible for any increase in pipe strength necessary to withstand jacking or boring loads.

401.3.08 CONCRETE PIPE AND BOX SECTIONS

Protect the driving ends of concrete pipe or conduit against spalling and other damage. Intermediate joints shall be similarly protected by the installation of sufficient bearing shims to properly distribute the bearing stresses. Remove any section of pipe or conduit showing signs of failure and replace with a new section or with a cast-in-place section which, in the judgment of the Engineer, is adequate to carry the loads imposed upon it.

401.3.09 SMOOTH STEEL CASING

Join sections of smooth steel casing to be jacked or bored by welding the joints with a continuous weld for full circumference or by other approved means. Provide joints which are capable of resisting the jacking and boring forces without failure.

Brace pipe or conduit installed in a casing to prevent shifting and flotation. Fill the void between the casing and the pipe or conduit with grout, or other material as specified or approved.

If not shown or specified, the casing diameter shall be the option of the Contractor. Provide casing of such strength as to withstand the jacking or boring loads and of such diameter to allow filling the void between the pipe or conduit and casing with the approved material.

401.3.10 GROUTING VOIDS OUTSIDE CASING OR TUNNEL LINER

When grouting is specified, after the casing has been jacked into position or the liner plates have been placed in the tunnel, pressure grout to fill all voids outside the casing or liner plates through the grout holes provided. Start grouting at the spring line hole at one end and pump grout until grout appears in the grout hole at the crown, then start grouting through the opposite spring line hole until grout appears at the hole in the crown. Next grout through the hole at the crown until grout appears in the next set of holes along the pipe. Plug the holes at the starting point and move to the next set of holes and repeat grouting sequence until full length of jacked, bored or tunneled pipe has been grouted. Grouting once commenced at any one point shall be completed without stopping.

401.3.11 CASED OR TUNNELED PIPE

Where timber cradles are shown, provide strapped timber cradle under barrel of pipe, join pipe, and slide into casing. Pipe barrel shall bear continuously on cradles. Pipe installation shall conform to applicable requirements in Section 402 PIPE AND FITTINGS (SANITARY AND STORM SEWERS), including hydrostatic or air testing and line and grade.

401.3.12 PLACING BACKFILL OUTSIDE CARRIER PIPE

Where shown or when directed, completely fill the annular space between the casing or tunnel liner and the carrier pipe or conduit with specified or approved backfill material. Accomplish backfilling by pumping material from the two ends at such intermediate points as may be necessary in a manner which will ensure all voids are filled. When grouting use approved low pressure grouting equipment.

401.3.13 RAILROAD CROSSINGS

Where shown in the Proposal and specified, submit bids on the basis of open trench construction through all railroad crossings. The right is reserved by the Owner to require tunneling, jacking or boring under any or all crossings.

Should open trench construction be required by the Owner at a railroad crossing, the railroad will take up and relay the tracks at its own expense. Submit a schedule of operations to the railroad company and to the Owner 72 hours before trenching within 20 feet of the railroad tracks. Construct the pipe crossing and compact backfill through the track location within 72 hours after the tracks have been removed by the railroad unless otherwise permitted.

When a tunneling alternate is chosen, special attention shall be given to the backfill. Backfill as required in Section 204 EXCAVATION, EMBANKMENT, BEDDING AND BACKFILL.

401.4.00 MEASUREMENT AND PAYMENT

401.4.01 TUNNELING, BORING AND JACKING

Measurement and payment for tunneled, bored and jacked pipe or conduit will be made on a linear foot basis. Payment will include full compensation for all excavation, shafts, portals, jacking pits, tunnel stabilization, backfill, lubricant, grouting pipe, casing and all appurtenances as approved, complete, except for tees and wyes.

Where casing is used at the option of the Contractor, the casing and the backfill between the pipe or conduit and the casing shall be included in the pay item for Tunneling, Boring or Jacking as applicable, and no separate payment will be made therefor.

Measurement for tunneling, jacking and boring will be made on a linear foot basis along the centerline of the pipe or conduit between portals. Tunneling, jacking and boring extensions beyond the limits shown shall be considered to be for the Contractor's convenience, unless ordered in writing, and measurement and payment for said extension shall be made as if the open trench method of construction had been used.

401.4.02 JACKING OR BORING IN LIEU OF TUNNELING

Where jacking or boring of a pipe or conduit is approved in lieu of tunneling, measurement and payment will be made as though the tunneling method had been used and payment shall be made at the bid price for tunneling.

401.4.03 TUNNELING, JACKING OR BORING IN LIEU OF OPEN TRENCH

Where tunneling, jacking or boring of a conduit is approved in lieu of open trench construction, measurement and payment will be made as though the open trench method had been used and will include all the pay items that would have been applicable if the open trench construction method had been used.

401.4.04 TUNNELING IN LIEU OF JACKING OR BORING

Where tunneling of a pipe or conduit is approved in lieu of jacking or boring, measurement and payment will be made as though the jacking or boring method had been used and payment shall be made at the bid price for jacking or boring as applicable.

401.4.05 RAILROAD TRACK CROSSINGS

Alternate bids for tunneling, jacking or boring track crossings, if in the Proposal, are Add or Deduct adjustments per linear foot to the computed open trench cost. The computed open trench cost shall be based on the standard pay width, the depth as shown, the length as actually tunneled, portal to portal (except that it shall not exceed the maximum length as shown), and the following assumed pay items:

1. Trench excavation and granular backfill.
2. Pipe or conduit of the size and strength shown.
3. Surfacing material of the same type and thickness as exists within the track section.
4. Pavement base courses when required.
5. Crushed Aggregate for Class "B" pipe bedding.

401.4.06 TEES AND WYES

Measurement and payment for tees and wyes in a tunneled, jacked or bored pipe or conduit will be made at the contract unit price for tees and wyes installed in an open trench as provided for in Section 402 PIPE AND FITTINGS (SANITARY AND STORM SEWERS).

402 PIPE AND FITTINGS (SANITARY AND STORM SEWERS)

402.1.00 DESCRIPTION

This section covers the following work:

1. Gravity and pressure sewer pipe
2. Culverts
3. Perforated pipe underdrains
4. Fittings
5. Service line sewers

402.2.00 MATERIALS

402.2.01 GENERAL

Use all sewer pipe and fittings of the size, strength, material and joint type specified on the Plans and/or in the Proposal. Use jointing material as hereinafter specified for each pipe material. Each piece of pipe shall be clearly identified as to strength, class and date of manufacture. The manufacturer or fabricator shall furnish appropriate certification, based on manufacturer's routine quality control tests, that the materials in the pipe and fittings meet the requirements specified herein. Strength, permeability, hydrostatic tests and pipe joints will be used as the basis of acceptance as described under Proof Tests herein. Minimum length of pipe shall be 3.5 feet.

It is not intended that materials listed herein are to be considered equal or generally interchangeable for all applications. The Engineer shall determine the materials suitable for the project and so specify.

Use pipe and fittings for service lines of one type of material throughout; no interchanging of pipe and fittings will be allowed. Use 6-inch diameter pipe for residential services when not otherwise specified.

Do not coat pipes for sewers internally or externally with any substance of any type in an attempt to improve its performance when air or hydrostatically tested.

402.2.02 CONCRETE PIPE

402.2.02A NONREINFORCED CONCRETE PIPE

Use nonreinforced concrete pipe conforming to ASTM C 14 with ASTM C 150, Type II cement.

402.2.02B REINFORCED CONCRETE PIPE

Use reinforced concrete pipe conforming to ASTM C 76 with ASTM C 150, Type II cement. Elliptically reinforced pipe shall have top and bottom clearly marked.

402.2.02C MONOLITHIC CONCRETE PIPE

Use monolithic concrete pipe conforming to the requirements specified.

402.2.02D CAST-IN-PLACE PIPE

Use cast-in-place pipe conforming to the requirements specified.

402.2.02E PERFORATED CONCRETE PIPE

Use perforated concrete pipe and fittings conforming to ASTM C 444, class and end type as specified.

402.2.03 CLAY PIPE

Use vitrified clay pipe conforming to ASTM C 700 and Clay Pipe Institute West Coast Standards. Use perforated clay pipe conforming to ASTM C 278 with perforations conforming to ASTM C 211.

402.2.04 ASBESTOS-CEMENT PIPE

Use asbestos-cement pipe conforming to ASTM C 428 and ASTM C 644 and supplied with plain ends or with ends machined for tapered couplings. Use perforated asbestos-cement pipe and fittings conforming to ASTM C 508.

For service line sewers, furnish pipe in the manufacturer's standard length, except provide half-lengths and random lengths as required. Provide all tools for field-cutting the pipe to the required lengths, and machine the ends as specified by the manufacturer.

402.2.05 CAST IRON PIPE

Use cast iron pipe conforming to AWWA C 106 or C 108, or ANSI Specification A21.6, with Push-on Joint or Mechanical Joints as specified, conforming to Federal Specification WW-P-421c and ANSI A21.11. Cast iron pipe shall be lined with cement mortar and seal coated in accordance with ANSI Specification A21.4 and AWWA C 104. Provide all foundry records of pipe as described in ANSI A21.6, when requested.

402.2.06 DUCTILE IRON PIPE

Use ductile iron pipe conforming to ANSI A21.51 or AWWA C 151, with push-on joint or mechanical joints as specified, conforming to Federal Specification WW-P-421c and ANSI Specification A21.11. Ductile iron pipe shall be lined with cement mortar and seal coated in accordance with ANSI Standard A21.4 and AWWA C 104.

402.2.07 ABS PIPE

Use ABS single wall pipe conforming to ASTM D 2751 and ABS composite pipe conforming to ASTM D 2680, with solvent-cemented or mechanical-seal joints as specified.

Perforated ABS pipe and fittings shall be virgin rigid ABS plastic and shall conform to ASTM D 2751, Type I and Type IV, except that the minimum heat deflection temperature (ASTM D 648) shall be 180 degrees F. Wall thickness shall be not less than 0.140 inches for 4-inch diameter and 0.200 inches for 6-inch diameter. In addition, the pipe shall be perforated with 3/8-inch holes, 3-inches on center along the pipe. Four inch pipe shall have one row on each side approximately 45 degrees above bottom centerline. Six inch pipe shall have two rows on each side approximately 45 degrees above bottom centerline.

402.2.08 PVC PIPE

Use PVC sewer pipe conforming to ASTM D 3033 or D 3034. Use perforated PVC pipe conforming to ASTM D 1785, Schedule 40. The perforations shall consist of 2 rows of 2-inch slots. The slots shall be transverse to the axis of the pipe. The 2 rows of slots shall be 120 degrees on centers. Slot size shall be .004 inches.

402.2.09 GALVANIZED CORRUGATED IRON & STEEL PIPE

Use galvanized corrugated iron or steel pipe and coupling bands of the gauges and type as shown or specified, and conforming to the material, fabrication and inspection requirements of AASHTO Designation M 36 or M 167.

402.2.10 CORRUGATED ALUMINUM ALLOY PIPE

Use corrugated aluminum alloy pipe and coupling bands, of the gauges and types as shown or specified, and conforming to the material, fabrication and inspection requirements of AASHTO Designations M 196, M 197, M 211 and M 219.

402.2.11 ASBESTOS-BONDED PIPE

Culvert pipe shall be asbestos-bonded metal pipe when specified. At the time the flat sheet metal is galvanized, a layer of asbestos felt shall be pressed into the molten zinc coating. The sheets shall be air cooled, corrugated and formed into the corrugated steel pipe. The finished pipe shall be completely coated with hot bituminous material conforming to AASHTO M 190, with a minimum thickness of 0.05 inch at the crest of the corrugation.

402.2.12 FLARED END SECTIONS

Use precast concrete flared end sections conforming to the requirements for Reinforced Concrete Pipe herein specified. The area of steel reinforcement per linear foot of flared end section shall be at least equal to the minimum steel requirements for circular reinforcement in circular pipe for the internal diameter of the circular portion of the flared end section. Have all details of construction approved by the Engineer.

Use prefabricated steel flared end sections conforming to AASHTO M 218, and prefabricated aluminum flared end sections conforming to AASHTO M 196.

402.2.13 BITUMINOUS COATING

When specified, completely coat the inside and outside surfaces of corrugated metal pipe with bituminous material conforming to AASHTO M 190, with a minimum thickness of 0.05 inch at the crest of the corrugations.

402.2.14 PAVED INVERTS

When specified, pave the inside surface of the corrugated metal pipe for ¼ of its circumference with bituminous material to provide a flat invert centered in the bottom of the pipe. The pavement, except where the upper edges intersect the corrugations, shall have a minimum thickness of 1/8 inch above the crests of the corrugations. Suitably mark the outside of the pipe on both ends to clearly designate the centerline of the top of the pipe.

402.2.15 SPECIAL FILTER MATERIAL FOR UNDERDRAINS

Use special filter material consisting of coarse sand, crushed or uncrushed gravel, rock or combinations thereof conforming to the following gradation:

Sieve Size Passing	Percentages (by weight)
3/8-inch	100
No. 4	80 to 100
No. 16	35 to 80
No. 30	10 to 60
No. 50	0 to 30
No. 100	0 to 5

Use materials meeting the following liquid limit and plasticity index requirements:

Quality	Test Method	Requirement
Liquid Limit	AASHTO T 89	NP or 33 Max.*
Plasticity Index	AASHTO T 90	NP or 6 Max.*

* Where tested as specified and both the liquid limit and the plasticity index are reportable with a numerical value, the pertinent quality requirements will be met when the numerical values of the test results conform to the following table:

Percent of Material Passing No. 40 Sieve	Liquid Limit (Maximum) AASHTO T 89	Plasticity Index (Maximum) AASHTO T 90
0.0 to 5.0, inclusive	33	6
5.1 to 10.0, inclusive	30	5
10.1 to 15.0, inclusive	27	4
15.1 to 20.0, inclusive	24	3
20.1 to 25.0, inclusive	21	2
Over 25.0	21	0 or NP

402.2.16 FORMS

Use steel or plywood forms for exposed surfaces. Others shall be of matched boards, plywood or other material as approved. Form all vertical surfaces; trench walls, large rock, or earth will not be approved form material.

402.2.17 SERVICE CONNECTION MARKERS

Use new 2" x 4" utility grade lumber, or better, in one piece. No splicing will be permitted.

402.2.18 JOINTING MATERIALS

Use only lubricants for jointing materials approved by the manufacturer.

402.2.18A CONCRETE PIPE

Use rubber gaskets for bell and spigot pipe conforming to ASTM C 443. Use captive gasket in groove design for pipe 24-inch diameter and larger. Mortar for tongue and groove pipe shall conform to Section 205 MATERIALS.

402.2.18B CLAY PIPE

Use rubber gaskets for clay pipe conforming to ASTM C 425.

402.2.18C ASBESTOS-CEMENT PIPE

Use rubber gaskets for asbestos-cement pipe conforming to ASTM D 1869.

402.2.18D CAST IRON AND DUCTILE IRON PIPE

Use rubber gaskets conforming to ANSI A21.11.

402.2.18E ABS PIPE

Use solvent and cement or gaskets as specified in ASTM D 2680 and ASTM D 2751.

402.2.18F PVC PIPE

Use rubber gaskets for PVC pipe conforming to ASTM D 1869.

402.2.19 PROOF TESTS

402.2.19A GENERAL

The intent of this requirement is to prequalify a joint system, components of which meet the joint requirements, as to the water tightness capability of that joint system. This proof test shall be understood to apply to all sanitary sewers and to storm drains which are to be tested for water tightness prior to acceptance. Material and test equipment for proof testing shall be provided by the manufacturer. Joints shall meet the requirements of yard testing specified below. The pipe manufacturer shall submit results of the yard tests made, certified by a testing agency approved by the Engineer. When approved, internal hydrostatic pressure may be applied by a suitable joint tester. In general, each pipe material and joint assembly shall be subject to the following three proof tests at the discretion of the Engineer:

1. Pipe in Straight Alignment. No less than three nor more than five pipes selected from stock by the Engineer shall be assembled according to the manufacturer's installation instructions with the ends suitably plugged and restrained against internal pressure. The pipe shall be subjected to 10 psi hydrostatic pressure for 10 minutes. Free movement of water through the pipe joint or pipe wall shall be grounds for rejection of the pipe.

2. Pipe in Maximum Deflected Position. A test section shall be deflected as described hereinafter for each pipe material. The pipe shall be subjected to 10 psi hydrostatic pressure for 10 minutes. Free movement of water through the pipe joint or pipe wall shall be grounds for rejection of the pipe.

3. Joints Under Differential Load. The test section shall be supported on blocks or otherwise as described hereinafter for each pipe material. There shall be no visible leakage when the stressed joint is subjected to 10 psi internal hydrostatic pressure for 10 minutes.

402.2.19B CONCRETE PIPE

For deflected position, create a position ½-inch wider than the fully compressed position, on one side of the outside perimeter.

For differential load, support so that one pipe is suspended freely between adjacent pipe, bearing only on the joints. In addition to the weight of the suspended pipe add a test load as given in the following table:

TEST LOADS FOR CONCRETE PIPES UNDER DIFFERENTIAL LOAD

Pipe Size	Load Per Foot Laying Length Up to 4 Feet	Total Load For Pipe 4 Feet and Over
4 inches	650	2,600
6 inches	1,000	4,000
8 inches	1,300	5,200
10 inches	1,400	5,600
12 inches	1,500	6,000
15 inches	1,850	7,400
18 inches	2,200	8,800
21 inches	2,500	10,000
24 inches and over	2,750	11,000

402.2.19C CLAY PIPE

For deflected position, deflect one joint ½-inch per foot of pipe length for pipe 12 inches or less in diameter or 3/8-inch per foot of pipe length for pipe 15 inches to 24 inches in diameter.

For differential load, support so that one pipe is suspended freely, bearing only on the joints. A force of 150 pounds per inch diameter shall be applied over an arc of not less than 120 degrees and along a longitudinal distance of 12 inches, immediately adjacent to one of the joints.

402.2.19D ASBESTOS-CEMENT PIPE

For deflected position, deflect one joint 5 degrees (one inch offset per foot of pipe) for diameters 12 inches and under, or 3 degrees (5/8 inches offset per foot of pipe) for diameters 14 inches and larger. One-half the deflection shall be between each pipe and the coupling.

