Oregon
Theodore R. Kulongoski, Governor

Department of Land Conservation and Development
635 Capitol Street NE, Suite 150
Salem, Oregon 97301-2524
Phone: (503) 373-0050
First Floor/Costal Fax: (503) 378-6033
Second Floor/Director's Office: (503) 378-5518
Web Address: http://www.oregon.gov/LCD

NOTICE OF ADOPTED AMENDMENT

July 25, 2006

TO: Subscribers to Notice of Adopted Plan
or Land Use Regulation Amendments

FROM: Mara Ulloa, Plan Amendment Program Specialist

SUBJECT: Lane County Plan Amendment
DLCD File Number 019-04

The Department of Land Conservation and Development (DLCD) received the attached notice of adoption. Due to the size of amended material submitted, a complete copy has not been attached. A copy of the adopted plan amendment is available for review at the DLCD office in Salem and the local government office.

Appeal Procedures*

DLCD ACKNOWLEDGMENT or DEADLINE TO APPEAL: August 9, 2006

This amendment was submitted to DLCD for review 45 days prior to adoption. Pursuant to ORS 197.830 (2)(b) only persons who participated in the local government proceedings leading to adoption of the amendment are eligible to appeal this decision to the Land Use Board of Appeals (LUBA).

If you wish to appeal, you must file a notice of intent to appeal with the Land Use Board of Appeals (LUBA) no later than 21 days from the date the decision was mailed to you by the local government. If you have questions, check with the local government to determine the appeal deadline. Copies of the notice of intent to appeal must be served upon the local government and others who received written notice of the final decision from the local government. The notice of intent to appeal must be served and filed in the form and manner prescribed by LUBA, (OAR Chapter 661, Division 10). Please call LUBA at 503-373-1265, if you have questions about appeal procedures.

***NOTE:** **THE APPEAL DEADLINE IS BASED UPON THE DATE THE DECISION WAS MAILED BY LOCAL GOVERNMENT. A DECISION MAY HAVE BEEN MAILED TO YOU ON A DIFFERENT DATE THAN IT WAS MAILED TO DLCD. AS A RESULT YOUR APPEAL DEADLINE MAY BE EARLIER THAN THE ABOVE DATE SPECIFIED.**

Cc: Doug White, DLCD Community Services Specialist
Marguerite Nabeta, DLCD Regional Representative
Ron Eber, DLCD Farm/Forest Specialist
Jerry Kendall, Lane County

<paa> ya/

FORM 2

D L C D NOTICE OF ADOPTION

This form **must be mailed** to DLCD **within 5 working days after the final decision**
per ORS 197.610, OAR Chapter 660 - Division 18

(See reverse side for submittal requirements)

DEPT OF
JUL 21 2006
LAND CONSERVATION
AND DEVELOPMENT

Jurisdiction: LANE COUNTY Local File No.: PA 04-6092
(If no number, use none)

Date of Adoption: 7-12-06 Date Mailed: 7-19-06
(Must be filled in) (Date mailed or sent to DLCD)

Date the Notice of Proposed Amendment was mailed to DLCD: AM RESEARCHING - WILL EMAIL DATE

___ Comprehensive Plan Text Amendment
__✓__ Comprehensive Plan Map Amendment
___ Land Use Regulation Amendment
__✓__ Zoning Map Amendment
___ New Land Use Regulation
___ Other: _____
(Please Specify Type of Action)

Summarize the adopted amendment. Do not use technical terms. Do not write "See Attached."

PLAN AMENDMENT AND ZONE CHANGE FROM "AGRICULTURAL" TO "MARGINA LAND" AND FROM "E-40/EXCLUSIVE FARM USE" TO "ML/SR(MARGINAL LAND WITH SITE REVIEW".

Describe how the adopted amendment differs from the proposed amendment. If it is the same, write "Same." If you did not give notice for the proposed amendment, write "N/A."

SITE REVIEW WAS ADDED TO LIMIT PROPOSAL TO ELEVEN PARCELS MAXIMUM.

Plan Map Changed from : AGRICULTURAL to MARGINAL LAND
Zone Map Changed from: E-40/RCP to ML/SR - RCP
Location: 18S-04W-24 #300 Acres Involved: 316 ac.
Specify Density: Previous: 40 ac. New: 10-20 ac.
Applicable Statewide Planning Goals: 2, 4, 3, 5, 6, 11, 12
Was an Exception Adopted? Yes:____ No: ✓

DLCD File No.: 019-04(14041)

Did the Department of Land Conservation and Development receive a notice of Proposed Amendment **FORTY FIVE (45) days prior to the first evidentiary hearing**. Yes: ___ No: ✓

If no, do the Statewide Planning Goals apply. Yes: ✓ No: ___

If no, did The Emergency Circumstances Require immediate adoption. Yes: ___ No: ___

Affected State or Federal Agencies, Local Governments or Special Districts: _____

Local Contact: JERRY KENDALL Area Code + Phone Number: 541-682-4057

Address: PSB/LMD 125 E. 8th AVE.

City: EUGENE Zip Code+4: 97401+2926

ADOPTION SUBMITTAL REQUIREMENTS

This form **must be mailed** to DLCD **within 5 working days after the final decision**
per ORS 197.610, OAR Chapter 660 - Division 18.

1. Send this Form and **TWO (2) Copies** of the Adopted Amendment to:

ATTENTION: PLAN AMENDMENT SPECIALIST
DEPARTMENT OF LAND CONSERVATION AND DEVELOPMENT
635 CAPITOL STREET NE, SUITE 150
SALEM, OREGON 97301-2540

2. Submit **TWO (2) copies** the adopted material, if copies are bounded please submit **TWO (2) complete copies** of documents and maps.

3. Please Note: Adopted materials must be sent to DLCD not later than **FIVE (5) working days** following the date of the final decision on the amendment.

4. Submittal of of this Notice of Adoption must include the text of the amendment plus adopted findings and supplementary information.

5. The deadline to appeal will be extended if you submit this notice of adoption within five working days of the final decision. Appeals to LUBA may be filed within **TWENTY-ONE (21) days** of the date, the "Notice of Adoption" is sent to DLCD.

6. In addition to sending the "Notice of Adoption" to DLCD, you must notify persons who participated in the local hearing and requested notice of the final decision.

7. **Need More Copies?** You can copy this form on to 8-1/2x11 green paper only ; or call the DLCD Office at (503) 373-0050; or Fax your request to:(503) 378-5518; or Email your request to Larry.French@state.or.us - ATTENTION: PLAN AMENDMENT SPECIALIST.

ADOPTION of
019-04
(14041)

Mailing Date: July 19 2006

LAND MANAGEMENT DIVISION
http://www.LaneCounty.org/PW_LMD/

To: Interested Parties
From: Jerry Kendall/Associate Planner (541-682-4057) JK
Re: PA 04-6092: Plan Amendment & Zone Change (Dahlen)

On July 12, 2006, via Ordinance No. PA 1231 (excerpt enclosed), the Board of Commissioners approved a Plan Amendment and Zone change for the subject parcel. If you wish a full copy, it is also available on the county's website, at www.lanecounty.org (Departments/Board of Commissioners/Orders/2006.... find item).

Any appeal of this decision must be filed in a timely manner with the Land Use Board of Appeals (LUBA) in Salem. Refer to OAR 661, Division 10, for "Rules of Procedure for Appeals".

For more information on the appeal process, contact LUBA at:

LUBA
550 Capitol St., NE, Suite 235
Salem, Or. 97301-2552

Phone: 503-373-1265

Luba's website is http://luba.state.or.us/

DEPT OF
JUL 20 2006
LAND CONSERVATION
AND DEVELOPMENT

BEFORE THE BOARD OF COUNTY COMMISSIONERS OF LANE COUNTY, OREGON

ORDINANCE NO. PA 1231) IN THE MATTER OF AMENDING THE RURAL COMPREHENSIVE PLAN TO REDESIGNATE LAND FROM "AGRICULTURAL" TO "MARGINAL LAND" AND REZONING 0F THAT LAND FROM "E-40/EXCLUSIVE FARM USE" TO "ML/SR" ("MARGINAL LAND WITH SITE REVIEW"), AND ADOPTING SAVINGS AND SEVERABILITY CLAUSES (file PA 04-6092; Dahlen)

WHEREAS, the Board of County Commissioners of Lane County, through enactment of Ordinance PA 884, has adopted Land Use Designations and Zoning for lands within the planning jurisdiction of the Lane County Rural Comprehensive Plan; and

WHEREAS, Lane Code 16.400 sets forth procedures for amendment of the Rural Comprehensive Plan, and Lane Code 16.252 sets forth procedures for rezoning lands within the jurisdiction of the Rural Comprehensive Plan; and

WHEREAS, in September 2004, application no. PA 04-6092 was made for a minor amendment to redesignate portions of tax lot 300 of map 18-04-24, from "Agriculture Land" to "Marginal Land" and concurrently rezone the property from "E-40/Exclusive Farm Use " to "ML/Marginal Land"; and

WHEREAS, the Lane County Planning Commission reviewed the proposal in public hearing of February 15, 2005, and on June 7, 2005, deliberated and forwarded the matter to the Board with a recommendation for denial; and

WHEREAS, evidence exists within the record indicating that the proposal now meets the requirements of Lane Code Chapter 16, and the requirements of applicable state and local law; and

WHEREAS, the Board of County Commissioners has conducted a public hearing and is now ready to take action;

NOW, THEREFORE, the Board of County Commissioners of Lane County Ordains as follows:

Section 1. The Lane County Rural Comprehensive Plan is amended by the redesignation the tax lot 300 of map 18-04-24, from "Agricultural Land" to "Marginal Land," such territory depicted on Plan Plot 334 and further identified as Exhibit "A" attached and incorporated herein.