For differential load, support so that one of the pipes is suspended freely between adjacent pipe, bearing only on the couplings. A force of 150 pounds per inch diameter shall be applied over an arc of not less than 120 degrees and along a longitudinal distance of 12 inches, immediately adjacent to one of the couplings.

402.2.19D CAST IRON PIPE AND DUCTILE IRON PIPE

For deflected position, create a position ½-inch wider than the fully compressed section, on one side of the outside perimeter.

For differential load, support so that one of the pipes is suspended freely between adjacent pipe, bearing only on the joints. Apply a force per the following table along a longitudinal distance of 12 inches, immediately adjacent to one of the joints.

Pipe Size		Force-Pounds	Pipe Size		Force-Pounds
4 inches	-	600	15 inches	-	3,700
6 inches	-	900	18 inches	-	4,400
8 inches	-	1,200	21 inches	-	5,000
10 inches	-	1,500	24 inches	-	5,500
12 inches	-	1,800	and over		

402.2.19F ABS COMPOSITE PLASTIC PIPE

For deflected position, join two 12½-foot lengths and deflect along an arc of 720 feet radius (0.11 feet offset at the end of each length, from a tangent at the joint).

For differential load, support so that one of the pipes is suspended freely between adjacent pipe, bearing only on the joints. Apply a force of 150 pounds per inch diameter over an arc of not less than 120 degrees and along a longitudinal distance of 12 inches immediately adjacent to one of the joints.

402.2.19G PVC PIPE

For deflected position, join 12½-foot lengths, then deflect along an arc of 720 feet radius (0.11 feet offset at the end of each length from a tangent at the joint).

For differential load, join two lengths and uniformly support for at least 2 feet on both sides of the joint with vertical load applied sufficient to deflect the joint and adjacent pipe to 95 percent of its initial vertical diameter.

402.2.20 FITTINGS

402.2.20A GENERAL

Provide tee or wye fittings in the sewer main for service line sewers and catch basin or inlet connections. Tees and wyes for service line sewers shall be 6 inches inside diameter, unless otherwise specified. All fittings shall be of sufficient strength to withstand all handling and load stresses encountered. All fittings shall be of the same materials as the pipe unless otherwise specified. Material joining the fittings to the pipe shall be free from cracks and shall adhere tightly to each joining surface. Use the same type of joints on all fittings that are used on the main sewer pipe.

402.2.20B CONCRETE PIPE

Use shop fabricated fittings on 12-inch and smaller concrete pipe. Fittings on pipe 15 inches and larger may be field or shop fabricated.

Submit and obtain approval of fabrication details for shop fabricated fittings prior to delivery of fittings to the jobsite.

402.2.20C CLAY PIPE

Use fittings on clay pipe which conform to ASTM C 700.

402.2.20D ASBESTOS-CEMENT PIPE

Use couplings which consist of an asbestos-cement sleeve, machined or otherwise arranged for use with rubber sealing gaskets conforming to ASTM D 1869. Sleeves shall be arranged so the rubber rings are self-positioning. Couplings shall be approved pattern standard with the pipe manufacturer.

402.2.20E CAST IRON AND DUCTILE PIPE

Use mechanical joint cast iron fittings conforming to ANSI A21.10 and AWWA C 110, and of a class at least equal to that of the adjacent pipe. Use push-on fittings of gray cast iron with body thickness and radii of curvature conforming to ANSI A21.10 and joints conforming to ANSI A21.11 and AWWA C 111 or Federal Specification WW-P-421C.

402.2.20F PVC PIPE

Use push-on type fittings for joints conforming to the same standards as the pipe.

402.2.20G ABS PLASTIC PIPE

Use fittings which conform to ASTM D 2751 or D 2680.

402.2.21 COUPLINGS, BANDS AND FITTINGS FOR CORRUGATED METAL PIPE

Use couplings, bands and fittings as specified by the pipe manufacturer and approved by the Engineer.

402.3.00 CONSTRUCTION

402.3.01 LINE AND GRADE FOR GRAVITY AND PRESSURE SEWERS

Do not deviate from line or grade, as established by the Engineer, more than ½ inch for line and ¼ inch for grade, provided that such variation does not result in a level or reverse sloping invert. Measure for grade at the pipe invert, not at the top of the pipe, because of permissible variation in pipe wall thickness. Establish line and grade for pipe by the use of approved lasers or by transferring the cut from the offset stakes to batter boards at maximum intervals of 25 feet. If batter boards prove impractical because of trench conditions, submit other methods of grade and alignment control for approval.

402.3.01A LINE AND GRADE FOR SERVICE LINE SEWERS

The Engineer will establish line and grade to the tract of land to be serviced by the sewer system. At the preselected location of the service line, a stake will be driven into the ground showing the depth of excavation required at the property line.

Lay the pipe on a straight line and at a uniform grade between the tee and the stake. Where minimum slopes are used, lay the pipe by means of a builder's level of good quality and not less than 24 inches in length. Minimum slope shall be ¼ inch per foot unless otherwise permitted by the Engineer, but in no case less than 1/8 inch per foot.

402.3.02 PIPE DISTRIBUTION AND HANDLING

Distribute material on the job no faster than it can be used to good advantage. Unload pipe only by approved means. Do not unload pipe of any size by dropping to the ground. Do not distribute more than one week's supply of material in advance of laying, unless approved.

Inspect all pipe and fittings prior to lowering into trench to ensure no cracked, broken, or otherwise defective materials are used. Clean ends of pipe thoroughly. Remove foreign matter and dirt from inside of pipe and keep clean during and after laying.

Use approved implements, tools, and facilities for the safe and proper protection of the work. Lower pipe into the trench in such a manner as to avoid any physical damage to the pipe. Remove all damaged pipe from the jobsite. Do not drop or dump pipe into trenches.

402.3.03 PIPE LAYING & JOINTING OF PIPE & FITTINGS

402.3.03A GENERAL

Proceed with pipe laying upgrade with spigot or tongue ends pointing in direction of flow. Place pipe in such a manner as to ensure solid bearing between the pipe and the full cross-sectional area of the bedding for the full length of the pipe including the joints. Make assembly of the joint in accordance with the recommendations of the manufacturer. Take care to properly align the pipe before joints are forced entirely home. Upon completion of pipe laying all pipe joints shall be in the "home" position, which is defined as the position where the least gap (if any) exists, when the pipe components that comprise the joint are fitted together as tightly as the approved joint design will permit. Joints with gaps exceeding the normal gap in the "home" position by more than one-fourth inch shall be repaired as directed by the Engineer at no cost to the Owner. In cases where gaps exist in joints but do not exceed the normal gap by more than one-fourth inch, the Engineer may require repair of the joint if in his judgment these gaps detract significantly from the integrity of the joint, based on soil conditions and the intended use of the pipe line. For curved sewers the normal gap will be the gap existing when the pipe joints are in the "home" position as described above, for the pipe in the specified deflected position. After installation prevent movement from any cause including uplift or floating.

Take special care to prevent movement of the pipe after installation when laid within a movable trench shield.

When laying operations are not in progress, protect the open end of the pipe from entry of foreign material and block the pipe to prevent movement or creep of gasketed joints.

Plug or close off pipes which are stubbed out for manhole construction or for connection by others.

Provide all sewer pipes, 36 inches or smaller in diameter, entering or leaving manholes or other structures, with flexible joints within 18 inches of the exterior wall. Pipes larger than 36 inches in diameter shall have this flexible joint within a distance from the exterior wall equal to one-half the inside pipe diameter.

When cutting and/or machining the pipe is necessary, use only tools and methods recommended by pipe manufacturer.

When shown or approved to deflect pipe from a straight line, either in the vertical or horizontal plane, or when long-radius curves are shown, the amount of deflection allowed shall not exceed that specified or approved by the Engineer. The pipe manufacturer's recommendations will serve as a guide but the decision of the Engineer shall be final.

402.3.03B CONCRETE PIPE

Use rubber ring gasket joints unless mortar joints are specifically specified. When mortared joints are used, the entire joint for the full circumference of the pipe shall be completely filled with mortar. The surfaces of the pipe joint shall be brushed clean prior to mortaring. Fill the exterior of the joint with mortar and in the case of bell and spigot joints, fill to an angle of 45 degrees.

Lay elliptical reinforced pipe so that the top or bottom marks are not more than 5 degrees from a vertical plane.

402.3.03C CORRUGATED METAL PIPE

Repair all damaged areas of the protective coating with material similar to the original as approved and permit to dry or solidify before backfilling.

402.3.04 PERFORATED PIPE UNDERDRAINS

402.3.04A TRENCH EXCAVATION AND BACKFILL

Conform to applicable requirements in Section 204 EXCAVATION, EMBANKMENT, BEDDING AND BACKFILL.

402.3.04B PIPE BEDDING

Provide a minimum 4-inch bedding of Special Filter Material under perforated drain pipe, or as shown. Hand grade the bedding to proper grade ahead of pipe laying. Provide a firm, unyielding support along the entire pipe length.

402.3.04C BACKFILL AT THE PIPE ZONE

Backfill the pipe zone with Special Filter Material, hand placed simultaneously on both sides of the pipe for the full trench width and hand tamp with approved tamping sticks supplemented by "walking in" and slicing with a shovel.

402.3.04D BACKFILL ABOVE THE PIPE ZONE

Use Special Filter Material for backfill above the pipe zone, unless otherwise specified.

402.3.04E LAYING AND JOINTING PERFORATED PIPE

Securely fasten together perforated pipe with couplings, fittings, or bands as specified by the manufacturer for the type of pipe used. Close upgrade ends of all subsurface drain pipe with approved plugs to prevent entry of soil materials.

Begin pipe laying normally at the outlet end of the pipe line. The lower segment of pipe shall be in contact with the shaped bedding throughout its full length. Bell or groove ends of rigid pipe and outside circumferential laps of flexible pipe shall be placed facing the upgrade end.

Lay all perforated pipe, except perforated PVC drain pipe, with perforations facing down, unless otherwise specified or directed. Place perforated PVC Drain Pipe with slots facing up.

Inspect all pipe prior to lowering into the trench and, if necessary, clean of any material tending to plug the perforations of the pipe. Have available the proper tools, labor and equipment for efficient execution of the work. Carefully lower all pipe and fittings into the trench to avoid any contamination of the filter bedding material.

402.3.05 MONOLITHIC CONCRETE PIPE

402.3.05A INVERT PLACING

Form the invert portion or base of the pipe between templates spaced at approved intervals to form convenient sections for construction.

Mix the concrete dry enough to stand in place after being tamped and wet enough to be dense without excessive tamping. When specified, bring the surface of the concrete in the invert to proper distance below the flow line to allow for invert lining.

402.3.05B BARREL PLACING

After the invert of the pipe is constructed, place the remaining portion of the barrel between transverse joints in one continuous operation.

402.3.05C LONGITUDINAL JOINTS

Place longitudinal construction joints and keyways as shown or as approved.

402.3.05D TRANSVERSE JOINTS

When not shown on the plans, locate and construct transverse construction joints with keyways in order to minimize and localize transverse cracking due to contraction of the concrete. Provide transverse joints at intervals not exceeding 40 feet. The position of construction joints in the invert and the remainder of the pipe barrel shall coincide.

402.3.05E CONNECTIONS TO EXISTING PIPES

Make connections to existing pipes, manholes, and other structures watertight, with smooth flow surfaces and curves, and conforming to applicable requirements of Section 404 WORK ON EXISTING SEWERS AND STRUCTURES.

402.3.05F TESTS OF WORKMANSHIP

Monolithic pipes shall be substantially tight against leakage from either the inside or outside and shall pass all required tests prior to acceptance. Upon completion and prior to final acceptance, correct any visible leaks to the satisfaction of Engineer by grouting or other approved means. Cut out any cracks other than hairline cracks visible from the inside to a depth permitting caulking and caulk with neat cement or lead wool.

402.3.06 INSTALLATION OF SERVICE LINE SEWERS, TEES AND WYES

Install tee and wye fittings and service line sewers as shown on the Standard Plans. Provide a compacted crushed aggregate base of pipe bedding material under all tees and wyes and branch fittings, extending to the springline of the fittings. Place bases on undisturbed native material or compacted foundation stabilization material.

Maximum deflection permissible with any one fitting shall not exceed 45 degrees and shall be accomplished with long-radius curves or bends, except when approved.

Connect service lines to manholes only when directed. Make the connection so the standard pipe joint is located not more than 1.5 feet from the structure.

Provide ends of all service lines and fittings with approved watertight plugs, caps, or stopper, suitably braced to prevent blowoff during internal hydrostatic or air testing. Such plugs or caps shall be removable and their removal shall provide a socket suitable for making a flexible joint lateral connection or extension.

402.3.07 MARKERS

In new subdivisions and undeveloped areas where applicable, after the service line pipe is installed, block the capped or plugged end and install marker. Extend markers at least 12 inches above the ground surface. Paint the top portion of the marker after its installation with first-quality white, quick-drying enamel. After the paint has dried, use black, quick-drying enamel and neatly indicate the distance from the natural ground surface to the top of the service line pipe in feet and inches.

Take precautions during the backfilling operation to ensure the position and location of the marker. If the marker is broken or knocked out of vertical alignment during the backfilling operation, reopen the trench and replace the marker. Omit markers in developed areas where installing the marker is not feasible, as determined by the Engineer.

402.3.08 FLARED END SECTIONS

Construct flared end sections in accordance with the details and dimensions shown, except that minor variations may be accepted to permit the use of the manufacturer's standard prefabricated sections and methods of fabrication. Conform excavation, bedding and backfill to applicable requirements herein for the adjacent pipe or drain to be joined.

402.3.09 CONCRETE CLOSURE COLLARS

Use concrete closure collars only when specified or approved. Construct in conformance with the details provided. Wash pipe to remove all loose material and soil from the surface on which the concrete will be placed. Wet nonmetallic pipe thoroughly prior to pouring the collars. Construct forms with materials that will ensure that no concrete shall enter the line. Make entire collar in one pour, and do not pour collars in water. After the collars are poured and have taken their initial set, cure by covering with well-moistened earth. Do not backfill the trench until the concrete has sufficient strength as determined by the Engineer.

402.3.10 DEEP CONNECTION RISERS

Where the slope of the service line between the curb and the wye or tee on the sewer is greater than forty-five degrees, construct a deep connection riser in conformance with the details shown on the Standard Plan. The concrete foundation for supporting deep connection risers shall bear upon firm native ground. Avoid any concentrated load on the main sewer pipe.

Construct laying and jointing of the vertical pipe for encasement in concrete as specified herein, including the sealing of unused tee or wye branches at the top of the connection.

Backfill around vertical pipe connections by compacting approved materials in eight (8) inch layers with mechanical tampers. Backfill from a wide base foundation and slope up evenly to the top of the deep connection, to provide a compacted subgrade for the service line pipe.

402.3.11 CULVERTS

Remove and replace culverts in conformance to all applicable requirements of this section and Section 204 EXCAVATION, EMBANKMENT, BEDDING AND BACKFILL.

402.3.12 DISCONNECTION AND RECONNECTION OF EXISTING SERVICE LINES

When shown or directed, disconnect existing service lines from existing sewers and reconnect them to the new sewers. Be responsible for locating the existing service lines prior to installing the tee or wye in the new sewerline.

402.3.13 FIELD FABRICATED CONNECTIONS

Field fabricate tees or wyes for required connections when shown or directed. Make all field fabricated tees or wyes similar to approved manufacturer supplied tees or wyes and provide for a flexible joint at the point of connection to the tee or wye. Do not allow tee or wye to protrude past the inside wall surface of the sewer pipe, and finish the inside wall surface of the sewer pipe to provide a smooth surface for uninhibited flow through the sewer. Fabricate fittings by inserting a stub into a hole cut in the pipe and grout with a nonshrinking grout. Coat surfaces to receive grout with an epoxy bonding agent prior to grouting. Fabrication details for fittings shall be submitted for and approval obtained prior to fabrication.

402.3.14 TESTING SEWERS

402.3.14A GENERAL

All gravity sanitary sewers including service line sewers and appurtenances shall successfully pass a hydrostatic or air test prior to acceptance and shall be free of visible leakage. In general, use either method of testing. Manholes shall be tested as specified in Section 403 MANHOLES, INLETS, AND CONCRETE STRUCTURES.

All pressure sewers shall be tested in accordance with Section 501 WATER PIPE AND FITTING, when not otherwise specified.

All gravity storm sewers including service line sewers and appurtenances shall successfully pass all tests required for sanitary sewers with the exception of the hydrostatic or air test. In general, storm sewers will not be tested by the hydrostatic or air test. Storm sewers shall be free of visible leakage. When the quality of materials used or workmanship performed during the construction of storm sewers is in doubt for any reason, the Engineer may require the storm sewer and all applicable appurtenances to be tested. When so ordered, the storm sewer shall be required to pass the same hydrostatic or air test specified hereafter for sanitary sewers.

402.3.14B WATER AND EQUIPMENT FOR TEST

Make all arrangements for furnishing water from the nearest hydrant or other approved source for testing purposes. Perform the tests and provide personnel, hoses, tank trucks, plugs, and other necessary equipment to complete the tests at no cost to the Owner. The method, equipment and personnel shall be subject to approval by the Engineer.

402.3.14C CLEANING PRIOR TO TESTING AND ACCEPTANCE

Prior to final testing, acceptance and final manhole-to-manhole inspection of the sewer system by the Engineer, flush and clean all parts of the system. Remove all accumulated construction debris, rocks, gravel, sand, silt and other foreign material from the sewer system at or near the closest downstream manhole. If necessary, use mechanical rodding or bucketing equipment.

Upon the Engineer's final manhole-to-manhole inspection of the sewer system, if any foreign matter is still present in the system, reflush and clean the sections and portions of the lines as required.

402.3.14D TESTING PROCEDURE

Perform the tests in a manner satisfactory to the Engineer. Any arrangement of testing equipment which will provide observable and accurate measurements of either air or water leakage under the specified conditions will be permitted. Calibrate gauges for air testing with a standardized test gauge provided by the Engineer at the start of each testing day. The calibration shall be witnessed by the Engineer; notify him prior to each test.

403.2.14E TIME OF TEST

Make tests of sections of constructed sanitary sewer for acceptance only after all service connections, manholes, backfilling and compaction are completed between the stations to be tested. Unless otherwise approved, do not allow testing of completed sections of sewer between manholes to lag more than one completed section behind the work in progress. Owner may require testing of manhole-to-manhole sections as they are completed in order to expedite the acceptance of sections of sewer and allow connections prior to the whole system being completed.

402.3.14F REPAIRS

Repair or replace, in a manner approved by the Engineer, any section of pipe not meeting the air or hydrostatic test requirements, or which has visible leakage.

Infiltration of ground water in an amount greater than herein specified, following a successful hydrostatic or air test as specified, shall be considered as evidence that the original test was in error or that subsequent failure of the pipeline has occurred. Correct such failures occurring within the warranty period in a manner approved by the Engineer at no expense to the Owner.

The Contractor, in contracting to do this work, agrees that the leakage allowances as indicated herein are fair and practical.

402.3.14G HYDROSTATIC TESTING

Pipe and joints shall sustain a maximum limit of 0.3 gallon per hour per inch diameter per 100 feet when field tested by either infiltration or exfiltration methods. The hydrostatic head for test purposes shall exceed the maximum estimated ground water level in the section being tested by at least 72 inches and in no case shall be less than 72 inches above the inside top of the highest section of pipe in the test section, including service connections. In every case, determine the height of the water table at the time of the test by exploratory holes or such other methods approved by the Engineer. The Engineer shall make the final decisions regarding test height for the water in the pipe section best tested. The length of pipe tested by exfiltration shall be limited so that the pressure on the invert of the lower end of the section shall not exceed 16 feet of water column.

Make an allowance of 0.2 GPH per foot of head above the manhole invert for each manhole included in a test section. If the test produces more than the allowable leakage, test manholes and

sewer lines separately.

All service connection footage included in the test section and subjected to the minimum head specified shall be taken into account in computing allowable leakage.

The pipe test section may be filled 24 hours prior to the time of exfiltration testing to permit normal absorption into the pipe wall to take place.

Use air test when the elevations of various sections of the sewer between manholes is such that the above criteria cannot be met.

402.3.14H AIR TESTING

General

The Engineer may, at any time, require a calibration check of the instrumentation used. Use a pressure gauge having minimum divisions of 0.10 psi and an accuracy of 0.0625 psi. (One ounce per square inch.) All air used shall pass through a single control panel.

All plugs used to close the sewer for the air test must be capable of resisting the internal pressures and must be securely braced. Place all air testing equipment above ground and allow no one to enter a manhole or trench where a plugged sewer is under pressure. Release all pressure before the plugs are removed. The testing equipment used must include a pressure relief device designed to relieve pressure in the sewer under test at 10 psi or less and must allow continuous monitoring of the test pressures in order to avoid excessive pressure. Use care to avoid the flooding of the air inlet by infiltrated ground water. (Inject the air at the upper plug if possible.) Use only qualified personnel to conduct the test.

Ground Water

The presence of ground water will affect the results of the test. Determine the average height of ground water over the sewer immediately before starting the test; the method of checking the ground water height shall be as approved.

Method

Use the Time-Pressure Drop Method for all air testing. The test procedures are described as follows:

1. Clean the sewer to be tested and remove all debris where noted.
2. Wet the sewer prior to testing, if desirable.
3. Plug all sewer outlets with suitable test plugs. Brace each plug securely.
4. Check the average height of the ground water over the sewer. The test pressures required below shall be increased 0.433 psi for each foot of average water depth over the sewer.
5. Add air slowly to the section of sewer being tested until the internal air pressure is raised to 4.0 psig greater than the average back pressure of any ground water that may submerge the pipe.
6. After the internal test pressure is reached, allow at least 2 minutes for the air temperature to stabilize, adding only the amount of air required to maintain pressure.
7. After the temperature stabilization period, disconnect the air supply.
8. Determine and record the time in seconds that is required for the interal air pressure to drop from 3.5 psig to 2.5 psig greater than the average back pressure of any ground water that may submerge the pipe.
9. Compare the time recorded in step 8 with the time required as determined hereinafter.

Acceptance

The sewer shall be considered acceptable when tested as described hereinbefore, if the section under test does not lose air at a rate greater than (1) 0.003 cfm per square foot of internal sewer surface, or (2) 2 cfm, whichever is greater.

If the sewer fails to meet these requirements, determine the reason for leakage and repair or replace all defective materials or workmanship, all at no expense to Owner. The completed sewer shall meet the requirements of this test before being considered acceptable.

This specification shall also be considered as satisfied if the time as measured by the preceding described method is not less than the time as computed according to the following procedure:

1. Record the diameter in inches and the length in feet of all pipe in the section to be tested, including the house branches, in a table similar to the one shown below:

Diameter Inches	Length Feet	$K = 0.011\ d^2L$	$C = 0.0003882dL$
	Total		

Time required by Specification = _____ Seconds.
Actual time as determined by test = _____ Seconds.

2. Using the nomograph supplied by Engineer, place a straightedge from the "d" column (diameter in inches) to the "L" column (length in feet). Read the corresponding "K" and "C" values and record them in the table.

3. Add all values of "K" and all values of "C" for the section being tested.

4. If the total of all the "C" values is less than one, the time required by the Specifications shall be the total of the "K" values.

5. If the total of all the "C" values is more than one, the time required by the Specifications shall be found by dividing the total of all the "K" values by the total of all the "C" values. The quotient is the time required by the Specifications. To make this division with the nomograph use the scales "C" and "K" and read the quotient (time) from the "t_q" scale.

6. In the event that the "d' and "L" values for a particular section of sewer do not fall within the limits of the nomograph the values of "K" and "C" may be computed from the following equations: "K" = $0.011\ d^2L$; "C" = $0.0003882dL$. Use tables and nomographs supplied by Engineer.

402.3.15 DEFLECTION TEST FOR PVC AND ABS PIPE

In addition to hydrostatic or air testing, do a deflection test to all sanitary sewers, storm drains and culverts constructed of PVC or ABS pipe not less than 30 days after the trench backfill and compaction has been completed. The test shall be conducted by pulling an approved solid pointed mandrel through the completed pipeline. The diameter of the mandrell shall be 95 percent of the pipe diameter unless otherwise specified by the Engineer. Conduct testing on a manhole-to-manhole basis and only after the line has been completely flushed out with water. Locate and repair any sections failing to pass the test and to retest the section, at no expense to Owner.

402.3.16 TELEVISION INSPECTION OF SEWERS

Upon completion of all sewer construction, sewer repairs, and required tests, notify the Engineer that all sewers are ready for televiewing inspection.

Subsequent to being notified, the Owner shall commence examination of the sewers at no expense to the Contractor, or may waive the television inspection. Findings will be recorded and then correct all deficiencies at no expense to the Owner.

Upon correction of deficiencies revealed by televiewing, notify the Engineer; the same steps listed above may be repeated until all work is acceptable.

402.4.00 MEASUREMENT AND PAYMENT

402.4.01 SEWER PIPE

Measurement and payment for conduits and sanitary and storm sewer pipe, including culverts, pressure line sewers and pipe stubouts from manholes, will be made on a linear foot basis for the various classes, types and sizes of pipe listed in the Proposal and as actually installed. All pipe except service line pipe will be measured horizontally from center-to-center of manholes or to the ends of the pipe, whichever is applicable. No deductions will be made for fittings or for structures.

Measurement and payment for service line pipe will be made on a linear foot basis for the type and size of pipe installed as shown in the Proposal. Length will be measured as total length of pipe installed, commencing at the point of connection to the tee, wye, manhole or pipe as applicable and terminating at the end of the pipe bell, including all fittings, measured along the pipe centerline.

Payment shall constitute full compensation for the pipe in place, including testing, plugs and the markers for service line pipe.

Measurement and payment for disconnecting and reconnecting existing service lines will be made on the same basis as payment for service line pipe, and the footage required will be included in the total footage for service line pipe as shown in the Proposal.

Payment for new tees, wyes or field taps, permanent seals, and concrete closure collars if required, will be made separately under the respective items shown in the Proposal.

402.4.02 PERFORATED PIPE UNDERDRAINS

Measurement and payment for perforated drain pipe will be made on a lineal foot basis for the type and size of pipe installed as shown in the Proposal. Length will be measured as total length of pipe installed, including fittings measured along the pipe centerline. Payment shall constitute full compensation for trench excavation, special filter material for pipe bedding and trench backfill, and all other work specified to complete the installation of the perforated drain pipe complete in place.

402.4.03 FLARED END SECTIONS

Measurement and payment for flared end sections will be made on a unit price basis for each type and size actually installed as shown in the Proposal. Payment shall include full compensation for the flared end section complete in place including concrete cutoff walls and toe plates, when required.

402.4.04 TEE AND WYE FITTINGS

Measurement and payment for service tees and wyes installed in the sewer lines will be made at the unit price for each size and type as shown in the Proposal and actually installed. Since no deduction will be made under the payment item for Pipe for the length of the tee or wye, the unit price for tee and wye fittings shall include only the additional cost of furnishing and installing the tee or wye fitting, over the cost of furnishing and installing an equivalent straight run of

pipe. Payment will include full compensation for pipe plugs, stoppers or caps installed.

402.4.05 CONCRETE CLOSURE COLLARS

Measurement and payment for concrete closure collars will be made at the unit price each as shown in the Proposal and actually constructed. Payment shall include full compensation for all materials, equipment and labor necessary to complete the work.

402.4.06 DEEP CONNECTION RISERS

Measurement and payment for deep connection risers will be made on a linear foot basis. Measurement will be made from the bottom of the concrete foundation to the top of the highest pipe of the deep connection riser which is encased or partially encased in concrete. Payment shall include full compensation for the encased pipe including all fittings complete in place.

402.4.07 FIELD FABRICATED CONNECTIONS

Measurement and payment for field fabricated connections will be made at the unit price each for the type and size as shown in the Proposal. Payment shall include full compensation for all materials, equipment and labor necessary to complete the work.

403 MANHOLES, INLETS AND CONCRETE STRUCTURES

403.1.00 DESCRIPTION

This section covers the work necessary for the construction of the following items:

1. Manholes
2. Drop Assemblies
3. Sumps
4. Inlets and Catch Basins
5. Anchor Walls
6. Special Concrete Structures
7. Concrete Encasement

403.2.00 MATERIALS

403.2.01 BASE ROCK AND DRAIN GRAVEL

One and one-half inch minus base rock, conforming to the requirements for aggregate base material in Section 303 AGGREGATE BASES. Drain gravel shall conform to Subsection 204.2.06B BANK-RUN AND RIVER-RUN GRAVEL.

403.2.02 FORMS

Forms for exposed surfaces shall be steel or plywood. Others shall be matched boards, plywood or other approved material. Form all vertical surfaces. Trench walls, large rock or earth will not be approved form material.

403.2.03 MANHOLES

403.2.03A STANDARD PRECAST MANHOLE SECTIONS

Furnish sections as specified conforming to the details on the Standard Plans and to ASTM C 478. Cones shall have same wall thickness and reinforcement as manhole section. Top and bottom of all sections shall be parallel.

Prior to the delivery of any size of precast manhole section on the jobsite, yard permeability tests will be conducted at the point of manufacture. The precast sections to be tested will be selected at random from the stockpiled material which is to be supplied for the job. All test specimens will be mat tested, and shall meet the permeability test requirements of ASTM C 14 and ASTM C 497.

403.2.03B STANDARD MONOLITHIC MANHOLES

Conform to details on the Standard Plans.

403.2.03C PRECAST CONCRETE BASES

When specified or approved by the Engineer, precast base sections may be used provided all details of construction are approved prior to construction. Base sections shall have the base slab integral with sidewalls. Base slab shall be 6 inches thick with No. 4 reinforcing bars, 8-inch centers, both directions in center of slab. Tie reinforcing steel to wall steel with minimum lap of 24 bar diameters but in no case less than 12 inches.

403.2.03D MANHOLE GRADE RINGS

Concrete grade rings for extensions shall be a maximum of 6 inches high and shall be approved before installation.

403.2.03E JOINTING MATERIALS

When approved, preformed plastic gaskets conforming to the requirements of Federal Specification

SS-S-00210, and other types of jointing materials approved by the Engineer, may be used in lieu of mortar type joints.

403.2.03F METAL MANHOLES

Where corrugated metal manholes are shown or specified, submit shop drawing by the manufacturer for approval prior to shipment.

403.2.03G MANHOLE STEPS

Steps shall be 3/4 inch diameter structural steel conforming to ASTM A 36 and galvanized in accordance to ASTM A 123. Steps shall be safety type 12" x 8" x 2" pattern as shown on the Standard Plans.

403.2.04 PIPE AND FITTINGS

Conform to requirements of Section 402 PIPE AND FITTINGS (SANITARY AND STORM SEWERS).

403.2.05 PRECAST INLETS AND CATCH BASINS

Precast units may be used in lieu of cast in place units when approved by the Engineer. Details of proposed units shall be submitted for approval. Concrete risers for extensions shall be a maximum of 6 inches in height and of the same quality as the main section. Risers shall only be used where approved.

403.2.06 PRECAST SUMP

Conform to requirements shown on the Standard Plans and the applicable requirements herein for precast units and drain gravel.

403.2.07 MANHOLE FRAMES AND COVERS

403.2.07A GENERAL

All castings shall be true to size, weight and tolerances shown on the Standard Plans. Delivered weight shall be ±5 percent of the specified weight. The bearing seat shall not rock when checked by the test jig. The foundry shall supply all test gauges and shall not subcontract any of the work other than testing procedure, patterns, machining and cartage. The casting shall not be made by the open mold method and shall be free of porosity, shrink cavities, cold shuts or cracks, or any defects which would impair serviceability. Repair of defects by welding, or by the use of "smooth-on" or similar material will not be permitted. All castings shall be shot or sandblasted and the application of paint or other coating will not be permitted. Each casting shall have distinctly cast upon it the initials of the manufacturer and the year of the cast. These characters shall be minimum 1¼-inch in height and 1/8-inch in relief.

403.2.07B MATERIALS

Conform to ASTM A 48, Class 30B, with the following revisions:

Tensile Strength	30,000 psi
Traverse Strength: (1.2" dia. bar - 18" centers)	
Load - Pounds	2,600 - 3,000
Deflection - Inches	0.22 - 0.34
Brinell Hardness (as cast)	173 - 200

The Foundry shall certify as to the tensile and traverse properties and the Brinell Hardness. The Owner reserves the right to require a Rough Transverse bar (Size of bar 1.2" dia. by 20" long) and/or a tensile bar as per ASTM A 48 for each 20 castings or heat when less than 20 castings are made.

403.2.07C INSPECTION

Notify the Owner at least 24 hours in advance of casting the units or bars. At least 24 hours' notice shall also be given prior to final gauging and inspection. When directed, the following strength test shall be made on the manhole cover. The cover, while resting in its frame, shall sustain a concentrated load of 40,000 lbs applied at its center through a 2½-inch plug. The Engineer may, at any time, require up to 5 percent of the job and/or order and in no case less than one (1) cover to be tested in this manner. In case of failure during the test, additional covers shall be furnished until the tests prove satisfactory. All covers that pass this test will be returned. The Owner will not be responsible for those that fail the test.

403.2.07D CAP SCREWS

Cap screws and washers for tamperproof and watertight manhole covers shall be stainless steel with 60,000 psi minimum tensile strength conforming to ASTM A 453.

403.2.08 STANDARD FRAMES AND GRATES FOR INLETS AND CATCH BASINS

Frames and grates for catch basins and storm drain inlets shall be fabricated of steel conforming to ASTM A 7, A 36 or A 373 in accordance with the details shown on the Standard Plans. All

connections shall be welded. Welding shall conform to requirements of current code for welding in building construction of the American Welding Society. Frames and gratings shall be tested one within the other and there shall be no more than 1/16-inch rock. When checked by a test jig, the bearing seat of either component shall have no more than 1/16-inch rock. Test jigs shall be furnished by the manufacturer.

403.3.00 CONSTRUCTION

403.3.01 GENERAL

403.3.01A EXCAVATION AND BACKFILL

Conform to applicable provisions in Section 204 EXCAVATION, EMBANKMENT, BEDDING AND BACKFILL. Backfill around manholes and other sewer appurtenances shall be of the same quality as the trench backfill immediately adjacent.

403.3.01B BASE ROCK

When specified or directed, place crushed aggregate base rock thoroughly compacted to the required thickness and density.

403.3.01C FOUNDATION STABILIZATION

If material in bottom of excavation is unsuitable for supporting manholes and other sewer appurtenances, excavate below subgrade as directed and backfill to required grade with rock, conforming to Foundation Stabilization in Section 204 EXCAVATION, EMBANKMENT, BEDDING AND BACKFILL.

403.3.02 MANHOLES

Construct manholes as shown on the Detail Drawings or Standard Plans. Densify the concrete base by vibrating or working as approved and screed to provide a level, uniform bearing for precast sections or formed wall extensions.

Deposit sufficient mortar on base to assure watertight seal between base and manhole wall or place the first precast section of manhole in concrete base before concrete has set, if preferred. First section shall be properly located and plumb.

When placing precast manhole sections, clean ends of sections of foreign material and thoroughly wet joint with water prior to placing mortar. Place mortar on groove of lower section. Set next section in place. Fill joint completely with mortar of the proper consistency. Trowel interior and exterior surfaces smooth on standard tongue-and-groove joints. Wipe or otherwise clean the excess mortar from the inside of the keylock joint.

When the keylock joint is used, it is the intent that the void between the tongue-and-groove be completely filled with mortar and that the interior and exterior end faces of the section to be placed seat fully on the previously placed section.

Prevent mortar from drying out and cure by applying an approved curing compound or comparable approved method. Chip out and replace all cracked or defective mortar. Other types of jointing materials may be used in lieu of mortar only when approved by the Engineer. Preformed plastic gaskets shall be installed in strict accordance with the manufacturer's recommendations. Only pipe primer furnished by the gasket manufacturer will be approved. When using preformed plastic gaskets, manhole sections with chips or cracks in the jointing surfaces shall not be used. Completed manholes shall be rigid and all manholes for sanitary sewers shall pass the hydrostatic test. Construct manhole inverts in conformance with the Standard Plans with smooth transitions to ensure an unobstructed flow through manhole. Where a full section of pipe is laid through a manhole, break out the top section and cover exposed edge of pipe completely with mortar. Trowel all mortar surfaces smooth.

403.3.03 DROP ASSEMBLIES

Construct drop assemblies at locations indicated and as shown on the Standard Plans.

403.3.04 PIPE STUBOUTS FROM MANHOLES

Install stubouts from manholes as shown or directed. Grout pipes into manhole walls or manhole base to provide watertight seal around pipes.