Section 2. Tax lot 300 of map 18-04-24, is rezoned from "E-40/Exclusive Farm Use" (Lane Code 16.212) to "ML/SR" ("Marginal Land with Site Review") (Lane Code 16.214 & LC 16.257), such territory depicted on Rural Zoning Plot 334 and further identified as Exhibit "B" attached and incorporated herein. The exclusive purpose of the Site Review suffix is to limit any subsequent division of the subject property to a maximum of eleven lots, as so represented by the Applicant.

FURTHER, although not a part of this Ordinance, the Board of County Commissioners adopts Findings as set forth in Exhibit "C" attached, in support of this action.

The prior designation and zone repealed by this Ordinance remain in full force and effect to authorize prosecution of persons in violation thereof prior to the effective date of this Ordinance.

If any section, subsection, sentence, clause, phrase or portion of this Ordinance is for any reason held invalid or unconstitutional by any court of competent jurisdiction, such portion shall be deemed a separate, distinct and independent provision, and such holding shall not affect the validity of the remaining portions hereof.

ENACTED this 12th day of July, 2006.

Bill Dwyer, Chair
Lane County Board of County Commissioners

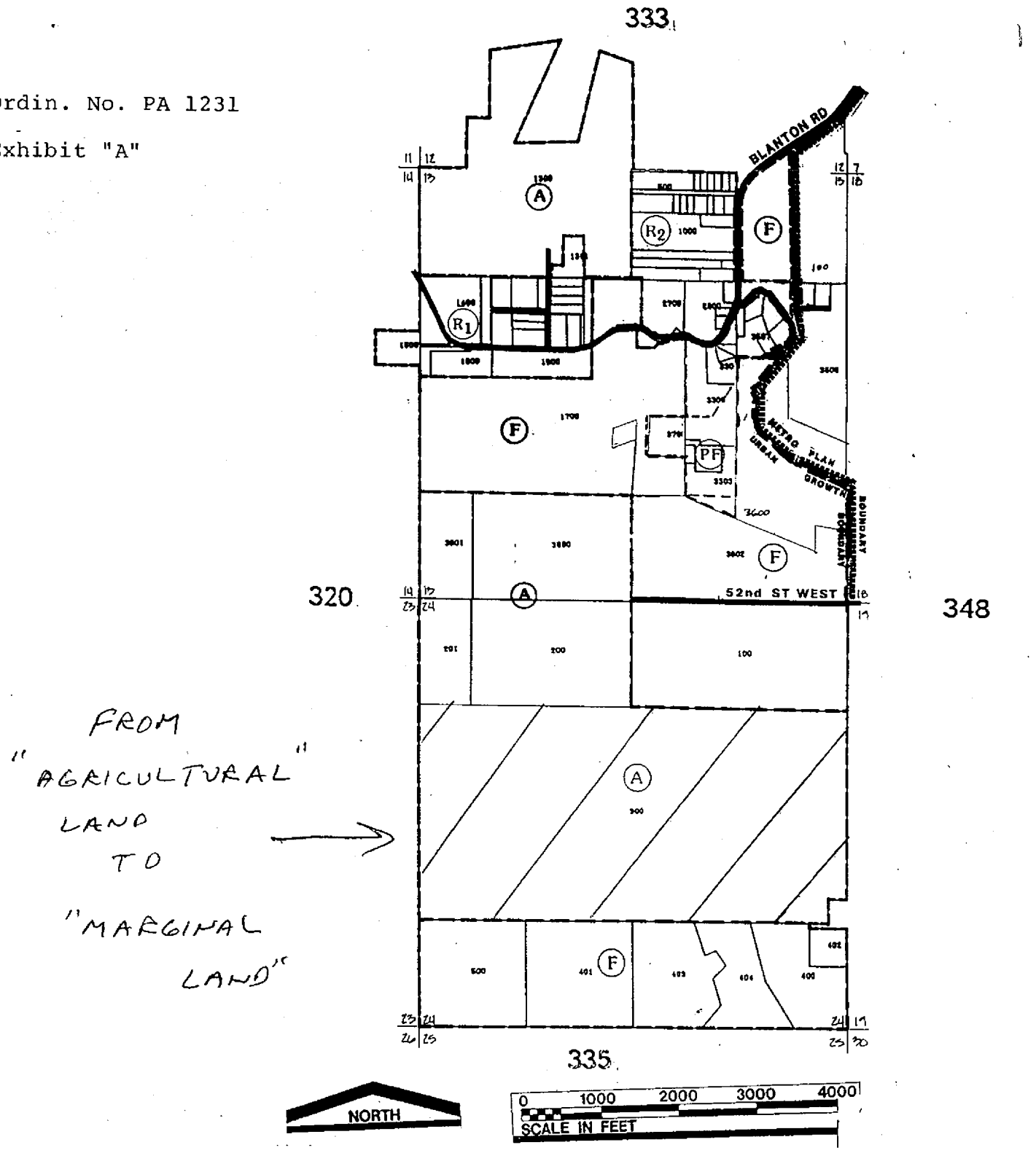
Recording Secretary for this Meeting of the Board

APPROVED AS TO FORM
Date 3-29-2006 Lane County
OFFICE OF LEGAL COUNSEL

ORDINANCE PA1231/IN THE MATTER OF AMENDING THE RURAL COMPREHENSIVE PLAN TO REDESIGNATE LAND FROM "AGRICULTURAL" TO "MARGINAL LAND" AND REZONING THAT LAND FROM "E-40/EXCLUSIVE FARM USE" TO "ML/SR" ("MARGINAL LAND WITH SITE REVIEW"), AND ADOPTING SAVINGS AND SEVERABILITY CLAUSES (file PA 04-6092; Dahlen)

Ordin. No. PA 1231

Exhibit "A"



FROM "AGRICULTURAL" LAND TO "MARGINAL LAND"

lane county

OFFICAL PLAN MAP

PLOT# 334

Twnshp Range Section

18 04 13 / 18 04 24 ( )

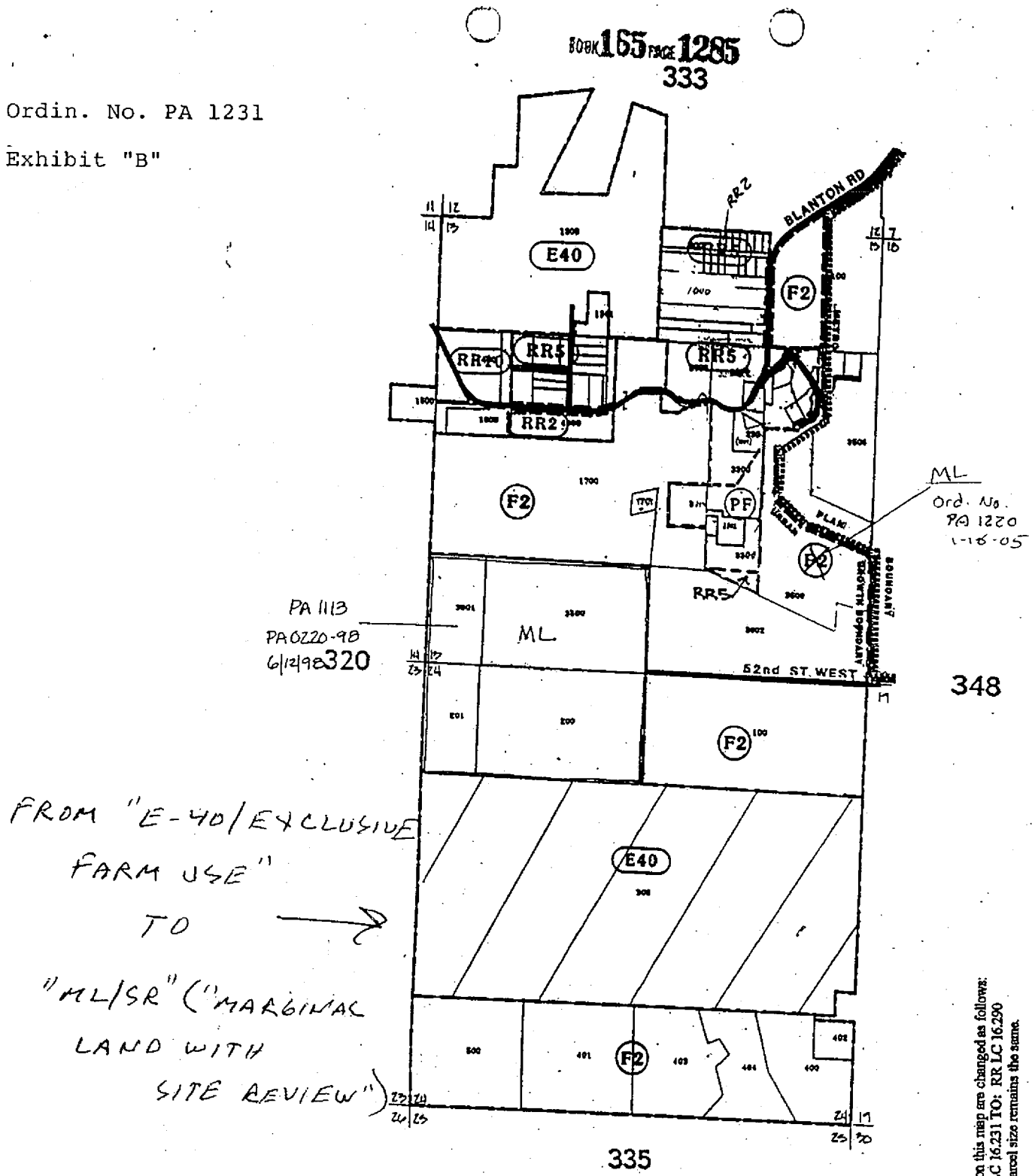
ORIGINAL ORD. # PA 884 DATE 2/29/1984 FILE # _____