403.3.05 MANHOLE GRADE RINGS

Install grade rings as shown on Standard Plans to the height directed. Lay grade rings in mortar with sides plumb and tops level. Seal joints with mortar as specified for manhole sections. Extensions shall be watertight.

In general, manhole grade rings will be used on all manholes in streets or roads or in other locations where a subsequent change in existing grade may be likely. Extensions will be limited to a maximum height of 12 inches. Finish grade for manhole covers shall conform to finished ground or street surface unless otherwise directed.

403.3.06 MANHOLE FRAME AND COVERS

Set frames in a bed of mortar with the mortar carried over the flange of the frame as shown on the Standard Plans. Set frames so tops of covers are flush with surface of adjoining pavement or ground surface, unless otherwise shown or directed.

403.3.07 HYDROSTATIC TESTING

This item of work pertains in general to sanitary sewers. See Subsection 402.3.14 TESTING SEWERS.

When, in the judgment of the Engineer, the ground water table is too low to permit visual detection of leaks, manholes shall be hydrostatically tested. The test shall consist of plugging all inlets and outlets and filling the manhole with water to a height determined by the Engineer. Leakage in each manhole shall not exceed 0.2 gallon per hour per foot of head above the invert. A manhole may be filled 24 hours prior to time of testing, if desired, to permit normal absorption into the manhole walls to take place. Repair all manholes that do not meet the leakage test, or are unsatisfactory from visual inspection, to conform to the requirements herein.

403.3.08 MONOLITHIC CONCRETE CONSTRUCTION

Conform to details shown on the Detail Drawings or Standard Plans and with applicable provisions herein.

Remove and keep all water clear from the excavation. Construct forms to the dimensions and elevations required. Forms shall be tight and well braced. Remove all water and foreign material from the forms prior to placing the concrete. Moisten forms just prior to placement. Bar splices shall be 24 diameters, but in no case less than 12 inches. Wire tie all splices and intersections. Obtain approval prior to placing any concrete. Place concrete so that there is no segregation of the aggregate and vibrate or work concrete as approved to prevent rock pockets. Do not place concrete when the ambient temperature is below 40 degrees F without special protection as approved. Screed the top surface of the exposed slabs and trowel to a smooth finish free from marks or irregularities. Finish exposed edges with a steel edging tool. Cure concrete for 7 days in an approved manner. After removal of the forms, patch all rock pockets, form tie holes, and irregularities with a stiff mixture of Portland Cement and sand mixed in the same proportion as the original mix. Finish exposed walls to produce a uniform, flat surface. Protect concrete from damage during the 7-day curing period.

403.3.09 METAL MANHOLES

Conform to the details as shown on the approved manufacturer's shop drawings and to applicable provisions for manholes herein.

403.3.10 CONCRETE ENCASEMENT FOR SEWER PIPE

Conform to the requirements shown on the Standard Plans and to applicable requirements of Section 204 EXCAVATION, EMBANKMENT, BEDDING AND BACKFILL. Foundation stabilization, if required, shall be completed and the bottom of the trench compacted, as approved. Sides of encasement shall be formed, not poured against soil or rock, unless directed or approved by the Engineer.

Support pipe true to line and grade as approved before and during placement of concrete. Encasement may be placed in two lifts only with prior approval. If concrete is approved to be placed in two lifts provide a keyway on both sides of the encased pipe and vertical reinforcing bond steel as shown or as directed. Place concrete starting at the lower end of the encasement.

After concrete encasement has been placed and taken an initial set, cure by covering with well-moistened earth or backfill material for 5 days before conducting hydrostatic or air tests.

403.3.11 ANCHOR WALLS

Conform to details shown on the Standard Plan. Do not overexcavate in the areas where anchor walls are to be poured. Construct suitable forms that will allow the downhill wall to have a full bearing surface against undisturbed earth. Cure concrete for 5 days before conducting hydrostatic or air tests.

403.3.12 SPECIAL CONCRETE STRUCTURES

Conform to the details as shown and to the applicable provisions for monolithic concrete construction specified herein.

403.3.13 PLACING PRECAST UNITS

When precast units are approved, if material in bottom of trench is unsuitable for supporting unit, excavate as directed and backfill to required grade with foundation stabilization material in conformance with Section 204 EXCAVATION, EMBANKMENT, BEDDING AND BACKFILL. Set units to grade at locations shown or as directed.

403.3.14 INLET & CATCH BASIN EXTENSIONS

When approved, install extensions to height as directed. Lay risers in mortar with sides plumb and tops to grade. Joints shall be sealed with mortar, with interior and exterior troweled smooth. Prevent mortar from drying out and cure by applying an approved curing compound or other approved method. Extensions shall be watertight.

403.3.15 INSTALLATION OF INLET & CATCH BASIN FRAMES AND GRATES

Set frames and grates at elevations shown or as directed. Frames may be cast in, or shall be set in mortar. Bearing surfaces shall be clean and provide uniform contact. Anchor bolts and other fastenings shall be firmly bedded in concrete or otherwise secured as approved.

403.3.16 PRECAST SUMP
Construct Precast Sump in conformance with the Standard Plan.

403.3.17 CLEANING
Upon completion, clean each structure of all silt, debris and foreign matter.

403.4.00 MEASUREMENT AND PAYMENT

403.4.01 MANHOLES
Measurement and payment for manholes, including standard precast concrete or monolithic concrete manholes will be made on a unit price basis for each type shown in the Proposal for Manholes 8 feet deep, plus the unit price per foot shown in the Proposal for extra depth of manholes over 8 feet. No deduction will be made for depths less than 8 feet. Measurement of manhole depth will be from the top of the manhole frame and cover to the manhole invert at the center of the manhole to the nearest one-tenth of a foot. Payment shall include full compensation for excavation, foundation stabilization and/or base rock when required, backfill and constructing the manhole complete in place.

403.4.02 DROP ASSEMBLIES
Measurement and payment for drop assemblies, regardless of size, will be made on a unit price basis as shown in the Proposal for drop assemblies 0-6 feet in depth, plus the unit price per foot shown in the Proposal for extra depth over 6 feet. No deduction will be made for depths less than 6 feet. Drop assemblies will be vertically measured from the invert of the pipe at the top of the assembly to the invert of the pipe into the manhole base at the bottom of the assembly to the nearest one-tenth of a foot. Payment shall include full compensation for all materials, labor and equipment required to construct the work complete in place.

403.4.03 PIPE STUBOUTS FROM MANHOLES
Measurement and payment for pipe stubouts from manholes shall be made on a lineal foot basis in accordance to Section 402 PIPE AND FITTINGS (SANITARY AND STORM SEWERS).

403.4.04 TAMPERPROOF AND WATERTIGHT MANHOLE FRAME AND COVERS
Measurement and payment for tamperproof and watertight manhole frame and covers will be made on a unit price basis for each type installed. Since payment for furnishing and installing standard frame and covers is already included in the bid price for manholes, this unit price will include only the additional compensation for providing the watertight frame and cover complete in place.

403.4.05 CONCRETE ENCASEMENT
Measurement and payment for concrete encasement will be made on a linear foot basis as shown in the Proposal for the size pipe to be encased. Length shall be measured along the centerline of the pipe and shall be the total length of encasement actually constructed. Payment shall include full compensation for all materials, equipment and labor required to construct the work complete in place.

403.4.06 ANCHOR WALLS
Measurement and payment for anchor walls will be made on a unit price basis for each unit installed. Payment shall include full compensation for all materials, equipment and labor required to construct the work complete in place.

403.4.07 SPECIAL CONCRETE STRUCTURES
Measurement and payment for special concrete structures will be made on a lump sum each basis. Payment shall constitute full compensation for materials, equipment and labor required to construct the work complete in place.

403.4.08 CATCH BASINS AND INLETS
Measurement and payment for catch basins and inlets will be made on a unit price basis per each catch basin or inlet for the number and type actually constructed. Payment shall include full compensation for all materials, equipment and labor required to construct the work complete in place.

403.4.09 PRECAST SUMP
Measurement and payment for precast sump will be made on a unit price basis for each unit installed. Payment for pipe stubouts, if required, will be made as provided for in Section 402 PIPE AND FITTING (SANITARY AND STORM SEWERS). Payment shall include full compensation for all materials, equipment and labor required to construct the work complete in place.

404 WORK ON EXISTING SEWERS AND STRUCTURES

404.1.00 DESCRIPTION
This section covers the work necessary for joining new work to existing, the abandoning of sewerlines and structures, and adjusting of existing utility structures to finished grades, complete.

404.2.00 MATERIALS

Conform to the requirements of Section 205 MATERIALS and to the requirements for related work referred to herein.

404.3.00 CONSTRUCTION

404.3.01 EXCAVATION AND BACKFILL

Conform to requirements of Section 204 EXCAVATION, EMBANKMENT, BEDDING AND BACKFILL. Excavation shall be classified as either common or rock excavation.

404.3.02 MANHOLES OVER EXISTING SEWERS

Advise Engineer of plans for diverting sewage flow and obtain approval before starting. Approval will not relieve Contractor of responsibility for maintaining adequate capacity for flow at all times and adequately protecting new and existing work.

Construct manholes over existing operating sewerlines at locations shown. Perform necessary excavation and construct new manholes in conformance with applicable requirements of Section 403 MANHOLES, INLETS AND CONCRETE STRUCTURES.

After completion of manhole, break out the existing pipe within the new manhole, cover the edges with mortar, and trowel smooth, as approved.

Prevent broken material or debris from entering sewer flow. Maintain flow through existing sewerlines at all times. Protect new concrete and mortar for a period of 7 days after placing.

404.3.03 CONNECTION TO EXISTING MANHOLES

Provide all diversion facilities and perform all work necessary to maintain sewage flow in existing sewers during connection to the manhole. Break out existing manhole base and walls as specified or directed. Grout in new pipe to provide watertight seal, and when applicable, smooth flow into and through existing manhole as specified in Subsection 404.3.09 RECONSTRUCT MANHOLE BASE.

404.3.04 REMOVAL OF EXISTING PIPES, MANHOLES AND SEWER APPURTENANCES

Existing pipelines, manholes and sewer appurtenances which lie in the line of and are to be replaced by the new construction shall be removed from the site and disposed of as provided for in Section 203 CLEARING AND GRUBBING.

404.3.05 FILLING ABANDONED MANHOLES

Existing manholes shown to be abandoned shall be filled with granular material as specified in Section 204 EXCAVATION, EMBANKMENT, BEDDING AND BACKFILL. Compact to 95 percent optimum density as determined by AASHTO T 99. Remove manhole frame and cover and plug all pipes with permanent plugs as specified herein.

404.3.06 EXISTING MANHOLE FRAMES AND COVERS

Manhole frames and covers removed by the Contractor and not to be reused on the project shall become the property of the Owner. Notify the Engineer a minimum of one day prior to removal to arrange for picking up the removed frames and covers.

404.3.07 PERMANENT PLUGS

Clean interior contact surfaces of all pipes to be cut off or abandoned as approved. Construct concrete plug in end of all pipe 18 inches or less in diameter. Minimum length of concrete plugs shall be 8 inches. For pipe 21 inches and larger, the plugs may be constructed of common brick or concrete block. Plaster the exposed face of block or brick plugs with mortar. All plugs shall be watertight and capable of withstanding all internal and external pressures without leakage.

404.3.08 ADJUST STRUCTURES TO GRADE

Manholes, inlets, catch basins and similar structures shall be brought to the specified finished grade by methods of construction as required in Section 403 MANHOLES, INLETS AND CONCRETE STRUCTURES, and Section 206 ADJUSTMENT OF INCIDENTAL STRUCTURES TO GRADE.

Excavation necessary for bringing structures to grade shall center about the structure and be held to the minimum area as approved. At the completion of the structure adjustment, the void around the structure shall be backfilled with crushed agregate and thoroughly compacted.

404.3.09 RECONSTRUCT MANHOLE BASE

Conform to applicable requirements of Section 403 MANHOLES, INLETS AND CONCRETE STRUCTURES. Exercise caution in chipping out existing concrete base so as to prevent cracking of manhole walls. Prevent all material from entering the sewer flow. Pour new base to a minimum of six inches below the lowest projection of the pipe. Construct new channels to the elevations shown. Conform to details for channel construction in the Standard Plans. Repair any cracks which occur as a result of work operations with new grout to form a watertight seal, as approved.

404.3.10 CONNECT PIPE TO EXISTING INLETS

Conform to applicable requirements of Section 403 MANHOLES, INLETS AND CONCRETE STRUCTURES.

Break into existing inlet and grout in a watertight seal between the new pipe and inlet wall. Plaster mortar smooth inside pipe opening. Alignment, slope of pipe, and other construction details shall be as approved.

404.4.00 MEASUREMENT AND PAYMENT

404.4.01 MANHOLES OVER EXISTING SEWERS
Measurement and payment for manholes over existing sewers will be made in accordance to Section 403 MANHOLES, INLETS AND CONCRETE STRUCTURES.

404.4.02 REMOVAL OF EXISTING PIPES, MANHOLES AND SEWER APPURTENANCES
Payment for removal and disposal of existing pipes, manholes and sewer appurtenances will be considered as incidental to the work and included in the bid item for excavation and backfill as specified in Section 204 EXCAVATION, EMBANKMENT, BEDDING AND BACKFILL.

404.4.03 CONNECTION TO EXISTING MANHOLES
Measurement and payment for connection to existing manholes will be made on a unit price each basis.

404.4.04 FILLING ABANDONED MANHOLES
Measurement and payment to filling abandoned manholes will be made on a unit price each basis.

404.4.05 ADJUST STRUCTURES TO GRADE
Measurement and payment for adjusting manholes, catch basins, inlets and similar structures will be made on a unit price each basis for the type and size as shown in the Proposal.

404.4.06 RECONSTRUCT MANHOLE BASE
Measurement and payment for reconstructing manhole base will be made on a unit price each basis.

404.4.07 CONNECT PIPE TO EXISTING CATCH BASIN
Measurement and payment for connecting new pipe to existing catch basins will be made on a unit price each basis.

405 RESURFACING

405.1.00 DESCRIPTION
This section covers the work necessary to replace all pavement, pavement base, curbs, sidewalks, rock surfacing and other surface features damaged either directly or indirectly by the operations incidental to the construction of sewers, water mains, and conduits.

405.2.00 MATERIALS

405.2.01 HOT MIX ASPHALT CONCRETE
Use hot mix asphalt concrete Class C mix with AR 4000 paving asphalt. Conform to the requirements for hot mix asphalt concrete in Section 306 ASPHALT CONCRETE PAVEMENT.

405.2.02 COLD MIX ASPHALT CONCRETE
Use cold mix asphalt concrete and ½"-0 gradation with either MC 250 liquid asphalt or CRS-2 cationic emulsified asphalt. Conform to the requirements for cold mix asphalt concrete in Section 304 ASPHALT TREATED BASES.

405.2.03 ASPHALT PRIME
Liquid asphalt for use as a prime coat under asphalt concrete shall be MC 250 liquid asphalt or CRS-2 cationic emulsified asphalt.

405.2.04 SEAL AND COVER COAT
Asphalt material shall be CRS-2 cationic emulsified asphalt. Cover stone shall conform to size ¼-inch - No. 10 aggregate in Section 305 SURFACE TREATMENTS.

405.2.05 PAVEMENT BASE
Use pavement base material for resurfacing trenches which conform to Section 303 AGGREGATE BASES.

405.2.06 FORMS
All forms shall be approved by the Engineer and shall conform to requirements for forms in Section 602 CONCRETE STRUCTURES.

405.3.00 CONSTRUCTION

405.3.01 STREET MAINTENANCE
Maintain all trenches as specified under Section 204 EXCAVATION, EMBANKMENT, BEDDING AND BACKFILL.

405.3.02 TEMPORARY COLD MIX ASPHALT

When shown or directed, place and compact temporary cold mix asphalt over the approved trench areas to the depth shown or approved. Spread with an approved mechanical spreading machine, or in areas inaccessible to the spreading and finishing machine, place by hand methods. Immediately after each load is dumped, distribute into place by means of hot shovels or suitable forks and spread with hot rakes in a loose layer of uniform density.

After spreading, the mixture shall be thoroughly and uniformly compacted with an approved power-driven roller as soon after being raked as it will bear the roller without undue displacement. Roll longitudinally at the sides and proceed toward the center of the pavement overlapping on successive trips by at least one-half the width of the roller. Alternate trips of the roller shall be of slightly different lengths. The speed of the roller shall at all times be slow enough to avoid displacement of the mixture, and any displacements occurring from any cause shall at once be corrected by the use of rakes and of fresh mixture where required. Roll continuously until all roller marks are eliminated and no further compaction is possible. Compact areas inaccessible to the roller by tamping with hot iron tampers. After compaction, the temporary cold mix asphalt shall have the thickness shown or approved and conform to the grade as directed.

405.3.03 ASPHALT CONCRETE PAVEMENT

405.3.03A PRIME AND TACK COAT

When specified, after the pavement base has been compacted, apply asphalt prime coat at an approved rate to the surface of the leveling course. Tack coat all edges of existing pavement, manhole and cleanout frames, inlet boxes and like items.

405.3.03B ASPHALT CONCRETE PLACEMENT

Trim existing pavement to a straight line to remove any pavement which has been damaged or which is broken and unsound. Provide a smooth, sound edge for joining the new pavement.

Place the asphalt concrete on the prepared subgrade over the trench to the specified depth, and when not specified, to a depth of not less than 2 inches or the depth of the adjacent pavement, whichever is greater. When a prime coat is specified, place asphalt concrete after the prime coat has set. Maximum thickness for any one lift of pavement shall not exceed 2½ inches. Spread and level the asphalt concrete with hand tools or by use of a mechanical spreader, as approved, depending upon the area to be paved. Bring the asphalt concrete to the proper grade and compact by rolling or the use of hand tampers where rolling is impossible or impractical.

Roll with power rollers capable of providing compression of 200 to 300 pounds per linear inch. Begin the rolling from the outside edge of the replacement progressing toward the existing surfacing, lapping the existing surface at least ½ the width of the roller. If existing surfacing bounds both edges of the replacement, begin rolling at the edges of the replacement, lapping the existing surfacing at least ½ the width of the roller, and progress toward the center of the replacement area. Overlap each preceding track by at least ½ the width of the roller and make sufficient passes over the entire area to remove all roller marks and to produce a smooth, uniform surface as directed.

Make the finished surface of the new compacted paving flush with the existing surface and conform to the grade and crown of the adjacent pavement, as directed.

Immediately after the new paving is compacted, paint all joints between new and original asphalt pavement with approved hot asphalt or asphalt emulsion and cover with dry paving sand before the asphalt solidifies.

405.3.03C SEAL AND COVER COAT

When shown or specified, apply a seal coat to all asphalt surfaces replaced. Extend the seal coat a minimum of 6 inches beyond the new pavement onto the existing surfacing. Workmanship and application rate shall conform to Section 305 SURFACE TREATMENTS.

405.3.03D SURFACE SMOOTHNESS

The surface smoothness of the replaced pavement shall be such that when a straightedge is laid across the patched area between the edges of the old surfacing and the surface of the new pavement, the new pavement shall not deviate from the straightedge more than ¼ inch provided surface drainage is maintained. Areas which contain depressions that impound water shall be replaced.

405.3.03E WEATHER CONDITIONS

Do not apply asphalt during rainfall, sand or dust storms, or before imminent storms that might adversely affect the construction. The Engineer will determine when surfaces and material are dry enough to proceed with construction. Asphalt concrete shall not be placed when the atmospheric temperature is lower than 40 degrees F, or when the surface upon which it is to be placed is frozen. Do not apply asphalt for prime coat when the surface temperature is less than 50 degrees F. Exceptions will be permitted only in special cases and only with prior written approval.

405.3.03F PROTECTION OF STRUCTURES

Provide whatever protective coverings may be necessary to protect the exposed portions of bridges, culverts, curbs, gutters, posts, guard fences, road signs, and any other structures from

splashing oil and asphalt from the paving operations. Remove any oil, asphalt, dirt, or any other undesirable matter that may come upon these structures by reason of the paving operations, as approved.

Where water valve boxes, manholes, catch basins, or other underground utility appurtenances are within the area to be surfaced, make the resurfacing level with the top of the existing finished elevation of these facilities. If it is evident that these facilities are not in accordance with the proposed finished surface, notify the Engineer to have the proper authority contacted in order to have the facility altered before proceeding with the resurfacing around the obstruction, unless otherwise approved. Consider any delays experienced from such obstructions as incidental to the paving operation. No additional payment will be made. Protect all covers during asphalt application.

405.3.03G EXCESS MATERIALS

Dispose of all excess materials as approved. Make arrangements for the disposal and bear all costs or retain any profit incidental to such disposal.

405.3.04 PORTLAND CEMENT CONCRETE PAVEMENT

Pavement replaced shall be the same thickness as that removed, or a minimum of 6 inches. Protect the newly placed concrete from traffic for a period of 7 days.

Handle, place, finish and cure concrete pavement in conformance with the applicable provisions of Section 307 PORTLAND CEMENT CONCRETE PAVEMENT.

405.3.05 PAVEMENT BASE

Place pavement base to the specified depth; when not specified, place to a compacted depth of 12 inches. Bring the top of the pavement base to a smooth, even grade at a distance below finished grade equivalent to the required pavement depth.

Compact the pavement base with mechanical vibratory or impact tampers to a density of not less than 95 percent of the maximum density as determined by AASHTO T 99.

405.3.06 ROCK SURFACING

Place rock surfacing only where shown or directed on streets, driveways, parking areas, street shoulders, and other areas disturbed by the construction. Rock surfacing shall be 1½-inch or 3/4-inch minus crushed aggregate, as directed. Spread the rock by tailgating and supplement by hand labor where necessary. Level and grade the rock surfacing to conform to adjacent existing grades and surfaces as directed.

405.3.07 CONCRETE DRIVEWAYS, SIDEWALKS AND CURBS

Replace concrete driveways, sidewalks and curbs to the same section, width, depth, line and grade as that removed or damaged. Saw broken or jagged ends of existing concrete on a straight line and to a vertical plane. Place new concrete only on approved compacted trench.

When directed, replace concrete driveways and sidewalks between scored joints. Make replacement to prevent a patched appearance. Provide a minimum 2-inch thick compacted leveling course of clean 3/4-inch minus crushed aggregate.

Construct forms to match existing. Place concrete and finish exposed surfaces similar to adjacent surface in conformance with Section 308 CURBS, GUTTERS, DRIVEWAYS, SIDEWALKS AND PATHWAYS.

405.4.00 MEASUREMENT AND PAYMENT

405.4.01 TEMPORARY COLD MIX ASPHALT

Measurement for temporary cold mix asphalt pavement when directed by the Engineer to be maintained over trench backfill will be made on a square yard basis. Measurement will be limited to the area qualifying for payment for permanent pavement. Payment shall constitute full compensation for work and materials necessary to place and maintain the temporary cold mix asphalt until permanent pavement is completed.

405.4.02 ROCK SURFACING

Payment for rock surfacing will be made on a cubic yard basis. The volume for payment shall be computed on the following measurements for length, width, and depth of rock surfacing.

Length. The actual horizontal length of trench where rock was specified or directed to be placed.

Width. The pay width for trench excavation as specified in Section 204 EXCAVATION, EMBANKMENT, BEDDING AND BACKFILL, plus 12 inches.

Depth. The actual depth of the thickness of rock surfacing specified or directed to be placed in the trench.

Payment for this item shall constitute full compensation for furnishing all materials, labor and equipment necessary to complete the work in place.

405.4.03 PAVEMENT BASE

Payment for pavement base will be made on a cubic yard basis. The volume will be computed on the following measurements for length, width and depth:

Length. Actual horizontal length of trench where rock was specified or directed to be placed.
Width. Trench pay width as specified in Section 204 EXCAVATION, EMBANKMENT, BEDDING AND BACKFILL, plus 12 inches.
Depth. Depth of pavement base specified for the particular project. When not specified, depth shall be 12 inches.

Payment for this item shall constitute full payment for furnishing all material, labor and equipment necessary to complete the work in place.

405.4.04 ASPHALT CONCRETE AND PORTLAND CEMENT CONCRETE PAVEMENT REPLACEMENT

Payment for replacement of asphalt concrete or Portland Cement Concrete Pavement will be made on a square yard basis. Payment will be limited to pavement actually replaced within the pay width specified for trench excavation in Section 204 EXCAVATION, EMBANKMENT, BEDDING AND BACKFILL, plus 6 inches additional width on each side of the trench excavation pay width. The area for payment shall be computed on the following measurements for length and width: Length: The actual horizontal length of trench where pavement was specified or directed to be replaced. Width: A variable width, being the width of pavement actually replaced within the limits specified. All pavement damaged as a result of the Contractor's operations lying outside the above-stated pay limits will be removed and replaced at the Contractor's expense.

On roadways or streets that do not have curbs, when the cut in asphalt concrete pavement falls two feet or less from the edge of the existing pavement, remove and replace the remaining strip at the Contractor's expense. When the same situation occurs where lifted or damaged during construction operations, remove and replace the remaining strip at the Contractor's expense.

Payment shall include full compensation for all excavation and disposal of temporary cold mix asphalt required to provide space for the pavement, and all materials, labor and equipment necessary to complete the work in place.

405.4.05 SIDEWALK REPLACEMENT

Payment for sidewalk replacement will be made on a square foot basis. Payment will be limited to sidewalk actually replaced within the pay width specified for trench excavation in Section 204 EXCAVATION, EMBANKMENT, BEDDING AND BACKFILL, plus 6 inches additional width on each side of the trench excavation pay width. The area for payment shall be computed on the following measurements for length and width: Length: The actual horizontal length of sidewalk specified or directed to be replaced. Width: A variable width, being the width of sidewalk actually replaced within the limits specified. All sidewalk damaged as a result of the Contractor's operations lying outside the above-stated pay limits will be removed and replaced at the Contractor's expense.

Payment shall include full compensation for all materials, labor and equipment necessary to complete the work in place.

405.4.06 DRIVEWAY REPLACEMENT

Payment for driveway replacement will be made on a square yard basis. Payment will be limited to driveway actually replaced within the pay width specified for trench excavation in Section 204 EXCAVATION, EMBANKMENT, BEDDING AND BACKFILL, plus 6 inches additional width on each side of the trench excavation pay width. The area for payment shall be computed on the following measurements for length and width: Length: The actual horizontal length of driveway specified or directed to be replaced. Width: A variable width, being the width of driveway actually replaced within the limits specified. All driveway damaged as a result of the Contractor's operations lying outside the above-stated pay limits will be removed and replaced at the Contractor's expense.

Payment shall include full compensation for all materials, labor and equipment necessary to complete the work in place.

405.4.07 CURB REPLACEMENT

Payment for replacement of curb will be made on a linear foot basis. Payment will be limited to curb actually replaced within the pay width specified for trench excavation in Section 206 EXCAVATION, EMBANKMENT, BEDDING AND BACKFILL, plus 6 inches additional width on each side of the trench excavation pay width. Measurement for payment will be the actual horizontal length of curb specified or directed to be replaced. All curb damaged as a result of the Contractor's operations lying outside the above-stated pay limits will be removed and replaced at the Contractor's expense.

Payment shall include full compensation for all materials, labor and equipment necessary to complete the work in place.

405.4.08 PAYMENT

Payment will be made for any or all of the following items when listed as pay items in the Proposal for any particular contract:

Pay Item	Unit of Measure
1. Temporary Cold Mix Asphalt	S.Y.
2. Rock Surfacing	C.Y.
3. Pavement Base	C.Y.

Pay Item (Con't)	Unit of Measure
4. Asphalt Concrete and Portland Cement Concrete Pavement Replacement	S.Y.
5. Sidewalk Replacement	S.F.
6. Driveway Replacement	S.Y.
7. Curb Replacement	L.F.

VICTOR ATIYEH
GOVERNOR

Environmental Quality Commission

Mailing Address: BOX 1760, PORTLAND, OR 97207
522 SOUTHWEST 5th AVENUE, PORTLAND, OR 97204 PHONE (503) 229-5696

MEMORANDUM

To: Environmental Quality Commission

From: Director

Subject: Agenda Item Q, April 18, 1980, EQC Meeting

Report to Environmental Quality Commission on Grants Pass Air Quality per August 25, 1978 EQC Request

Background

At the August 25, 1978, Environmental Quality Commission meeting, a petition was presented by the Josephine County Medical Society Auxiliary and the Friends of Josephine, Inc. to have the Grants Pass area designated an Air Quality Maintenance Area (AQMA) and nonattainment area. At the meeting, the Department outlined it's plans for including in the FY 79-81 budget funds to do additional monitoring on a limited basis in the area. Also to have been completed by the city of Grants Pass was an airshed capacity study for ozone and particulates.

The EQC denied the petition based on the Department's report which stated that the area did not meet EPA criteria for AQMA or nonattainment area designation. The EQC in its action also directed the Department to report back in 18 months with a recommendation as to whether an AQMA should be set up for Josephine County (see Attachment 1).

Evaluation

Monitoring has been undertaken in the Grants Pass area and the city has completed its report, Choices in Life and Breath.

As planned, the Department began monitoring for ozone during the summer of 1979 and for carbon monoxide starting in November, 1979. Additional particulate monitoring still needs to become operational. The existing particulate site continued to operate during 1979. Ozone monitoring in the summer of 1980 is scheduled. Carbon monoxide monitoring during the 1980-81 winter period is also scheduled.

Ozone concentrations that were recorded never reached the federal standard of 235 ug/m^3 but did exceed the state level of 160 ug/m^3. The highest concentration was 167 ug/m^3. This occurred on one day in July. No other concentrations in excess of the state standard were recorded. Thus, no violations of state standards were recorded as one exceedance of the 160 ug/m^3 level is allowed per year before a violation is noted.

During 1979, ozone levels were relatively low in Medford also. The highest concentration recorded being 184 ug/m^3 in July. It is believed that summer weather conditions in southwest Oregon contributed to the low concentrations. The previous low concentration recorded in Medford was 247 ug/m^3 in 1978.

Carbon monoxide levels recorded during the last part of November and December in Grants Pass never exceeded the state and federal standards. The maximum concentrations occurred in December. The maximum one-hour concentration was 15 mg/m^3 (standard = 40 mg/m^3) and the maximum eight-hour concentration was 8.1 mg/m^3 (standard = 10 mg/m^3). In comparison, the maximum concentrations in Medford for November and December were 27.6 mg/m^3 (one hour) and 18.6 mg/m^3 (eight hour).

Particulate concentrations in Grants Pass exceeded the primary and secondary 24-hour federal standards on one and two days, respectively. The highest concentrations were 294 ug/m^3 and 175 ug/m^3. One exceedance of the standard is allowed per year, thus only one violation (of the secondary standard) occurred during 1979. In comparison, Medford's highest and second highest concentrations were 416 ug/m^3 and 265 ug/m^3.

The 1979 annual geometric mean for particulate in Grants Pass was 65.4 ug/m^3. The Medford mean ranged from 66 ug/m^3 at Bear Creek to 100 ug/m^3 at the courthouse site. All of these concentrations violate the state and federal secondary standard of 60 ug/m^3. 1979 was the fourth consecutive year that the annual secondary particulate standard was violated in Grants Pass, although some of the data is not considered representative due to atypical weather or construction activity which affected the sampling site. Attachment 2 shows the particulate concentrations between 1972 and 1979.

The report, Choices in Life and Breath, prepared by the city of Grants Pass was an airshed study of the area. Emissions of hydrocarbons, particulates and oxides of nitrogen were inventoried and projections to the year 2000 were made using four growth assumptions. The inventories are shown in Attachment 3. As seen in Attachment 3, the major source of particulates is unpaved road dust. The major source of nitrogen oxides and hydrocarbons is motor vehicles.

Utilizing the emissions inventory projections, air quality projections were made for particulates and ozone. These projections are shown in Attachments 4 and 5, respectively.

As can be seen in Attachment 4, particulate levels would be very close to or exceeding the secondary standards through 2000 under adverse weather conditions. Under typical weather conditions, no violations were projected through 2000. In looking at the emissions inventories, it is clear that the rate at which unpaved roads are paved will have an impact on air quality. However, for all except the worst case, adverse weather year projections indicated the area to be in attainment by 1995.

In comparing 1979 ambient data with the projections, it can be seen that concentrations were higher than all projections. Atypical conditions of any sort were not considered the cause of the high levels. Meteorologically speaking, 1979 was about an average year. Rainfall totalled 35.9 inches, which was about 15 inches higher than Medford and 4 inches above normal. There were no significant departures from average in other Medford weather parameters. Attachment 2 shows Grants Pass rainfall data from 1972 through 1979.

It appears then that even under typical weather conditions, the secondary standard for particulates may be violated through the year 2000 in Grants Pass if the trends are correct. The projected concentrations have underpredicted for 1979, but the trend analysis may still be correct.

Thus, the area is not in attainment with particulate standards and action needs to be taken in that regards. Before action is taken, results from the Medford Aerosol Characterization Study (MACS) should be analyzed to identify source contribution to the nonattainment problem. As part of the MACS project, special samples are being collected and analyzed at the existing Grants Pass site. Using this data and chemical mass balance techniques developed as part of the Portland Aerosol Characterization Study (PACS), source contributions to the nonattainment problem in Grants Pass will be identified. A draft interim MACS report is scheduled to be completed by July 1, 1980, and a draft final report is to be completed by November 15, 1980. The final project report will be published by January 30, 1981. The November 30, 1979 interim report identified soil and road dust as the major source contributing 50 percent of the total particulate loading in Grants Pass. A better, more accurate accounting of source contributions in Medford and Grants Pass will be available in the final report.

The degree of the ozone problem in Grants Pass is still somewhat uncertain. Projections showed that concentrations in excess of 160 ug/m^3 could be expected at least 10 times a summer. In fact, only one day had a concentration in excess of 160 ug/m^3. There are four possible reasons for this difference. First, there is little ozone formation in the area. Second, the monitoring site is not located so as to detect a high concentration. Third, the projection methodology is not adequate. Fourth, 1979 weather conditions were not typical of a Grants Pass summer.

The degree to which ozone forms in the area must still be considered open to questions. Past aircraft flights have shown somewhat elevated levels and there was one recorded surface concentration of 167 ug/m^3 exceeding the state standard in 1979.

The locating of a monitoring site for ozone in Grants Pass is somewhat difficult. Prior to the establishment by DEQ of the ozone and meteorological monitoring site, no meteorological data existed to determine wind patterns in the area. Also, the reaction time for ozone to form in Grants Pass is not known. The maximum concentrations that did occur in the area, occurred around noontime or about four or five hours earlier than is recorded in other areas of the state. Possible relocation of the site is being considered.

The Choices in Life and Breath report did qualify the rather simplistic modeling that was used to generate the ozone projections. Since there was no data in the Grants Pass area with which to calibrate the model, theoretical and semi-empirical reasoning was used to make projections. The report stated that qualitatively the projections would be reasonable, but quantitatively they may be in error.

Weather conditions were probably somewhat atypical during the last part of the summer. No weather records exist to determine changes in cloud cover in Grants Pass, but Medford recorded cool, wet conditions in late summer. Such conditions would inhibit ozone formation.

Given these four conditions it would appear reasonable to continue monitoring to help construct a reasonable assessment of ozone concentrations in Grants Pass.

Summation

1. A petition was presented to the EQC by the Josephine County Medical Society Auxiliary and The Friends of Josephine, Inc. at the August 25, 1978, meeting of the Commission to have the Grants Pass area designated a nonattainment area and an Air Quality Maintenance Area.

2. The Commission denied the petition based on lack of evidence that the area should be designated nonattainment. The Commission asked for a future report to assess new information and data that was to be collected.

3. Monitoring sites for ozone and carbon monoxide were established in 1979. The one existing particulate monitor has continued in operation and an additional particulate monitor is still to be established. A report, Choices in Life and Breath was prepared by the city of Grants Pass.

4. Monitoring data for carbon monoxide showed no violations of air quality standards during the winter of 1979. Ozone concentrations exceeded the state standard on one day in 1979. The state standard and federal secondary standard for particulates were violated during 1979 and the three previous years. Preliminary reports indicate soil and road dust to be a major source contributing to the total particulate loading in Grants Pass.

5. Weather conditions during the 1979 summer ozone season were not conducive to ozone formation. Yearly rainfall and other weather conditions that could affect particulate concentrations were about average.

6. Continued monitoring during the 1980 summer ozone season is scheduled. Carbon monoxide monitoring during the 1980-81 winter season is scheduled.