REVISION # 2 ORD. # PA1038 DATE 6 /18 / 93 FILE # PA2761-91

Ordin. No. PA 1231

Exhibit "B"

BOOK 165 PAGE 1285
333



The zones on this map are changed as follows:
From: RG, RA [redacted] To: RR2
From: CR, C1, C2, & C3 To: RC Rural Commercial
From: M1, M2, & M3 To: R1 Rural Industrial
From: PF To: RPF Rural Public Facility
From: PR To: RPR Rural Park & Recreation

NORTH

The RR zones on this map are changed as follows:
FROM: RR LC 16.231 TO: RR LC 16.290
The RR zone parcel size remains the same.

ane county

OFFICIAL ZONING MAP

PLOT# 334

Twnshp Range Section
18 04 13 / 18 04 24

ORIGINAL ORD. # PA 884 DATE 2/29/1984 FILE #

REVISION # 3 ORD. # PA1038 DATE 6/18/98

BEFORE THE BOARD OF COUNTY COMMISSIONERS OF LANE COUNTY, OREGON

ORDINANCE NO. PA 1231	**) IN THE MATTER OF AMENDING THE RURAL COMPREHENSIVE PLAN TO REDESIGNATE LAND FROM "AGRICULTURAL" TO "MARGINAL LAND" AND REZONING 0F THAT LAND FROM "E-40/EXCLUSIVE FARM USE" TO "ML/SR" ("MARGINAL LAND WITH SITE REVIEW"), AND ADOPTING SAVINGS AND SEVERABILITY CLAUSES (file PA 04-6092; Dahlen)**

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Bill Dwyer, Chair
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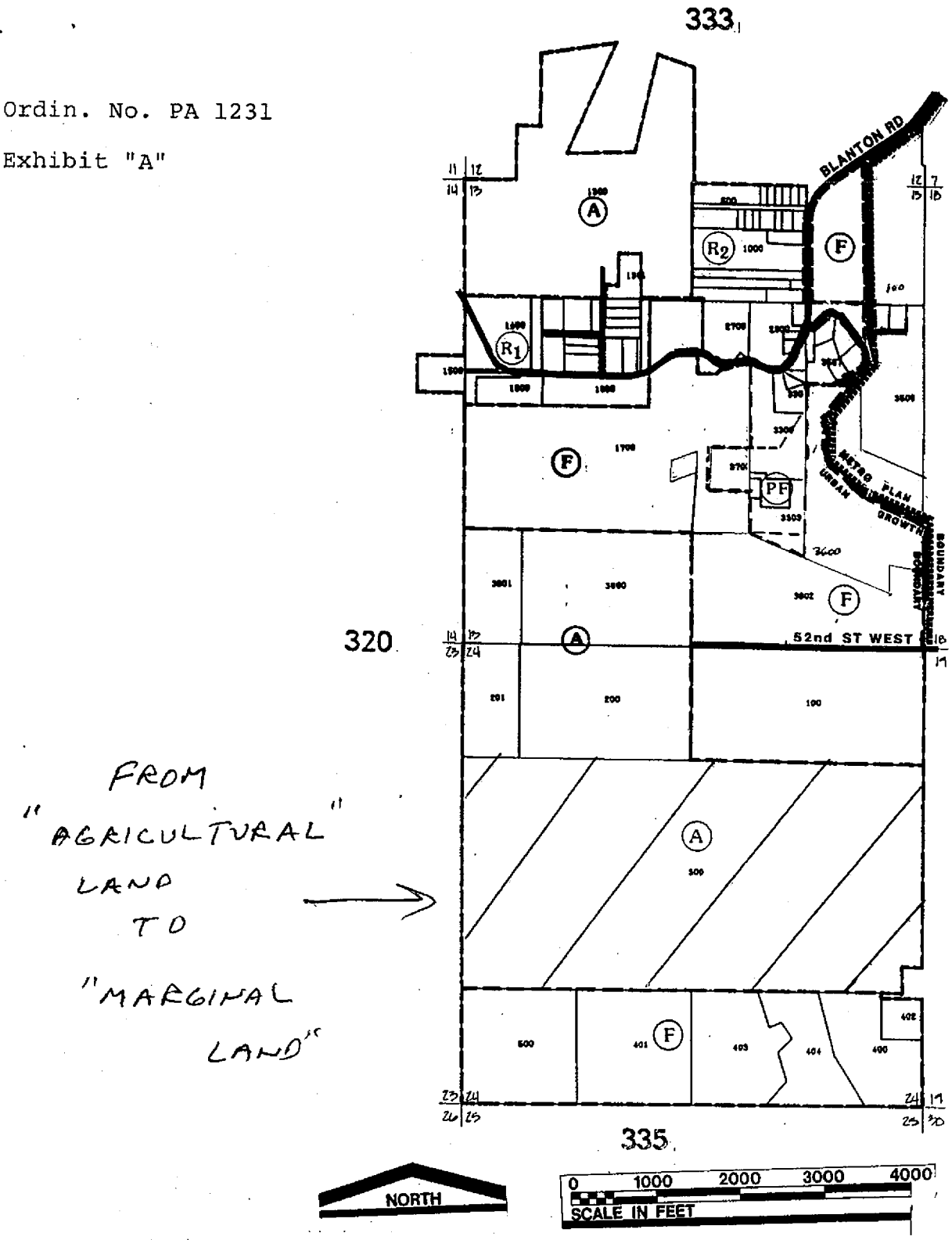
Recording Secretary for this Meeting of the Board

APPROVED AS TO FORM
Date 3-29-2006 Lane County
OFFICE OF LEGAL COUNSEL

ORDINANCE PA1231/IN THE MATTER OF AMENDING THE RURAL COMPREHENSIVE PLAN TO REDESIGNATE LAND FROM "AGRICULTURAL" TO "MARGINAL LAND" AND REZONING THAT LAND FROM "E-40/EXCLUSIVE FARM USE" TO "ML/SR" ("MARGINAL LAND WITH SITE REVIEW"), AND ADOPTING SAVINGS AND SEVERABILITY CLAUSES (file PA 04-6092; Dahlen)

Ordin. No. PA 1231

Exhibit "A"



FROM "AGRICULTURAL" LAND TO "MARGINAL LAND"

lane county

OFFICAL PLAN MAP

PLOT# 334

Twnshp Range Section

18 04 13 / 18 04 24 ( )