7. The Choices in Life and Breath report indicated potential ozone and particulate air quality problems in the area through the year 2000. The particulate projections underpredicted ambient concentrations for 1979.

8. The Medford Aerosol Characterization Study includes provisions for special sampling at the existing Grants Pass particulate site. Analysis of the special sampling will provide information on the sources contributing to the particulate problem in Grants Pass. A draft interim report is due July 1, 1980, and the final report is due January 30, 1981.

9. Data from 1980-81 monitoring needs to be evaluated for a better assessment of ozone and carbon monoxide problems in Grants Pass.

Director's Recommendation

Based upon the Summation, the Commission should direct the Department to defer any change in attainment status designation until the Medford Aerosol Characterization Study results are available and sources contributing to the particulate problem are identified.

Bill

WILLIAM H. YOUNG

Attachments:
1. Minutes of August 25, 1978, EQC Meeting, Page 16
2. Rainfall and Particulate Concentration Comparison for Grants Pass
3. Emission Inventories
4. Particulate Projections
5. Ozone Projections

M. E. Ziolko:p
229-5775
March 25, 1980
AP0891

AUGUST 25, 1978

EQC MEETING MINUTES

AGENDA ITEM N - FEDERAL GRANT APPLICATION - REVIEW OF CONSOLIDATED FEDERAL GRANT APPLICATION FOR AIR, WATER AND SOLID WSTE FOR FEDERAL FISCAL YEAR 1979

Chairman Richards said that any time the staff wrote reports such as this on policy, technical terms should be spelled out so that the report would be more meaningful to those reading it.

Some discussion followed between the Commission and staff regarding this item.

This item was presented for information purposes and no action of the Commission was necessary.

AGENDA ITEM O - SUBSURFACE RULES - AUTHORIZATION FOR PUBLIC HEARING TO CONSIDER MINOR AMENDMENTS TO RULES GOVERNING SUBSURFACE AND ALTERNATIVE SEWAGE DISPOSAL, OAR 340-71-020(1)(i) and 72-010(5)

It was MOVED by Commissioner Phinney, seconded by Commissioner Hallock and carried unanimously that the Director's Recommendation to authorize a public hearing on this matter be approved.

AGENDA ITEM P - JOSEPHINE COUNTY AQMA PETITION - CONSIDERATION OF PETITION OF FRIENDS OF JOSEPHINE, INC., et al TO DECLARE JOSEPHINE COUNTY AN AIR QUALITY MAINTENANCE AREA

There being no one present who wished to testify on this matter, Chairman Richards closed the public hearing.

Mr. Mike Ziolko, Air Quality Division, presented the Director's Recommendation on this matter. In response to Chairman Richards, Mr. Ziolko said that at least a year's worth of data would be needed before a decision could be made on this area.

It was MOVED by Commissioner Phinney, seconded by Commissioner Hallock and carried unanimously that the petition be denied and the staff be requested to present within 18 months a recommendation as to whether or not an air quality maintenance area should be set up for Josephine County.

The Commission expressed its regrets at being unable to accept the petition because those living in the perceived an air pollution problem even through there was not the necessary data to support the establishment of an AQMA.

There being no further business the meeting was adjourned.

Respectfully submitted,

Carol A. Splettstaszer
Recording Secretary

Rainfall and Particulate Concentration Comparison for Grants Pass

1972 - 1979

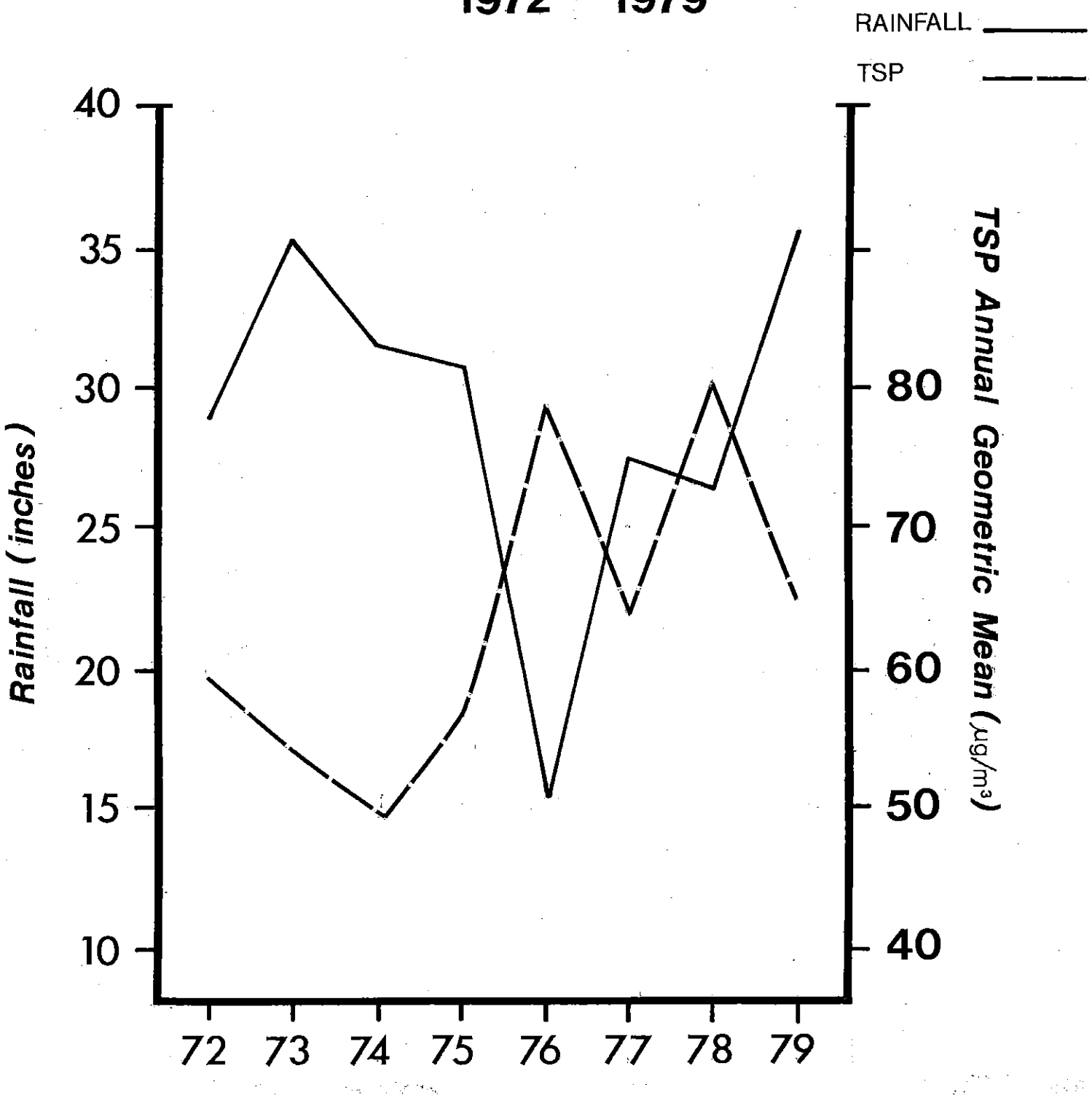


Table 8. PARTICULATE INVENTORIES BY SOURCE CATEGORY, TONS/YEAR

	Point Sources	Unpaved Road Dust	Paved Road Dust	Motor Vehicles	Open Burning	Res. Heating, Wood	Other	Total
1970	3197	2425	502	116	80	36	116	6472
1976	727	3291	719	174	109	229	110	5359
1980 Low Growth	709	3078	826	178	125	286	108	5310
1980 Midrange Growth	709	3105	833	180	126	288	108	5349
1980 High Growth	709	3159	847	183	128	295	108	5430
1980 Worst Case	727	3187	855	185	130	314	109	5505
1990 Low Growth	664	1941	1085	201	148	339	116	4494
1990 Midrange Growth	664	2010	1125	209	153	350	116	4627
1990 High Growth	664	2040	1197	222	163	373	116	4775
1990 Worst Case	727	3817	1284	238	175	426	123	6791
2000 Low Growth	619	142	1250	232	161	369	123	2893
2000 Midrange Growth	619	142	1342	249	173	396	122	3043
2000 High Growth	619	142	1528	283	197	451	122	3342
2000 Worst Case	727	3817	1722	319	222	538	146	7496

Table 9. OXIDES OF NITROGEN EMISSIONS INVENTORIES, TONS/YEAR

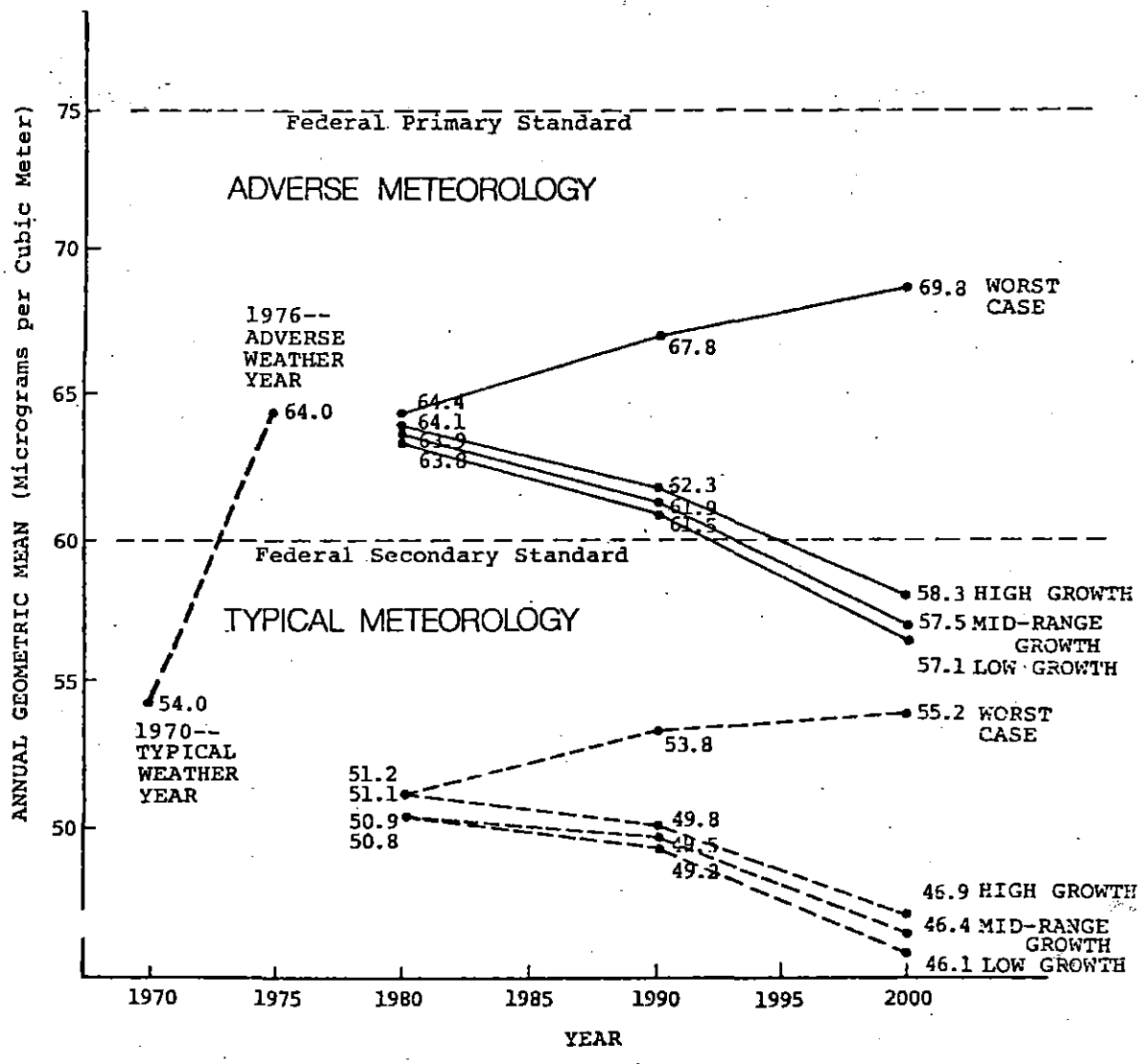
	Motor Vehicles	Point Sources	Comm./Ind. Heating, Gas	Rail-roads	Open Burning	Other	Total
1976	1725	623	56	48	41	67	2560
1980 Low Growth	1817	608	61	48	47	70	2651
1980 Midrange Growth	1833	608	61	48	47	70	2668
1980 High Growth	1865	608	61	48	48	71	2700
1980 Worst Case	1881	623	62	48	49	73	2736
1990 Low Growth	1616	569	72	48	56	86	2446
1990 Midrange Growth	1675	569	72	48	58	85	2508
1990 High Growth	1782	569	72	48	61	86	2619
1990 Worst Case	1913	623	81	48	66	98	2830
2000 Low Growth	1432	530	77	48	60	106	2255
2000 Midrange Growth	1539	530	77	48	65	107	2367
2000 High Growth	1752	530	77	48	74	108	2590
2000 Worst Case	1974	623	98	48	83	140	2975

Table 10. HYDROCARBON EMISSION INVENTORIES, TONS/YEAR

	Motor Vehicles	Point Sources	Open Burning	Gas Marketing	Surface Coatings	Dry Cleaning	Other	Total
1976	1446	206	204	200	50	42	26	2174
1980 Low Growth	1569	200	235	230	57	48	29	2368
1980 Midrange Growth	1583	200	237	323	58	48	29	2387
1980 High Growth	1610	200	241	236	59	49	30	2424
1980 Worst Case	1624	206	243	238	59	50	29	2448
1990 Low Growth	826	188	277	272	68	57	32	1719
1990 Midrange Growth	856	188	288	282	70	59	32	1781
1990 High Growth	911	188	306	300	75	62	32	1874
1990 Worst Case	978	206	322	322	80	67	33	2014
2000 Low Growth	718	175	302	296	74	62	34	1656
2000 Midrange Growth	771	175	325	318	79	66	34	1769
2000 High Growth	878	175	369	362	90	75	34	1984
2000 Worst Case	989	206	416	408	101	85	37	2243

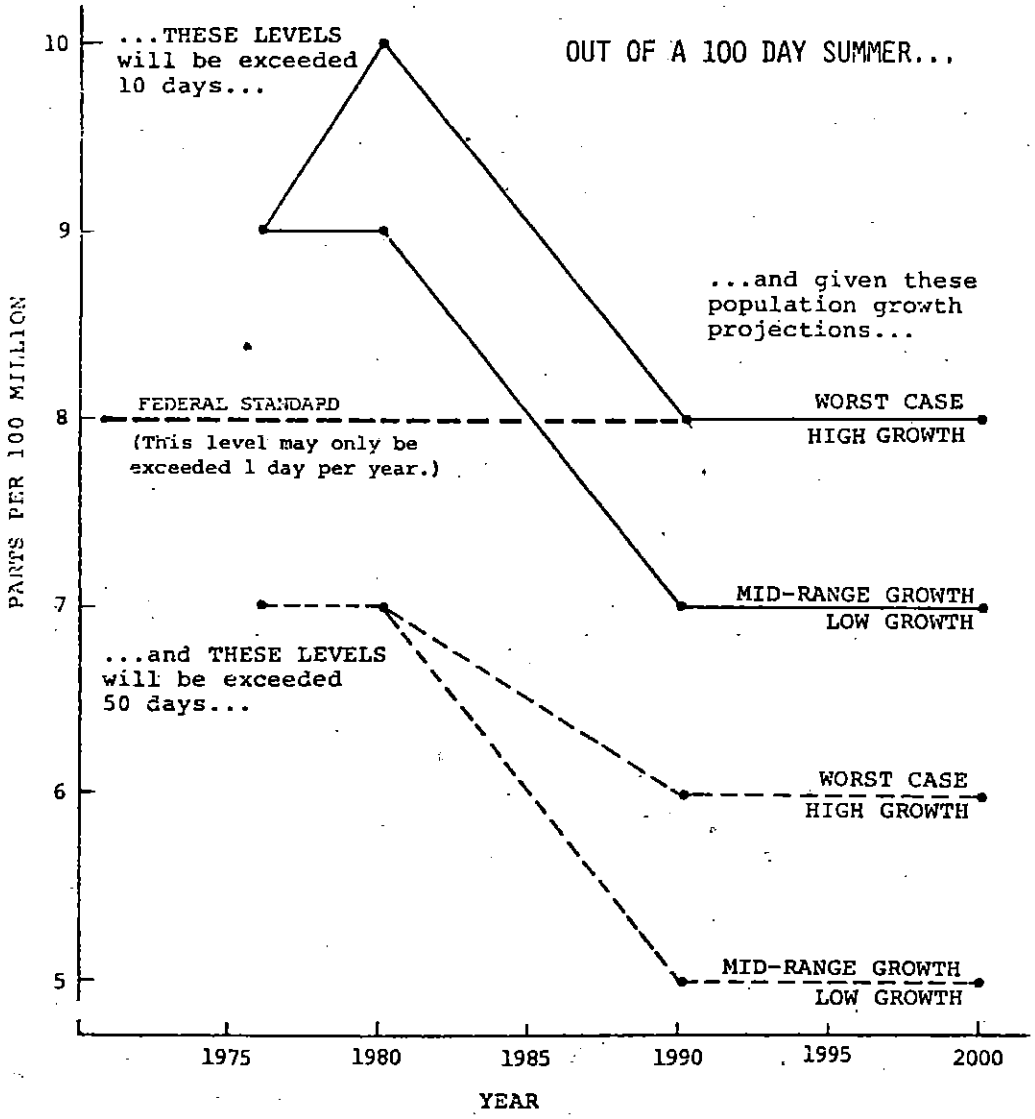
GRANTS PASS AREA AIRSHED STUDY

FIGURE 7
PREDICTED TOTAL SUSPENDED PARTICULATE LEVELS



GRANTS PASS AREA AIRSHED STUDY

FIGURE 8
PREDICTED OXIDANT LEVELS (SMOG)



AGENDA ITEM F
April 18, 1980, EQC Meeting

Addendum

The following corrections should be made:

340-24-320(4)(b) ... California Vehicle Code Section 27156 granted ...

340-24-320(5)(a) ... except that when ... motor vehicle, any requirement ...