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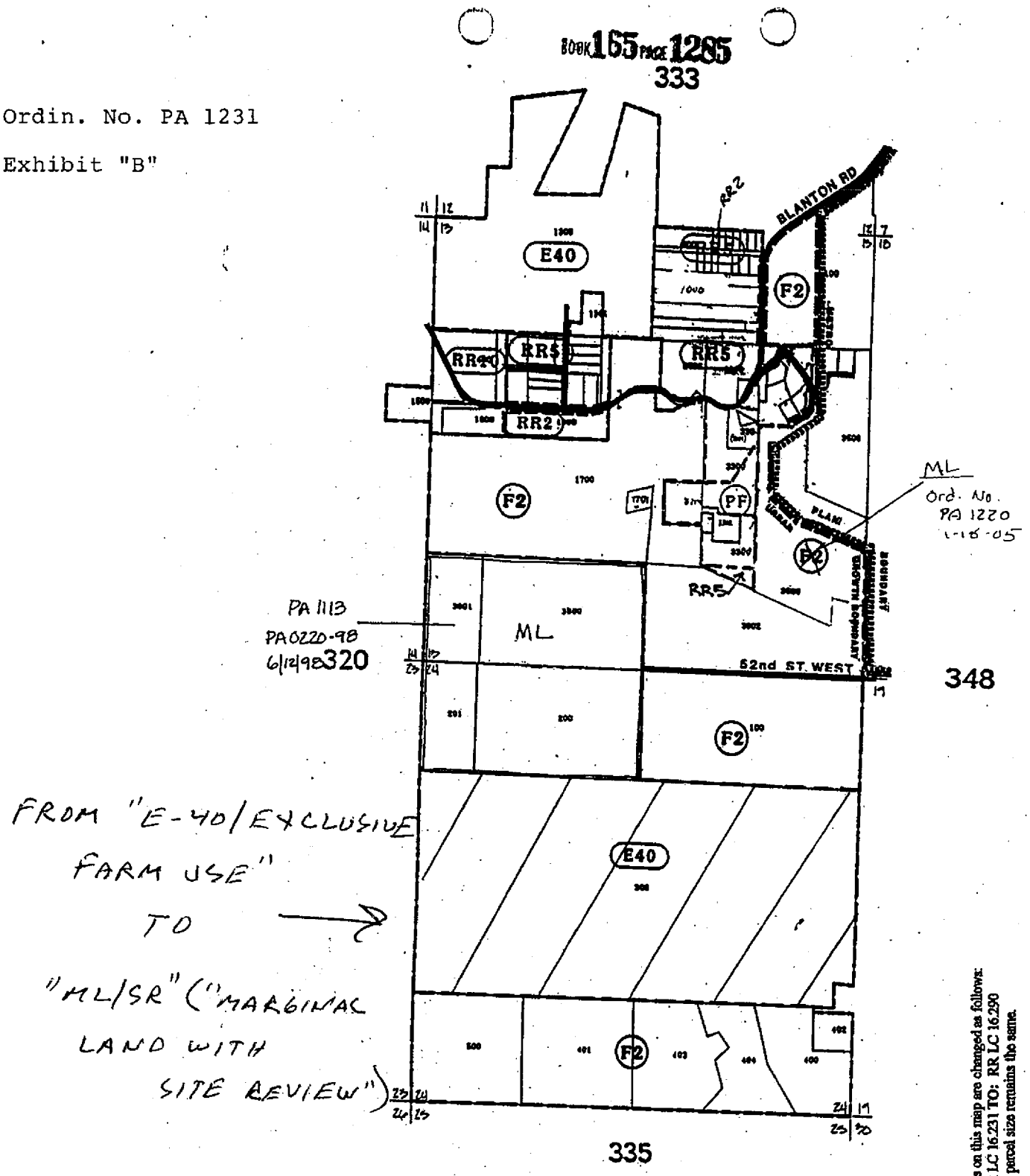
REVISION # 2 ORD. # PA1038 DATE 6/18/93 FILE # PA2781-91

Ordin. No. PA 1231

Exhibit "B"

BOOK 165 PAGE 1285

333



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ane county

OFFICIAL ZONING MAP

PLOT# 334

Twnshp Range Section
18 04 13 / 18 04 24

ORIGINAL ORD. # PA 884 DATE 2/29/1984 FILE #

REVISION # 3 ORD. # PA1038 DATE 6/18/93

ORDINANCE NO. PA 1231 – Exhibit C

FINDINGS OF FACT AND CONCLUSIONS OF LAW

for

MINOR AMENDMENT OF THE LANE COUNTY

RURAL COMPREHENSIVE PLAN

and

ZONE CHANGE FROM EXCLUSIVE FARM USE

to

MARGINAL LAND

PA 04-6092

KAREN A. DAHLEN TRUST

P.O. BOX 5687

Eugene, OR 97405-0687

PROPOSAL

Applicant:	Karen A. Dahlen
Property Owner:	Karen A. Dahlen Trust
Property Location:	Located approximately ½ mile south of Eugene city limits, west of Willamette Street
Assessor's Map and Lot:	Assessor's Map No. 18-04-24-0300
Current County Zoning:	Exclusive Farm Use (EFU 30)
Attorney-Consultant:	P. Steven Cornacchia Hershner Hunter 180 E. 11th Avenue Eugene, Oregon 97401

1. **EVIDENCE.**

1.1 Application materials dated September 15, 2004, with exhibits;

1.2 Lane County Planning Commission Staff Report with attachments;

1.3 Marc Setchko Report, dated February 15, 2005.

1.4 Correspondence from Steve Cornacchia, dated April 19, 2005, with exhibits, including March 27, 2005, Setchko report;

1.5 Correspondence from Steve Cornacchia, dated May 24, 2005;

1.6 Correspondence from Steve Cornacchia, with exhibits, dated July 18, 2005;

1.7 Correspondence from Steve Cornacchia, dated July 25, 2005, with attachments, including a copy of LUBA Decision No. 2005-029, James Just v. Lane County (Carver) and affidavits of Art Moshofsky and Mark Minty;

1.8 Agronomic Analytics Dahlen Property Soil Investigation Report;

1.9 Correspondence, with exhibits, from Steve Cornacchia, dated September 29, 2005;

1.10 Correspondence, with exhibits, from Steve Cornacchia, dated May 9, 2006.

2. **INTRODUCTION.**

The property that is the subject of this application consists of a 316-acre parcel located immediately south of, but not adjacent to, the Eugene city limits and the Eugene-Springfield Metropolitan Plan Urban Growth Boundary, west off of Willamette Street. This application is for approval of a Minor Plan Amendment to the Lane County Rural Comprehensive Plan (RCP) diagram to designate the subject property from Agriculture to Marginal Lands, and a concurrent Lane County zoning map amendment from Exclusive Farm Use (EFU 30) to Marginal Lands (MLRCP).

3. **BACKGROUND INFORMATION**

3.1 **General Site Description.**

The subject property is described as Tax Lot 300 of Lane County Assessor's Map No. 18-04-24. Immediately to the east of the property is located Tax Lot 1300 of Lane County Assessor's Map

No. 18-03-19, a parcel of land consisting of approximately 67.16 acres, zoned Marginal Lands (ML) and owned by the applicant.

Property adjacent to the southern boundary of the subject property consists of six small parcels, all zoned Impacted Forest (F-2). Tax Lots 18-04-24-100 and 102 are adjacent to the northeast boundary of the subject property and are also zoned Impacted Forest (F-2). Tax Lots 18-04-24-200 and 201 are adjacent to the northwest boundary of the subject property and are zoned Marginal Lands (ML). Tax Lot 18-04-23-204 is adjacent to the western boundary of the subject property and is zoned Impacted Forest (F-2).

The subject property receives the following public services: Eugene School District 4J (schools); Lane Electric Co-op (electrical power); Eugene Rural Fire Protection District 1(fire and ambulance); Qwest (telephone); LTD (bus service); Lane County Sheriff's Department and Oregon State Police.

3.2 **Description of Proposed Amendments.** The application before Lane County is for approval of the following:

a. An amendment to the county's comprehensive plan and map designating the subject property as Marginal Lands and re-zoning it to Marginal Lands (ML).

b. The Lane County Board of Commissioners also finds as follows:

4. PLAN AMENDMENT CRITERIA OF LANE CODE 16.400

This application to amend the Lane County Rural Comprehensive Plan was initiated by Karen Dahlen on September 15, 2004.

The following criteria apply to amendments of the comprehensive plan:

4.1 Lane Code 16.400(6)(h)(iii) (Method of Adoption and Amendment) provides that the Board may amend or supplement the Rural Comprehensive Plan upon making the following findings

(aa) For Major and Minor Amendments as defined in LC 16 400(8)(a) below, the Plan component or amendment meets all applicable requirements of local and state law, including Statewide Planning Goals and Oregon Administrative Rules

(bb) For Major and Minor Amendments as defined in LC 16.400(8)(a) below, the Plan amendment or component is:

(i-i) necessary to correct an identified error in the Plan; or

(ii-ii) necessary to fulfill an identified public or community need for the intended result of the component or amendment; or

(iii-iii) necessary to comply with the mandate of local, state or federal policy or law; or

(iv-iv) necessary to provide for the implementation of adopted Plan policy or elements, or

(v-v) otherwise deemed by the Board, for reasons briefly set forth in its decisions, to be desirable, appropriate or proper.

(cc) For Minor Amendments as defined in LC 16.400(8)(a), the Plan amendment or component does not conflict with adopted Policies of the Rural Comprehensive Plan and if possible, achieves policy support.

4.2 Lane Code 16.400(6)(i) provides that a change of zoning to implement a proposed Plan amendment may be considered concurrently with such amendment. In such case, the Board shall also make the final zone change decision, and the Hearings Official's consideration need not occur.

4.3 Lane Code 16.400(6)(h)(iii)(aa).

For Major and Minor Amendments as defined in LC 16 400(8)(a) below, the Plan component or amendment meets all applicable requirements of local and state law, including Statewide Planning Goals and Oregon Administrative Rules.

(1) **Goal 1 - Citizen Involvement.**

To ensure the opportunity for citizen involvement in all phases of the planning process.

Lane County has provided written notice of the proposed amendments and public hearings before its planning commission and board of commissioners in conformance with ORS 197.763. The information included in the notices conforms with ORS 197.763 (2) and (3) and enabled citizens to identify and comprehend the issues and to participate in a public process prior to final action by the county. Referral notices were also mailed to all federal, state, and private organizations as required by state law and Lane Code. The proposed amendments have been processed in a manner that assures full compliance with Goal 1.

(2) **Goal 2 - Land Use Planning.**

To establish a land use planning process and policy framework as a basis for all decisions and actions related to the use of land and to assure an adequate factual base for such decisions and actions.

Goal 2 establishes a land use planning process and policy framework as a basis for all land use decisions, and requires development of an adequate factual base to support those decisions. A minor change is one that does not have significant effects beyond the immediate area of change, and is based on special studies or information. The justification for the specific change must be established by substantial evidence in support of the conclusion that the applicable criteria have been met.

Lane County has adopted a comprehensive land use plan amendment process with specific standards that must be addressed to justify a minor change. Substantial compliance with the plan amendment criteria in Lane Code (LC)16.400 constitutes compliance with the applicable provisions. This plan amendment must also address and satisfy the criteria set forth in ORS 197.247 (1991 ed.). This application is supported by substantial evidence upon which the Lane County Board of Commissioners conclude that the applicable criteria have been met.

(3) Goal 3 - Agricultural Land.

To preserve and maintain agricultural lands.

The subject property is not agricultural land as defined by Goal 3. It contains soils predominantly classified as Class V-VII by the Soil Conservation Service and is of low suitability for farming as discussed in Section 4.2 below. Accordingly, this decision is consistent with Goal 3.

(4) Goal 4 - Forest Lands.

To preserve forest lands for forest use.

The subject property is not suitable for growing and sustaining Douglas-fir or other less merchantable tree species as discussed more fully in Section 4.2 below. No other species would grow as fast on the subject property or be as valuable and merchantable as Douglas-fir. Zoning the property for Marginal Lands maintains the property in a resource zone and capable of being used for limited, marginal, resource uses. The subject property's suitability for growing and sustaining merchantable tree species is discussed more fully in Section 4.2 below. Accordingly, this decision is consistent with Goal 4.

(5) Goal 5 - Open Space, Scenic and Historic Areas, and Natural Resource.

To conserve open space and protect natural and scenic resources.

Goal 5 is not applicable to this request. There has previously been a legislative determination by Lane County, as embodied in the acknowledged Lane County Rural Comprehensive Plan, that no Goal 5 resources exist on subject site. The subject property has not been included in any inventory of needed open space or scenic areas defined by Goal 5, nor has it been identified in the comprehensive plan as having any historic, cultural or natural resources which need to be preserved and/or protected. The proposed amendments will not conflict with any Goal 5 resources.

(6) Goal 6 - Air, Water and Land Resources Quality.

To maintain and improve the quality of the air, water and land resources of the state.

Goal 6 requires that air, land and water resources of the state be maintained and improved by assuring that future development, in conjunction with existing development, does not violate applicable state and federal environmental quality standards, and does not exceed the carrying capacity of local air sheds, degrade land resources or threaten the availability of such resources. Lane County has sufficient regulatory measures in place so as to ensure that existing land use activities, as well as any future development on the site, will not produce any unanticipated impacts resulting from the proposed amendments.

The subject property lies within an area identified as a "broad areas of very limited groundwater" area in Lane Manual 13.010 and the availability of water commensurate with the proposed development of the subject property is demonstrated by the analysis and conclusions of EGR and Associates, Inc. (EGR). The results of the aquifer analysis by EGR, dated July 27, 2004, are provided as evidence by the attachment of the analysis to the original application as Exhibit E.

In that aquifer analysis EGR concludes that there is sufficient water available for domestic use from the aquifer for all of the proposed parcels without adverse effects to neighboring wells. The record contains no other evidence from professional consultants that the analysis and conclusion of EGR is inaccurate or in error. The EGR report is sufficient and substantial evidence of the availability of water on the subject property and within its vicinity and demonstrates that application approval would be consistent with Goal 6.

The proposed amendments will not produce results that will be in conflict or inconsistent with the purpose and intent of Goal 6. The proposed amendments change the use designation on the subject property and any additional uses or change of use will require compliance with Lane County's existing regulatory system and measures.

(7) Goal 7 - Areas subject to Natural Disasters and Hazards.

To protect life and property from natural disasters and hazards.

No areas containing or prone to natural disasters or natural hazards have been identified on the subject property.

(8) Goal 8 - Recreational Needs.

To satisfy the recreational needs of the citizens of the state.

Goal 8 is not applicable to this request. There has previously been a legislative determination by Lane County, as embodied in the acknowledged Lane County Rural Comprehensive Plan, that no Goal 8 resources exist on subject site. The subject property has not been included in any inventory of recreational needs as defined by Goal 8. The proposed amendments will not conflict with any Goal 8 resources.

(9) Goal 9 - Economy of the State.

To diversify and improve the economy of the state.

Goal 9 is directed towards the comprehensive plans of the state's political subdivisions. Lane County's Rural Comprehensive Plan has been acknowledged by the Land Conservation and Development Commission. Goal 9 is primarily focused on commercial and industrial development within urban areas. OAR 660-009-0010(1) specifically limits the application of Goal 9 to comprehensive plans for areas within urban growth boundaries. Goal 9 is not directly applicable to rural residential use in a non-resource designation.

Approval of the subject application will allow the subject property to be developed with eleven additional home sites. Goal 9 has limited, if any, applicability to the subject application.

(10) **Goal 10 – Housing.**

To provide for the housing needs of the citizens of the state.

Approval of this application would result in the development of up to eleven additional dwellings on the subject property. Approval of this application would be consistent with Goal 10.

(11) **Goal 11 - Public Facilities and Services.**

To plan and develop a timely, orderly and efficient arrangement of public facilities and services to serve as a framework for urban development.

The subject property receives the following public services: Eugene School District 4J (schools); Lane Electric Co-op (electrical power); Eugene Rural Fire Protection District 1(fire and ambulance); Qwest (telephone); LTD (bus service); Lane County Sheriff's Department and Oregon State Police.

The subject property has access to the full range of public services specified for Communities in RCP Goal 11: Public Facilities and Services, Policy 6.j. No additional public facilities and services will be required beyond the present level. While Goal 11 is couched in terms of urban development, approval of the application will not result in any urban level of development in a rural area. The public services identified above are adequate to serve the level of rural uses that the application envisions and provide the demonstration of consistency with Goal 11.

(12) **Goal 12 – Transportation.**

The intent of Goal 12 is implemented through the provisions of the State Transportation Planning Rule (TPR) (OAR 660, Division 12), which was adopted by LCDC in 1991.

OAR 660-012-0060(1) requires that amendments to functional plans, acknowledged comprehensive plans, and land use regulations which significantly affect a transportation facility shall assure that allowed land uses are consistent with the identified function, capacity, and level of service of the facility.

To determine whether the proposed amendments will significantly affect a transportation facility, the TPR lists specific criteria against which the proposed amendments are to be evaluated. The

TPR provides that a plan or land use regulation amendment significantly affects a transportation facility if it:

> (a) Changes the functional classification of an existing or planned transportation facility;
>
> (b) Changes standards implementing a functional classification system;
>
> (c) Allows types or levels of land uses which would result in levels of travel or access which are inconsistent with the functional classification of a transportation facility; or,
>
> (d) Would reduce the level of service of the facility below the minimum acceptable level identified in the TSP (Transportation System Plan).

The Board finds that the approval of the proposal cannot result in any of the four situations provided by the TPR criteria listed above. Development of 11 parcels with dwellings will produce typically 10 trips per day for each parcel, resulting in a total trip per day count of approximately 110. Willamette Street, a major collector, will not experience a change in its functional classification as a result of an additional 110 trips per day and the total trips per day are not inconsistent for a major collector and will not reduce the level of service below the minimum acceptable level identified in the TSP (Transportation System Plan).

The engineering firm Branch Engineering has analyzed the traffic impact resulting from approval of the application and has concluded that it would not have a significant impact on transportation facilities.

Application approval is consistent with Goal 12.

(13) Goal 13 - Energy Conservation.

To conserve energy.