340-24-330(1)	L.U.V., Chevrolet		
	1980	0.5	0.5

Public Forum

Environmental Quality Control Commission 4/16/80

In the Florence area we have access to a sanitarian two days each week, wednesday and thursday. This is causing us quite a problem. If we don't have a septic system installed and ready for inspection by wednesday or thursday then we have to wait until the following wednesday or thursday to get a system inspected.

We have been informed by Jack Osbourn that the state legislature has passed a law allowing the DEQ to establish a certification program for qualified installers. We have also been informed by Jack Osbourn that he is presently rewriting the rule book for Subsurface Sewage Disposal Systems. This will be the third time he has done this since March of 1979. He has informed us that rules for this certification program will be included in the rule book he is working on now. This rule book will not be ready until fall of 1980, which is after the construction season.

We propose that you direct Mr Osbourn to set aside the rewriting of the rule book for now and have him direct his attention to writing rules and holding hearings on the certification program. We have talked this over with Roy Burns, Water Pollution Control, Lane County, and we both agree that this could be done and a certification program could be in effect before the heavy construction season begins.

The estabilshment of a certification program would relieve some of the burden on the already overworked sanitarians in our area and it would also help us run our business far more economically.

Thank you for allowing us to present this problem to you and your consideration of this matter would be greatly appreciated.

Sincerely,

Charles P. McCormick

Charles P. McCormick
McCormick's Backhoe & Tractor Svc
P.O. Box 118
Westlake, Or. 97493
997-8960

Presented by Terry Smith Item H
City of Eugene

FURTHER DISCUSSION OF PARTICULATE IMPACT FACTORS USED IN "AN ANALYSIS OF AIR QUALITY IMPACT IN THE WILLAMETTE VALLEY RESULTING FROM INCREASED FIELD BURNING"

Background

Since preparation of the field burning technical support document, questions have been raised by DEQ and EPA technical staff about the reasonableness of the particulate impact factors used to estimate the impact of field burning on total suspended particulate. A brief description of a multi-variant analysis of smoke intrusions, acreage burned, and meteorological variables will be given along with a scatter plot of all field burning smoke intrusions into Springfield recorded from 1973 to 1978 and into Lebanon and Halsey in 1978. Finally, one source of disagreement about particulate impact factors--differences in the impact estimates from chemical mass balance and nephelometry for small intrusions--is discussed.

Multi-variant Analysis of Smoke Intrusions

Early in 1978, a multi-variant analysis of smoke intrusions was conducted to attempt to build an empirical model for describing this phenomenon. Nephelometer records of intrusions into Eugene and Springfield between 1973 and 1977 were obtained from DEQ. Regression analysis was performed to determine if there was any relationship between the intensity of a smoke intrusion and the acreage burned and meteorological conditions at the time of the burn on the intrusion.

After the nephelometer methodology for estimating the impact of an intrusion on fine-particulate concentrations was developed, the fine-particulate impact was used as the measure of the intensity of the intrusions. A number of other measures of the intensity of the intrusion were tried in the analysis, but none worked better or were as useful. The acreage burned that caused the intrusion was roughly determined using surface wind trajectory analysis (from Eugene and Salem airport data) to find out which of three sectors of the valley caused the intrusion--north valley, south valley, and south priority. Initially, a number of meteorological variables were tested for significance and were discarded (average afternoon temperature and wind speed for example). Two variables were found to be useful--the average humidity between 11 a.m. and 4 p.m. on the day of the burn and the resultant average wind speed at the Eugene Airport during the intrusion. Finally, data on afternoon mixing height and mean transport wind speed measured at Salem were obtained from Chuck Craig of the Oregon Seed Council. This data set was limited to July 15 to September 15, 1974 through 1978.

A full discussion of the findings of this study would be lengthy and some additional analysis is warranted when time permits. The results of a linear regression analysis of these variables using fine-particulate impacts in Springfield as the dependent variable will be given (see tables 1 and 2). Comparing the standardized regression coefficients and significant levels in the two tables, there appears to be a moderate and perhaps significant interaction between

Table 1

Linear Regression Results for Fine Particulate Impact of Smoke Intrusions into Springfield 1974-1977 with Relative Humidity Used as a Predictor (multiple correlation coefficient using all variables = .700, N = 29)

Variable	Mean Value	Standard Deviation	Standardized Regression Coefficient	Significant Level
Fine Particle Impact	23 ug/m^3	36.5	--	--
Acres Burned	3443 acres	3202	0.415	.0004
Resultant Wind Speed	4.7 knots	3.8	-0.352	.0009
Relative Humidity	39.1%	8.5	0.265	.039
Mean Transport Wind Speed X Mixing Height	6.9 mi-knots	4.5	0.463	.48
Mixing Height	4452 feet	1625	-0.368	.46
Mean Transport Wind Speed	7.8 knots	3.5	-0.331	.47

TS:er/PW25a25

Table 2

Linear Regression Results for Fine Particulate Impact of Smoke Intrusions into Springfield 1974-1977 without Relative Humidity Used as a Predictor (multiple correlation coefficient using all variables = .638, N = 29)

Variable	Standardized Regression Coefficient	Significant Level
Acres Burned	0.515	.0001
Resultant Wind Speed	-0.314	.01
Mean Transport Wind Speed X Mixing Height	-0.164	.16
Mixing Height	-0.121	.30
Mean Transport Wind Speed	-0.168	.16

TS:er/PW25a26

relative humidity and acreage burned and upper-air measurements. Physically, it is known that emissions from field burning vary with relative humidity and that relative humidity can vary with mixing height. However, the moderate bi-variant correlation (0.42) between humidity and acreage burned is probably coincidental and is not normally considered large enough to produce significant multi-colinearity in regression analysis.

Given the uncertainities in the data, however, this problem needs further investigation. Even if relative humidity is excluded from the regression model, upper air conditions appear to have a weak and barely significant effect on the intensity of an intrusion once it is under way. Since the upper air data set available only included about half the recorded intrusions into Springfield, this finding could be biased and might change with the inclusion of upper air data for all intrusions. Acreage burned and resultant wind speed are clearly significant variables, however.

Given the known physical importance of relative humidity, a linear regression model using that variable, acreage burned, and resultant wind speed was used. Since the air quality impact analysis concerns the effect of increased acreage burned, the average fine particulate impact factor is simply the regression coefficient for this variable--3.67 ug/m3-1,000 acres. From a previous analysis of the relationship between nephelometry and particulate impacts of smoke intrusions, the total particulate impact of an intrusion was found to be one-third greater than the fine particulate impact. Therefore, the average total particulate impact factor is 4.9 ug/m3-1,000 acres.

A similar analysis using intrusions from south valley burning only found a total particulate impact factor of 1.5 ug/m3-1,000 acres for the dozen such intrusions recorded. This finding and an understanding of the different meteorological conditions used for north wind and south wind burning led to the use of two impact factors in the analysis. The development of these factors is described in the technical support document.

Scatter Plots of Particulate Impact Factors

A plot of approximate upwind acreage burned and the TSP impact of the intrusion into Springfield from 1973-1978 and into Lebanon and Halsey during 1978 is shown in Figure 1. Lines representing the north wind, south wind, and average impact factors are also shown. Clearly, the two impact factors used in the impact analysis are reasonably conservative. The four south valley burning smoke intrusions lying well above the south wind impact factor line are all the result of wind-flow reversal, and occurred prior to 1977. Since then, forecasting and tracking capabilities have greatly improved with the acquisition of hourly synoptic scale meteorology data by the smoke management program. This type of intrusion is expected to be rare in the future.

Some Differences between Nephelometry and Chemical Mass Balance

During early efforts to develop particulate impact factors, three intrusions from 400 acres or less of burning were examined. Chemical mass balance estimated the impact of these intrusions in the 2 to 8 ug/m3 range leading to impact factors greater than 15 ug/m3-1,000 acres. Later, an examination of

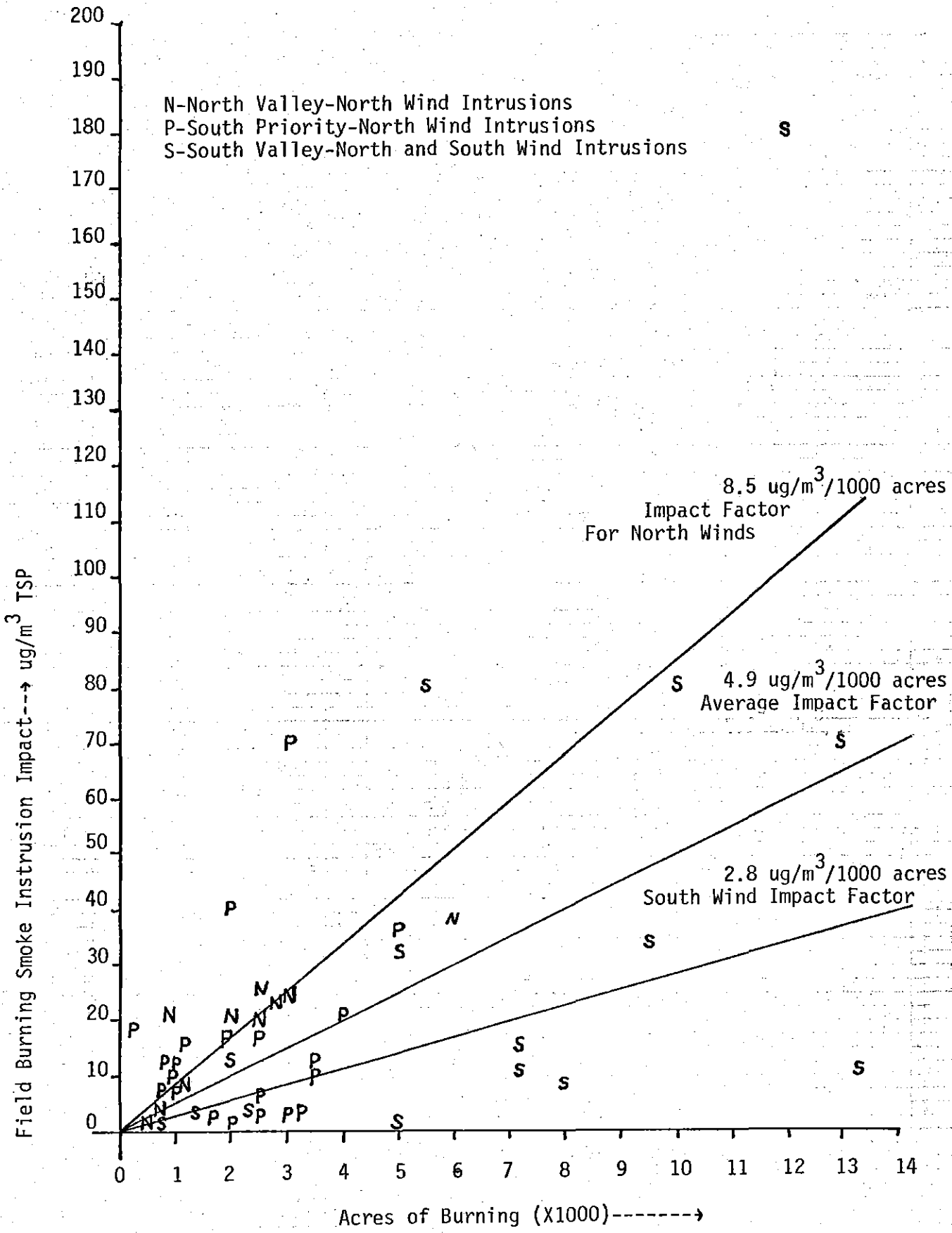


Figure 1. Scatter Plot for smoke intrusions into Springfield 1973-1978 for all days and into Lebanon and Halsey 1978.

nephelometer records showed that for two of the intrusions, light scattering levels were only slightly increased over a one-hour period. For the other intrusion it was clear that a morning smoke intrusion, probably from slash burning, had been included with the small afternoon field burning intrusion by CMB. Nephelometry estimates of the impact of the three field-burning intrusions at 0.5 to 2 ug/m3 and the calculated impact factors are below the range used in the analysis. Although the uncertainties of both techniques are relatively large for small intrusions, one advantage of nephelometry--better temporal resolution--is obvious. For larger intrusions, a comparison has shown a fairly good agreement between the two techniques.

Conclusion

A large number of field burning intrusions from several locations have been examined to determine particulate impact factors. North and south wind impact factors used in the support document are reasonably conservative. Additional investigation will improve these impact estimates in the future.

TS:er/PW25a22

Rec'd 4-18-80
OOS

Hearings on Field Burning, April 18, 1980 from Jane Newton, 149 Peterson, Philomath, OR 97370

I am here as a consumer.

Nothing can be made without producing some pollution. All our consumption is possible because of productivity that caused pollution. I think most Americans realize that this is a fact of life; you don't hear them because they don't come to meetings.

As a consumer of many products made outside the Willamette Valley, I benefit from the pollution people put up with elsewhere. For them this often has meant extra pollution every day.

What they have done for me, I want for them. I want to protect the productivity that is essential to consumption. I am glad that for me the necessary pollution is only occasional, not like theirs a daily matter.

I am also a consumer of beauty. I am grateful that here the pollution is not just ugly, as it is in most places, but is actually part of a cycle that protects the vigor and beauty of our surroundings, as well as essential productivity.

I suspect the car trips made as a result of protests of field and slash burning have produced more hazardous pollution themselves than all the burning has.

I am grateful for the new laws which make it so much easier for the farmers to keep Oregon beautiful.

Item H

Recd 4-18-80
QDS

LEBANON CITY HALL

925 MAIN STREET, P.O. BOX 247
LEBANON, OREGON 97355 (503) 258-3185

ADMINISTRATION • FINANCE • COMMUNITY DEVELOPMENT

April 18, 1980

Environmental Quality Commission
P. O. Box 1760
522 SW 5th Avenue
Portland, OR 97207

Dear Commissioners:

Historically, Lebanon has been very supportive of the grass seed industry and we are not here today to register opposition to the 250,000 acre proposed limitation.

Rather we have come to implore future sensitivity to the diminution of usable airshed in the Lebanon area. While we continue to support our neighbors the seed growers, the City has also identified as its number one priority the diversification of Lebanon's industrial base.

The staff report prepared for this hearing (p. 5 and 6) signals an alarm to which we would draw your attention and I quote:

> "The new impact analysis does project significant utilization of the 24-hour Prevention of Significant Deterioration increment for Total Suspended Particles. Specifically, 80 percent usage of the...24-hour increment is projected for the Lebanon area. Previous Department estimates indicated a somewhat lower maximum increment usage of 41 percent at Coburg. It is clear, however, that either analysis indicates significant increment usage.
>
> The Department recognizes that these PSD increment consumption estimates will affect future airshed use by other new sources."

Obviously the City cannot allow itself to be disenfranchised from future growth because we are in violation of air quality standards.

Likewise, we do not wish to be placed in a position of pitting future industrial growth against the interests of the seed industry.

Lebanon would like to go on record at this hearing to solicit the support of this Commission as well as the State Legislature to continue efforts to strike a delicate balance for the future utilization of the airshed in our community.

We pledge our involvement in helping all parties to seek such a solution.

Sincerely,

Daniel A Clark

Daniel A. Clark,
Mayor

jl

Item J

Attachment 1 -- Additions to the RR/SC Staff Report

Underlines _____ indicate new language.

Page 11:

Add subsection "e" as follows:

6. How development will be handled in the interim to insure that it does not impair sewerage implementation.

e. The appropriate stipulations that the groundwater protection and remedial action plan complies with local land use plans.

Page 11:

Modify paragraph number 2 as follows:

It is important to note that if the Department is to approve interim sewerage facilities, such facilities must be recognized in and accommodated by Lane County in their comprehensive Land Use Plan, area 208 Plan, and the Eugene-Springfield Metropolitan Area General Plan.

2-18-80

STATE OF OREGON

INTEROFFICE MEMO

DEPT _____ TELEPHONE _____

cc Terri

TO: Jane Fechtal

DATE: March 25, 1980

FROM: John Borden

SUBJECT: Public Notice and Information: River Road / Santa Clara Hearing, April 18.

Please contact appropriate TV, Radio and Press as discussed. Copies should also go to the River Road/Santa Clara community group mailing list (obtain from Joyce Nichols, Lane County Community Relations.)

Please also get copies to Roy Burns and Garrett Rosenthal(LCOG).

Roy was not in when I phoned him this morning, but I will contact him about:

1. what is still confidential in the current draft staff report
2. the need for he and Daryl to meet with Lane County planners to check accuracy of my statements about 208 plans, comprehensive plans, statistics, etc.
3. how we should approach the Lane County Board of Commissioners about a Stipulated Agreement between them and the EQC.

Thanks.

(One more "draft" enclosed -- last extra copy. John)

81.125.1307

NOTICE OF PUBLIC HEARING

A Chance To Be Heard About The

RIVER ROAD/SANTA CLARA SEPTIC TANK MORATORIUM

The Environmental Quality Commission will soon consider whether to continue, modify or repeal the current septic tank moratorium in effect in the River Road/Santa Clara area in Lane County. This rule-making hearing will take place before the Environmental Quality Commission on:

DATE: APRIL 18, 1980

LOCATION: EUGENE CITY COUNCIL CHAMBERS
777 PEARL STREET
EUGENE

BEGINNING: 10:00 A.M.

Interested citizens, especially those living in the River Road/Santa Clara area, people wishing to build houses or structures requiring septic tanks in the affected area, and those who use groundwater in or north of the area are urged to attend the public hearing and express their opinion on the merits of continuing, modifying or repealing the current septic tank moratorium.

Testimony may be presented orally or in writing at the hearing or may be delivered to the DEQ, Willamette Valley Region Office in writing at:

16 OAKWAY MALL
EUGENE, OREGON 97401

SUMMARY STATEMENT FOR THE MEDIA

Notice of Public Hearing: A Chance To Be Heard About The River Road/Santa Clara Septic Tank Moratorium.

The Environmental Quality Commission will soon consider whether to continue, modify or repeal the current septic tank moratorium in effect in the River Road/Santa Clara area in Lane County. This rule-making hearing will take place before the Environmental Quality Commission on:

Date: April 18, 1980

Location: Eugene City Council Chambers
777 Pearl Street
Eugene

Beginning: 10:00 a.m.

Department of Environmental Quality staff have proposed three options for the Commission's consideration. The recommended option consists of three parts:

1. Repeal the current septic tank moratorium.

2. Adopt a regional septic tank rule to prevent new unacceptably high nitrate-nitrogen loads to the local groundwater system.