Goal 13 requires that land uses maximize conservation of all forms of energy based on sound economic principles. It is implemented by local plans and regulations that control location, orientation and density of development to minimize net energy consumption. Any development on the subject property will be subject to those rules.

(14) Goal 14 – Urbanization.

To provide for an orderly and efficient transition from rural to urban land use.

OAR 660-004-0040(2)(c)(G) specifically exempts marginal land from the provisions of Goal 14 and its implementing rules. The rule specifically states that it does not apply to marginal land. Upon application approval the subject property will be designated marginal land. Therefore, Goal 14 is has little, if any, application to this application.

The entire ownership of the applicant is within an area committed to rural uses, both resource and non-resource in nature, as designated and provided by Lane Code and the acknowledged Lane County Rural Comprehensive Plan. No urban uses are contemplated as a result of

approval of this application. No extension of urban services is necessary as a result of approval of this application. Approval of this application will not change the uses made on the subject parcel from rural to urban.

The uses on the subject parcels resulting from approval of this application would be resource and rural residential, both of which are rural in nature. The uses are not considered urban by the code in its implementation of the acknowledged Lane County Rural Comprehensive Plan. Therefore, approval of this application would not result in the establishment of urban land use or urban land use in transition from rural land use.

All parcels resulting from approval of the subject application shall be no less than 10 acres in size which will not prevent further urban development in the future if the subject property is included within the UGB and city limits.

Approval of the application will not result in any level of urbanization of the subject property or the surrounding area and, therefore, is consistent with Goal 14 as the goal may be relevant to the application.

(15) **Goal 15 - Willamette River Greenway.**

To protect, conserve, enhance and maintain the natural, scenic, historical, agricultural, economic and recreational qualities of lands along the Willamette River as the Willamette River Greenway.

The subject property is not located within the Willamette River Greenway. Goal 15 is not applicable to this application.

(16) **Goal 16 - Estuarine Resources.**

To recognize and protect the unique environmental, economic, and social values of each estuary and associated wetlands; and

To protect, maintain, where appropriate develop, and where appropriate restore the long-term environmental, economic, and social values, diversity and benefits of Oregon's estuaries.

The subject property contains no estuarine resources. Goal 16 is not applicable to this request.

(17) **Goal 17 - Coastal Shorelines.**

To conserve, protect, where appropriate, develop and where appropriate restore the resources and benefits of all coastal shorelines, recognizing their value for protection and maintenance of water quality, fish and wildlife habitat, water-dependent uses, economic resources and recreation and aesthetics.

The subject property contains no coastal shorelines. Goal 17 is not applicable to this request.

(18) **Goal 18 - Beaches and Dunes.**

To conserve, protect, where appropriate develop, and where appropriate restore the resources and benefits of coastal beach and dune areas.

The subject property contains no beaches or dunes. Goal 18 is not applicable to this request.

(19) **Goal 19 - Ocean Resources.**

To conserve the long-term values, benefits, and natural resources of the nearshore ocean and the continental shelf.

The subject property contains no ocean resources. Goal 19 is not applicable to this request.

4.4 **Lane Code 16.400(6)(h)(iii)(bb).**

For Major and Minor Amendments as defined in LC 16.400(8) (a) below, the Plan amendment or component is:

(i-i) necessary to correct an identified error in the Plan; or

The subject property was designated Agriculture and zoned EFU 30 as part of the Lane County Rural Comprehensive Plan (RCP) adoption process in 1984. Nonetheless, it was so designated and zoned pursuant to County policy which determined that lands that might qualify as marginal lands should be addressed subsequently on a case-by-case basis pursuant to policies in the RCP and the statutory criteria in ORS 197.247.

(ii-ii) necessary to fulfill an identified public or community need for the intended result of the component or amendment; or

Not applicable.

(iii-iii necessary to comply with the mandate of local, state or federal policy or law; or

Not applicable.

(iv-iv) necessary to provide for the implementation of adopted Plan policy or elements, or

ORS 197.247 (1991 ed.) authorizes counties to designate land as marginal land. Lane County has acted to utilize this authority through the adoption of RCP Goal 3, Policy 14 and Goal 4, Policy 3. Those policies require an applicant for a marginal lands designation and zoning to address and satisfy the requirements of ORS 197.247 (1991 ed.) and applicable Lane County policies and requirements. The subject application is implementing policies in the RCP which allow qualified resource lands to be designated as Marginal Lands rather than Agriculture or Forest.

In order to aid applicants, county planning staff and the general public in addressing the marginal lands criteria, the Lane County Board of Commissioners, in 1997, adopted an interpretation of and supplement to the County's marginal lands information sheet ("the Board interpretation") a copy of which has been made a part of the record of this decision. The Board interpretation clarifies how the marginal lands statute and criteria are to be applied in specific situations by addressing seven issues and providing policy direction for each. As discussed in these findings, the Board interpretation has particular relevance to this application in the context of evaluating the site's ability to grow merchantable timber.

ORS. 194.247(1) (1991 ed.) provides the following criteria:

> **(a) The proposed marginal land was not managed, during the three of the five calendar years preceding January 1, 1983, as part of a farm operation that produced $20,000 or more in annual gross income or a forest operation capable of producing on average, over the growth cycle, of $10,000 in annual gross income; and**
>
> **(b) The proposed marginal land meets at least one of the following tests:**
>
> **(A) At least 50 percent of the proposed marginal land plus the lots or parcels at least partially located within one-quarter mile of the perimeter of the proposed marginal land consists of lots or parcels 20 acres or less in size on July 1, 1983;**
>
> **(B) The proposed marginal land is located within an area of not less than 240 acres of which at least 60 percent is composed of lots or parcels that are 20 acres or less in size on July 1, 1983; or**
>
> **(C) The proposed marginal land is composed predominately of soils in capability classes V through VIII in the Agricultural Capability Class Classification System in use by the United States Department of Agriculture Conservation Service on October 15, 1983, and is not capable of producing eighty-five cubic feet of merchantable timber per acre per year in those counties west of the summit of the Cascade Range.**

The applicant has addressed subsections (a) and (b)(C) of the statute for demonstrating that the subject property is suitable for Marginal Lands designation. The following findings address each of those criteria:

ORS 197.247(1)(a):

It is found that the applicant has demonstrated that the subject property was not managed, during three of the five calendar years preceding January 1, 1983, as part of a farm operation that produced $20,000 or more in annual gross income. Art Moshofsky and members of his family owned the subject property during and throughout the period between 1978 and 1983. Mr. Moshofsky has provided several affidavits, that demonstrate that the subject property was not managed, during three of the five calendar years preceding January 1, 1983, as part of a farm operation that produced $20,000 or more in annual gross income. In his affidavits, Mr. Moshofsky has provided evidence that the only farm use made of the subject property during the applicable period was the intermittent and limited grazing of cattle, usually less than 25 head at any one time, by C&M Livestock Company. The grazing was the product of an informal agreement between Mr. Moshofsky and the company that provided that the company would

graze a limited number of cattle on the property in exchange for fence maintenance and the human presence of the company. The company's presence on the property provided some security at the time for Mr. Moshofsky, who was an absentee owner residing in Portland faced with trespass and vandalism problems on the subject property. Mr. Moshofsky testified that at no time did monetary consideration between the parties for the grazing exceeded $1000 annually. Mark Minty, a partner in C&M Livestock Company during that period, provided testimony in an affidavit in the record that Mr. Moshofsky's description of the activity and the agreement of the parties was accurate and that the company did not own or manage any property adjacent to, contiguous with or in the vicinity of the subject property. Mr. Minty also testified that it is his opinion that the subject property is of marginal value for grazing or other agricultural production and could not be managed as part of a farm operation capable of producing $20,000 in gross income annually.

Furthermore it is found that the applicant has demonstrated that the subject property was not managed as part of a forest operation that produced an average, over the growth cycle, of $10,000 in annual gross income.

The applicant's forester, Marc Setchko, provided an analysis to the record of the timber-growing potential of the subject property and concluded that the subject property could not be managed as a forest operation capable of producing an average, over the growth cycle, of $10,000 in annual gross income. Mr. Setchko, with both professional credentials and 27 years of experience, is highly qualified to render such any analysis and conclusion.

Mr. Setchko's opinion was based on a detailed analysis of the existing soils, their ability to grow timber (primarily Douglas-fir) and conversion of that growth potential into dollars based upon log prices in 1983. Mr. Setchko's methodology is dictated by the Board interpretation (Direction for Issue 4). Mr. Setchko's analysis used a fifty-year growth cycle as directed by the Board interpretation (Direction for Issue 5).

Mr. Setchko, in his report dated March 27, 2005, conducted a forest income analysis of the subject property that included the entire 387.65 acres of common Moshofsky ownership in 1983. In that report Mr. Setchko calculated the average gross annual income of the property through a complete growth and harvest rotation. He calculated what the forest operation on the subject property was capable of, in terms of income, based on actual stocking of the property during the 1978-1983 period. His calculation is based upon the actual volume of timber removed from the property in 1990 by Mr. Moshofsky (Mr. Moshofsky's affidavit of that timber removal, dated March 15, 2005, is included in the record) and his timber cruise of the remaining portion of the property containing stands of merchantable Douglas Fir. Included in Mr. Setchko's report is a map of the property with areas of timber harvest and existing stands of merchantable Douglas Fir delineated. Mr. Setchko's earlier reports in the record of this proceeding, and incorporated herein by this reference, demonstrate that significant portions of the property have not had any merchantable trees growing thereon for at least 50 years (and likely 100 years), due primarily to the steep, rock-laden, barren slopes of the northern portion of the property and the continually moist bottom land throughout the middle of the property. Those areas of the property contain poor soils for timber production (138G, 52 D, and 28C) as shown in Mr. Setchko's numerous reports in the record of this proceeding. The record of this proceeding includes aerial photos of

the property, dating back to 1952, that display that those same areas have been devoid of any trees, merchantable or otherwise, long before the 1978-1983 period and continue to this day to be devoid of trees. Mr. Setchko was not required to make any assumptions on stocking levels in his analysis and calculations—he used the actual condition of the property during the applicable time period and its ability, at that time, to produce forest income over the growth cycle of the merchantable stands of timber existing at that time.

The applicant has provided testimony from Stephen Caruana, principal agronomist of Agronomic Analytics, regarding the relationship between the soils of the subject property in areas devoid of trees and the fact that no trees have grown in those areas for at least the past 50 years. Mr. Caruana testified, in his Dahlen Property Soil Investigation Report, that silvicultural requirements of Douglas fir demonstrate that Douglas fir grows poorly on shallow soils, germinates slowly in grassy, overgrown areas, and is especially subject to lethal conditions on hot, dry aspects. Mr. Caruana testified that such areas and conditions are prevalent in the areas of the subject property that are devoid of trees. He testified that the large open, grassy areas of the subject property, especially those on the hillsides with south and west exposures, exceeded the limiting conditions and are, consequently, severely limited for the propagation and survival of desirable tree species. Mr. Caruana further testified that shallow soils significantly contribute to the limiting conditions and that the pattern of forest cover on the subject property followed closely the presence of deeper soils. He found that those areas that do not now support trees (and appear not to have had for the last 100 years) are especially shallow and subject to excessively hot and dry conditions due to their predominantly south aspect. He further found that the non-forested floodplain area soils are more likely to reforest with non-commercial species of typical hydrophilic tress such as willows, alders, ashes and the associated brush, grasses and forbs rather than commercial tree species. Mr. Caruana concludes that the subject property's history of no trees on those particular areas is a direct result of the areas' soils having limited water holding capacity, shallow rooting depth and high hazards for erosion and potential runoff. Mr. Caruana's analysis and conclusions provide substantial evidence to support the conclusions of Mr. Setchko regarding the subject property's capability of producing forest income.

The applicant asserts that the income capability of the property in this case can be calculated by actual stocking conditions of the property before, during and after the applicable 1978-1983 period. Mr. Setchko's analysis and calculations of the actual timber available for harvest, throughout the growing cycle, demonstrates that the entire property was and is not capable of producing over $10,000.00 in annual income over the growing cycle from a forest operation. Mr. Setchko concludes the subject parcel (tax lot 1300), coupled with tax lot 300, was capable of producing only $7,477 in gross annual income during the five year period starting in 1978.

Goal One Coalition has challenged the applicant's demonstration that the subject property meets the agriculture and forest income tests of the statute. The Board finds that the challenges by Goal One Coalition are without legal foundation and do not include any supporting professional opinion regarding agriculture or forest income of the subject property and, therefore, are without merit.

The specific challenges of Goal One Coalition, which cover both ORS 197.247(1)(a) and (b)(C), are discussed and rejected as without merit as follows:

1. The income test "forest operation" has not been addressed.

Goal One Coalition argues that the applicant has not conducted any analysis of the "income-producing capability" of the proposed marginal lands using "current timber values" to calculate the potential gross income over the growth cycle. Goal One Coalition is correct in asserting that the calculation of the annual gross income for the ORS 197.247(1)(a) income test can be accomplished by the use of timber values. However, it is incorrect in its assertion that the calculation must use "current timber values."

Goal One Coalition references language in *DLCD v. Lane County* (Ericcson)[1] that mentions that "current prices" were used in the calculations of the Ericcson application. In that case, however, the use of a particular year's prices was not at issue and LUBA made no determination regarding such use. What the decision in Ericcson did establish, in addition to affirming Lane County's approval of a Marginal Lands re-zoning application, was that on-site evaluation of forest productivity by a qualified expert is weightier evidence than published data or that provided by individuals not qualified as experts in forest management.

Mr. Setchko used 1983 Douglas-fir log prices and volumes in his calculation of the projected gross forest operation income of the proposed marginal land. In this case Mr. Setchko is the qualified expert with 27 years of forest management experience, including 17 years as a private consultant and a Master's Degree in Forestry. Goal One Coalition has not established that it has any experience or credentials in forest management. Furthermore, it has not provided any testimony from a qualified expert in forest management to support its assumptions and conclusions.

Lane County, in response to and in reliance upon Ericcson, issued its interpretations of the Marginal Lands statutes in the Board of Commissioners' 1997 Supplement to Marginal Lands Information Sheet. A copy of the supplement and the information sheet was provided to the record of this decision. It is a binding policy statement providing guidance and direction to applicants, county planning staff, the public and to the Lane County Planning Commission and Board of Commissioners regarding the statute. The Board direction stated in ISSUE 4 of the supplement provides:

> **"ISSUE 4: <u>What price date should be used to calculate gross annual income for forest lands?</u>**
>
> **Board's Direction:**
> The legislative intent of the "management and income test" of the Marginal Lands Law was to identify those lands which were not, at the time the Marginal Lands law was enacted (1983), making a "significant contribution" to commercial forestry. Therefore, it is appropriate and statistically valid to use the following methodology:

[1] 23 Or LUBA 33 (1992)

> 1. Based on the best information available regarding soils, topography, etc., determine the optimal level of timber production for the tract assuming reasonable management.
>
> 2. Assume that the stand was, in 1983, fully mature and ready for harvest.
>
> 3. **Using** the volumes calculated in step (1), and **1983 prices**, calculate the average gross income over the growth cycle." (Emphasis added)

The Board's direction to use 1983 prices was an essential and reasonable approach to determining the productivity of forest lands at that time and obviates the need to make annual adjustments for inflation as the years go by (by adjusting the $10,000 income figure).

Mr. Setchko's use of 1983 prices to determine average annual gross income is consistent with Lane County policy and is directed by the Board of Commissioners' binding local level policy statement in the aforementioned supplement. Using 1983 prices, Mr. Setchko has determined that the subject property was not capable of being managed for forest operations producing at least $10,000 in annual gross income. Goal One Coalition has provided no evidence that contradicts or refutes Mr. Setchko's conclusions.

The Oregon Land Use Board of Appeals affirmed Lane County's policy of utilizing 1983 log prices in the forest income test analysis. In *Just v. Lane County*, LUBA No. 2005-029, dated June 8, 2005, LUBA affirmed the use of 1983 log prices in another Marginal Lands case and stated:

> "Although ORS 197.247(1)(a) does not expressly mandate that counties use 1983 timber prices in applying the gross income test, we agree with the county and intervenor that it implicitly does so. The purpose of the forest operation test is to identify lands that are not capable of meeting the specified $10,000 threshold averaged over the growth cycle. Both the "farm operation" and "forest operation" prongs of the test are specifically linked to January 1, 1983."

2. Mr. Setchko fails to explain his use of a 50-year growth cycle.

In ISSUE 5 of its 1997 Supplement, Lane County adopted the use of a 50-year growth cycle as the usual standard. Jim Just assigned that policy as an assignment of error in *Just v. Lane County* and LUBA rejected his arguments in that assignment and affirmed the county's use of the 50-year growth cycle. It is found that the policy remains valid today and that the applicant's use of a 50-year growth cycle in calculating forest income complied with the policy and adequately demonstrated, in part, that the forest income test had been appropriately met.

3. **Additional documentation is required concerning timber companies in which Mr. Moshofsky held financial interest, in order to ascertain if those companies conducted forest operations of which the subject property was part of, and if those operations grossed more than $10,000 annual during 1978-1983.**

Goal One Coalition raised this issue in its letter to the Lane County Planning Commission, dated February 25, 2005. In that letter, Mr. Just provided documentation of several timber harvesting companies that were in whole or in part, owned by Mr. Moshofsky. The Board finds that such additional information is unnecessary, as the record contains Department of Forestry/Department of Revenue information on the 1990 harvest which occurred on the subject property. That document does not indicate that the harvesting was carried out by any of the companies with which Mr. Moshofsky was affiliated. The Board reasonably concludes that the subject tax lot (#300) and contiguous property (tax lot #1300) was not part of a larger forest operation during the period of 1978-1983. In this case, the owner of the property during the applicable period has testified that the subject property was not managed as part of a forest operation existing off site and owned by the owner of the subject property. The owner testified that when timber was harvested on the property in 1990 it was sold on the open market to third parties rather than being processed or used in any off site operation owned by the owner of the subject property. Goal One's assertion in this issue is without any legal foundation, is supported by no substantial evidence of its requirement and is rejected accordingly.