3. Obtain a Stipulated Agreement between the Lane Board of Commissioners and the Environmental Quality Commission which results in a groundwater protection and remedial action plan.

The Commission will base its decisions on:

1. Oral and written public testimony.

2. River Road/Santa Clara Groundwater Study, Final Technical Report.

3. The LCOG final report.

4. Department of Environmental Quality staff report.

Testimony may be presented orally or in writing at the hearing or may be delivered to the DEQ, Willamette Valley Region Office in writing at:

16 Oakway Mall
Eugene, Oregon 97401

Copies of the staff report and proposed rules may be obtained at the same location.

Item D Recd 4/18/80

SOUTHERN OREGON TIMBER INDUSTRIES ASSOCIATION
2680 N. Pacific Highway
Medford, Oregon 97501
April 18, 1980

Mr. Chairman, and Members of the Commission: I am John L. Smith, Secretary-Manager of the Southern Oregon Timber Industries Association. SOTIA is a two county organization headquartered in Medford. Our association represents 172 member firms, including all of the sawmills and plywood plants in Grants Pass area.

Our members have had a long standing interest in air quality and measures to protect and improve it. The association and membership have been intimately involved in the Air Quality Maintenance Area program in Medford. Industry's response has drawn favorable comment from your commission.

Today I wish to enter the following comments on the DEQ findings and staff recommendation in their "Report to the Environmental Quality Commission on Grants Pass Air Quality per August 25, 1978 EQC Request".

We are concerned about premature designation of Grants Pass as a non-attainment area. The report's findings suggest further monitoring is appropriate before any change in status is considered. The report also suggests that refinements in methodology and sample sites may be necessary if definitive results are to be achieved. The paramount question is whether or not the area is in attainment and in which areas. Based on the limited sample durations and the problems noted, a definitive answer is not possible. We, therefore support continued monitoring.

As we have learned in the Medford AQMA experience, non-attainment status leads to the need for strategy to achieve attainment. In Medford much of the strategy development was based on inadequate assessment of sources. As a result we find ourselves going back to the drawing board to develop further TSP strategy and

measures to meet federal secondary goals. The industry has borne the bulk of costs in the first round of TSP cleanup, and we are justifiably proud of our efforts and their results. However, we have questioned the validity of some of the measures.

The Medford Aerosol Characterization Study promises to provide definitive answers on sources in the aerosol area. We concur with the staff that any status change should be deferred until the MAC Study data is all collected and analysed.

The industry facilities in Grants Pass are scheduled for installation of several control devices which should significantly change our contributions to emissions in several categories. Those reductions may be significant enough to be a determining factor in the attainment question. Experienced data from existing installations of the same type can be used to assess the effect. This is particularly effective when combined with the MAC Study data. SOTIA encourages you to defer consideration until installation is completed and new source testing can be done, or consider experienced figures from identical installations in your deliberations.

It is very likely that industrial operations will be significantly curtailed in the Grants Pass area this year due to national economic conditions. This situation should provide the DEQ an excellent opportunity to pinpoint other sources. This is another reason for deferal of a status change.

In summation, we concur with the staff recommendation on deferal of any change in status until the MAC Study is completed. Furthermore, we offer the aforementioned points for your consideration in support of the staff recommentation.

Thank you.

Item Q

Josephine County Medical Auxiliary

2944 Helgeson Lane
Grants Pass, Oregon 97526
April 14, 1980

Environmental Quality Commission
Department of Environmental Quality
522 S.W. 5th Avenue
P.O. Box 1760
Portland, Oregon 97207

Dear Commission Members:

In 1978 the Josephine County Medical Society Auxiliary presented a petition to you to have Josephine County designated an Air Quality Maintenance Area. We have been pleased that our efforts have helped to call attention, both locally and at the state level, to a potentially serious problem here. We have been pleased that some monitoring has been done and would like to support its continuance.

We would like to call attention to the following points included in the report from the Department of Environmental Quality:

1. The location and reliability of some of the monitoring sites is questionable.

2. Our weather conditions the first year of monitoring have been atypical.

3. The study Choices in Life and Breath include some projections to the year 2000. Based on the data now available, these projections seem to have underestimated the potential problem with some substances.

We are pleased that DEQ is aware of the above. We are also concerned that again this year's readings may not be typical due to the economy. At least two situations are possible which can alter the results of the coming months' air readings. First, many of our mills are closing or cutting back. Secondly, we may expect fewer cars and tourists due to gasoline prices. Last year our county parks showed more use by Oregonians than Californians for the first time in several years.

We wish to support your efforts for more thorough readings of particulates, ozone levels, etc. and appreciate your thoughtfulness in evaluating the collected data.

Sincerely,

Kay Moline

Josephine County Medical Society
Auxiliary,
Kay Moline, President
Carolyn Wheatley, Immediate Past
President
Shawna Gallemore, President-Elect

CC: Michael E. Ziolko
Air Quality Division

CITY OF GRANTS PASS AF
101 NORTHWEST A ST
GRANTS PASS OR 97526

Western Union Mailgram

4-022343S107 04/16/80 ICS IPMRNCZ CSP PTLE
5034769201 MGM TDRN GRANTS PASS OR 192 04-16 1201P EST

Item Q

THE ENVI RONMENTAL QUALITY COMMISSION
CARE MIKE ZIOLKO
DEPT OF ENVIRONMENTAL QUALITY
522 SOUTHWEST 5TH AVE
PORTLAND OR 97204

DEAR COMMISSIONERS

WE HAVE SEEN THE STAFF REPORT SUMMARIZING THE RESULTS TO DATE OF MONITORING THE GRANTS PASS AIRSHED. CITIZENS OF THE AREA ARE CONCERNED ABOUT BOTH AIR QUALITY AND THE POSSIBILITY OF NEEDLESS REGULATION BOTH THE COMMISSION AND THE DEQ STAFF ARE TO BE COMMENDED FOR THE CAREFUL YET THOROUGH APPROACH TO THE PROBLEM THEY HAVE DEMONSTRATED THE LOCAL STAFF AS WELL AS THE EXPERT TECHNICIANS AND ADMINISTRATORS FROM PORTLAND HAVE SHOWN A GREAT DEGREE OF PROFESSIONAL INTEGRITY, INGENUITY AND SENSITIVITY IN DESIGNING THE MONITORING PROGRAM HERE. OUR THANKS ALSO TO THE JOSEPHINE COUNTY ENVIRONMENTAL HEALTH DIVISION AND LITTON INDUSTRIES WITHOUT WHOSE ASSISTANCE THE MONITORING PROGRAM WOULD NOT HAVE BEEN POSSIBLE. THE CITY COUNCIL HAS BEEN APPRAISED OF PROGRESS TO DATE AND LOOKS FORWAR TO THE DETAILED RESULTS OF THE MEDFORD AEROSOL CHARACTERIZATION S UDY (MACS). WE CONCUR WITH THE DIRECTORS RECOMMENDATION, AND RESPEC FULLY REQUEST THE COMMISSION TO DEFER MAKING ANY CHANGE IN ATTAINMENT STATUS UNTIL THE RESULTS OF THE MACS STUDY ARE KNOWN, AND THE ISSUES HAVE HAD A THOROUGH DISCUSSION AT THE LOCAL LEVEL
RON BERGMAN, CITY MANAGER

1205 EST

MGMCOMP MGM

State of Oregon
DEPARTMENT OF ENVIRONMENTAL QUALITY
RECEIVED
APR 17 1980
AIR QUALITY CONTROL

4-18-80 (5)

STATE OF OREGON

INTEROFFICE MEMO

TO: Bill Young

DATE: April 2, 1980

FROM: John Borden

SUBJECT: AQ-Evans Products Company, Submicroporous Battery Separator Plant
Ambient TCE Study
Benton County

Due to problems with sampling system development, we have drafted an addendum to postpone the ambient TCE testing (see attached memos and addendum).

I have enclosed a status report for the April Commission breakfast which briefly details the situation (attached).

We have coordinated our actions with the Company, the consulting engineering firm, and the local citizens' group.

John Borden

wr

Attached: Memos 1 and 2
Addendum and letter
Letter to Art Boyle
Draft Ambience article
EQC Status Report

VICTOR ATIYEH
Governor

Environmental Quality Commission

POST OFFICE BOX 1760, PORTLAND, OREGON 97207 PHONE (503) 229-5696

TO: Environmental Quality Commission

FROM: Director

SUBJECT: Evans Products Company
Status Report

In late 1979, the Department's proposal to issue an Air Contaminant Discharge Permit was brought before you for concurrence. The proposed permit was changed to reflect the concerns voiced during the discussion before you and the permit was issued to Evans in February, 1980.

One of the requirements of the permit is that an ambient air study to determine trichloroethylene (TCE) levels in the residential area near the plant be performed. Evans' consultant designed a program of sampling using bags (for several hour sampling times). But the Oregon Graduate Center found that bags are not acceptable because they contain TCE themselves.

The study must be redesigned to provide the necessary results; i.e., TCE ambient air concentrations, with grab samples taken in passivated metal containers and, therefore, the Department is recommending that the study be postponed until the period October 1980 to January 1981.

A copy of the permit addendum is attached. The Company will continue to perform monitoring activities (1 ppm sensitivity) on a weekly basis until the ambient air study is completed.

The Department has coordinated its activities in this matter with both Evans and the Friends of Benton County.

Bill

WILLIAM H. YOUNG

Attached: Permit addendum for Evans Products Company.
Ted Groszkiewicz:wr
378-8240
April 2, 1980

VICTOR ATIYEH
GOVERNOR

Department of Environmental Quality

522 SOUTHWEST 5TH AVE. PORTLAND, OREGON

MAILING ADDRESS: P.O. BOX 1760, PORTLAND, OREGON 97207

Evans Products Company
P.O. Box E
Corvallis, OR 97330

RE: Addendum to Air Contaminant
Discharge Permit No. 02-2203

Gentlemen:

Enclosed is proposed Addendum #1 to your permit. Your request for a modification of Conditions 11 and 13 has been incorporated in this addendum. Recent meetings have shown that composite sampling for determining ambient concentrations of Trichloroethylene in the area surrounding your plant is not possible at the levels of TCE identified by earlier grab sampling. A study period time extension will allow adequate grab sampling and give samples representative of stagnant air conditions.

This proposed addendum will become effective in twenty days of the date of this letter, unless you request a hearing before the Environmental Quality Commission in accordance with OAR 340-14-040. If you have any questions, please contact the Department within the twenty day period.

Sincerely,

F.A. Skirvin, Supervisor
Air Quality Program Operations

FAS/wr

Attachment

cc: Willamette Valley Region, Salem Office

STATE OF OREGON INTEROFFICE MEMO

TO: John Borden cc: FASkirvin, AQD DATE: April 2, 1980

FROM: Ted Groszkiewicz via Dave St. Louis

SUBJECT: AQ-Evans Products Submicro Plant
Ambient TCE Study I

Dave and I met with Mark Boedigheimer (CH2M/Hill) and Mike Mikulka (Evans) on March 11 to discuss the ambient TCE study. The bag method of sampling proposed by CH2M/Hill and approved in concept by us is unacceptable. Rei Rasmussen (OGC) found 7 ppb of TCE in a bag filled with clean air. A series of hot air purges brought the level of TCE down to 1/2 ppb; but after 24 hours that level had risen to 1 ppb.

Clearly, when we anticipate seeing levels of 0.1-100 ppb of TCE, a 0.5 to 7 ppb TCE background in the sample device is intolerable.

When coupled with the onset of better mixing in the airshed and Dr. Rasmussen's out-of-country travel schedule, the above makes it imperative that:

1. The study be redesigned.

2. The study be postponed until the fall of 1980 (ASA's usually occur Oct.-Feb.).

Dave and I discussed with Dr. Mikulka the administrative procedure which we felt would be necessary to accomplish the above goals. Namely, a permit addendum would have to be prepared and the Environmental Quality Commission would have to be informed of our action. We also discussed the Department's intention that the Friends of Benton County be informed of the difficulties of the study as designed, the options open to obtain study data, and the administrative procedures involved.

I also discussed the Department's desire that, until the study is complete, Evans continue the neighborhood TCE monitoring using 1 ppm sensitivity Gas Tech tubes. Dr. Mikulka assented.

Ted

wr

STATE OF OREGON

INTEROFFICE MEMO

TO: John Borden cc: FASkirvin, AQ Div. DATE: April 2, 1980

FROM: Ted Groszkiewicz via Dave St. Louis

SUBJECT: AQ-Evans Products Submicro Plant
Ambient TCE Study II
Benton County

Dave and I met with Art Boyle, Bill Dennison and Marvin Marcotte (Friends of Benton County) and Mark Boedigheimer (CH2M/Hill) on March 11, 1980 at 6:30 p.m. We discussed Dr. Rasmussen's (Oregon Graduate Center) work finding 1-7 ppb of TCE in the aluminized sample bags as background.

I expressed my concern that the variability and relative magnitude of the background TCE compared to expected ambient levels would make it difficult for the Department to evaluate the compliance status of the company with what we perceive to be a pending Federal ambient air standard for TCE. Everyone agreed that the study should document the average and worst case TCE concentrations for comparison with an enforcement of an adopted TCE ambient air standard.

Art Boyle raised the point that the weather was settling into the spring pattern of good mixing. And my suggestion that the TCE sampling be postponed until this fall was, after some discussion, favorably accepted. The discussion centered around:

1. Ensuring that the study would occur during a period when Air Stagnation Advisory days would be included in the sampling.

2. The method of sampling.

Regarding point number 2, CH2M/Hill, Dr. Rasmussen and I are now in favor of taking grab samples of the type which Dave and I took initially. Friends of Benton County representatives accepted that position providing CH2M designed a study with enough sample points to obtain representative ambient levels.

We discussed the administrative procedures involved, and I said that I would keep the Friends of Benton County informed of progress. I also requested that after their review of our proposals for permit changes the group make a written statement of their position for inclusion in a status report to the EQC.

Ted

wr

(4)

Permit Number: 22-2205
Expiration Date: 11/1/84
Page 1 of 2

AIR CONTAMINANT DISCHARGE PERMIT

Department of Environmental Quality
1234 S.W. Morrison Street
Portland, Oregon 97205
Telephone: (503) 229-5696
Issued in accordance with the provisions of
ORS 468.310

ISSUED TO: Evans Products Company
Post Office Box "E"
Corvallis, Oregon 97330

PLANT SITE: Submicroporous Battery Separator Plant
1115 SE Crystal Lake Drive
Corvallis

ISSUED BY DEPARTMENT OF ENVIRONMENTAL QUALITY

WILLIAM H. YOUNG
Director

Date

REFERENCE INFORMATION

Application No. 11616

Date Received June 8, 1979

Other Air Contaminant Sources at this Site:

Source	SIC	Permit No.
(1)		
(2)		

ADDENDUM NO. 1

In accordance with CAR Chapter 340, Section 14-040, Air Contaminant Discharge Permit No. , Condition(s) 11+13 now read (x) as follows:

11. **The permittee shall commission an ambient air study approved by the Department (to be performed by an independent contractor) to determine the concentration of trichloroethylene in the area surrounding the**

plant during the period [January] October, 1980, to [March, 1980] January, 1981, and submit the results of the study to the Department by [April 30, 1980] February 28, 1981.

13. [During the period] Until completion of the ambient air study in condition 11, the permittee shall monitor the concentration of trichloroethylene in the neighborhood adjacent to the plant on a weekly basis. Sample points shall be agreed upon in writing by the Department. Monitoring shall be conducted by Department approved methods and the results shall be reported in writing to the Department. In addition:

a. If the TCE concentration at any sample point reaches 15 parts per million the permittee shall:

(1) Notify the Department by telephone.

(2) Repeat the measurement hourly and report the results to the Department until the concentration drops below 5 ppm.

(3) Locate and correct the cause of the excessive TCE levels.

b. If the TCE concentration at any sample point reaches 25 ppm, the permittee shall repeat tests every hour. If the TCE concentration remains at or above 25 ppm for six (6) hours, the permittee shall cease TCE emitting operations at the plant unless otherwise authorized by the Department. Hourly sampling shall continue until the TCE concentration drops below 5 ppm. Those TCE emitting operations shall not be resumed without authorization from the Department.

VICTOR ATIYEH
GOVERNOR

Department of Environmental Quality

522 SOUTHWEST 5TH AVE. PORTLAND, OREGON

MAILING ADDRESS: P.O. BOX 1760, PORTLAND, OREGON 97207

MEMORANDUM

To: Governor Victor Atiyeh

From: William H. Young

Subject: Federal Sewerage Works Construction Grants

President Carter's proposals for reducing federal spending to achieve a balanced Federal Budget in FY 81 were announced March 31, 1980.

Although our full evaluation is incomplete, to date we have identified one area where the President's proposed action appears to unfairly impact Oregon compared to a majority of other states.

The President has placed a freeze on the award of Federal Sewerage Works Construction Grants from current year (FY 80) funds until at least September 1980 with release of funds to be regulated thereafter. This action is intended to reduce actual federal cash outlay during FY 81 by $95 million.

EPA has advised us that this proposal was made with full knowledge that it would:

--essentially shut down sewage works construction programs in 9 states and 2 territories, including Oregon.
--slightly impact 28 states' programs.
--have essentially no impact on the programs of 13 states.

The states severely impacted are the ones who have diligently pursued the intent of Congress to curb water pollution, and have used all of their allocated FY 79 Construction Grant funds during FY 79. Those states that are still trying to use FY 79 funds can continue "business as usual" until the funds are exhausted.

It is my understanding that 13 states will have to speed up their programs and spending to use their FY 79 funds before the obligation deadline of September 30, 1980. Indeed, EPA projects $1.192 billion or 28 percent of the FY 79 authorization to be obligated by grant award in the 8th quarter or last 3 months of allowed 2-year obligation period.

We should seek immediate congressional action to extend the September 30, 1980, obligation deadline for FY 79 funds by at least one year and direct EPA to administratively act to assure that whatever slowdown in grant awards is needed to achieve the FY 81 cash outlay reduction is equitably distributed among all states in proportion to their formula share of the annual national allotment--without regard to the fiscal year origin of funds.

This action would permit release of some FY 80 funds to those states now "shut down". In Oregon's case this would permit minimal continued progress on critical projects presently under construction but would probably not allow initiation of new construction projects.

WL1319.A (w)