4. **All income from operations of C&M Livestock Company must be included in the calculations for the agriculture income test.**

Mr. Minty has testified that C&M Livestock Company owned no property contiguous to, adjacent to or nearby the subject property. Mr. Moshofsky testified that he requested that the cattle be grazed on the property to create a presence on the property in his absence and that the consideration for the grazing was primarily in the form of the presence and maintenance of fencing and never in an amount exceeding $1000 in a particular year. It is found that Mr. Moshofsky, the owner of the property during the five-year period preceeding January 1, 1983, did not manage the property for or as a farm operation beyond the intermittent grazing of a limited number of cattle and that that farm operation did not produce $20,000 or more in annual gross income. Therefore, it is found that the intermittent grazing of a limited number of cattle on the subject property should be reasonably considered as not contributing significantly to the agricultural economy of the area or state and that the subject property was not managed as part of a farm operation that produced more than $20,000 in annual income during the subject period.

5. **The applicant has not established that the subject parcel is not capable of producing 85 cu.ft./ac./yr. of merchantable timber.**

Goal One Coalition argues two points within this argument. First it argues that the applicant's consulting forester has not applied a sanctioned methodology for determining forest productivity.

Mr. Setchko used information generated by Lane County and the Oregon State Forester's office consistent with LCDC regulations for providing such ratings.[2] Mr. Setchko calculated the forest productivity capability of the subject property using the same sources of ratings that were used in the Carver application (the subject of *Just v. Lane County* referred to hereinabove). Those sources of ratings and the use of the ratings were affirmed by LUBA in that decision. Mr. Setchko applied a rating to each of the soils of the proposed marginal land and concluded that the proposed marginal land produces less than 85 cu.ft./ac./yr. of merchantable timber.

The second part of Goal One Coalition's second argument is that "(A)n evaluation of a property's capacity for forest production must consider productivity for all merchantable forest tree species, not just Douglas-fir." Mr. Setchko has provided an analysis of the species that Goal One Coaltion argues are "merchantable" and concludes that a majority of those species are not "merchantable." He further concludes that all other species that may be merchantable grow sufficiently slower than Douglas-fir on the subject soils and that they would not produce at least 85 cu.ft./ac./yr. on the subject property. Mr. Setchko includes that analysis in each of his "Forest Productivity Analysis" that were provided to the record in support of the application. Mr. Setchko's experience and expertise provides the conclusion that many of the species, especially KMX and hybrid poplar, have no established market and are, therefore, not merchantable. His overall conclusion is that if the proposed marginal land is not capable of producing an average of $10,000 in annual gross income from Douglas-fir, then there are no other merchantable tree species that could produce any more than the calculated figures that he has provided in his analysis for Douglas-fir. Goal One Coalition has not provided any credible or scientific evidence that contradicts or conflicts with the findings and conclusion of the Setchko reports. It is found that the applicant, through the evidence provided by Mr. Setchko's reports, has demonstrated that the subject property is not capable of producing more than 85 cu.ft./ac./yr. of merchantable timber.

The Setchko report concludes that the subject property is not capable of producing eighty-five cubic feet of merchantable timber per acre per year. Mr. Setchko's report also contains an analysis of other tree species. Mr. Setchko's opinion includes an analysis of the species listed by Goal One Coalition in public testimony and concludes that they are either not merchantable, or would not produce an annual volume and income equal to Douglas-fir. Goal One Coalition has provided no substantial evidence to effectively refute or contradict Mr. Setchko's professional opinion regarding the merchantability and productivity of those particular species. Mr. Setchko opines that all other merchantable tree species would either not grow on the soils of the subject property or would not produce a volume in cubic feet that would equal the growth rate of Douglas-fir. Mr. Setchko, in his analysis of the productivity of various tree species, provides a professional and scientific foundation to the reasoning of the SCS/NRCS in using Douglas-fir as the indicator species for productivity on Western Oregon soils.

Mr. Setchko, in response to continuing arguments made by Goal One Coalition in other Marginal Lands plan amendment applications, prepared an analysis of the Goal One Coalition's arguments regarding the productivity of Ponderosa Pine. Mr. Setchko opines that Goal One Coalition has

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[2] See OAR 660-006-0005(2)

misapplied and misused information from various internet publications to conclude that Ponderosa Pine has a much higher productivity potential on Western Oregon soils than is accurate and than can be scientifically verified. Mr. Setchko, in response to continuing arguments made by Goal One Coalition in other applications, prepared an analysis of the Goal One Coalition's arguments regarding the productivity and merchantability of Ponderosa Pine, Hybrid Poplar and KMX in the Willamette Valley. That analysis, dated September 8, 2004, and May 4, 2006, includes Mr. Setchko's opinion that Goal One Coalition has misapplied and misused information from various internet publications to conclude that Ponderosa Pine, Hybrid Poplar and KMX have a much higher productivity potential on Western Oregon soils than is accurate and than can be scientifically verified. His conclusions in his Ponderosa Pine analyses mirror his earlier opinions , provided as evidence herein, that all other potentially merchantable tree species would either not grow on the soils of the subject property or would not produce a volume in cubic feet that would equal the growth rate of Douglas-fir.

Forest soil productivity data can be found in several sources:

- Soil Survey of Lane County Area, Oregon;
- Office of State Forester Memorandum (Exhibit 24);
- Lane County Soil Ratings for Forestry and Agriculture [LCOG] (Exhibit 23).

The Soil Survey contains productivity ratings for soil map units in Lane County, but does not provide forest productivity ratings for soils considered primarily farm soils or composite ratings for soil complex units. The State Forester memo provides ratings for those soils based upon a field review of soil map units in Lane County by State Forestry staff. The Soil Ratings document provides ratings for the soil complexes using a weighted average methodology for the complex-type soil map units. Of the three sources, the Soil Survey is considered the primary source of soils data for Lane County. The State Forester's ratings for the soils not rated in the Soil Survey is considered the second best source of forest productivity ratings since it was based upon field inspections of sites in Lane County and was produced by the Oregon Department of Forestry. The Soil Ratings document using a weighted average methodology for complex soil map units is considered the next credible forest productivity ratings data for those soil map units.

The Goal One Coalition submittal argues that the Goal 4 provisions found in OAR 660-006-0010 and 660-006-0005 govern the methodology to be used in the assignment of forest productivity ratings for the subject application. However, nothing in the statutory provisions identify these rules as requirements that apply to a Marginal Lands determination or prevent Lane County from determining forest productivity ratings from any credible source. The administrative rules may be useful to use as guidelines when making a determination regarding the appropriate ratings to assign a particular soil map unit, but they are not necessarily governing. LUBA made a footnote to this effect in the *Carver* decision (footnote 11).

The opponents maintain that these two soil map units have a higher productivity rating for Ponderosa Pine. The Ponderosa Pine productivity ratings assigned to the soil map units that opponents argue should be used instead are apparently taken from a document titled: "Establishing and Managing Ponderosa Pine in the Willamette Valley," Oregon State University Extension Service, EM 8805, May 2003." Mr. Setchko testified that a complete reading of that

document reveals that it repeatedly states that its data is from a very small sample and should not be used at this time until more long term data can be collected. Goal One Coaltion has not produced any evidence that refutes Mr. Setchko's analysis or conclusions regarding this matter.

Ponderosa Pine

The following observations are instructive on this issue:

- The opponents' assignment of values to the relevant soil map units is based upon a document titled "Establishing and Managing Ponderosa Pine in the Willamette Valley," Oregon State University Extension Service, EM 8805, May 2003, which contains caveats that expressly limit its application.

- The opponents' conversion tables are difficult to understand. Lane County is unable to follow the analysis and to validate the numbers in the chart for Ponderosa Pine productivity.

- Mr. Setchko, a credible forestry expert, has addressed the issue in his testimony that, in addition to an analysis based upon his personal experience and training, Ponderosa Pine is worth considerably less money and has the same or slower growth rate as Douglas Fir and that the opponents have not provided any substantial evidence to refute his conclusions regarding the productivity of Ponderosa Pine in Western Oregon or upon the subject property.

Mr. Setchko's analysis and conclusions regarding the productivity of the subject property sufficiently and adequately demonstrates that the subject property is not capable of producing at least 85 cubic feet of merchantable timber per acre per year over the growing cycle.

Goal One Coalition has challenged the applicant's demonstration that the subject property meets the forest productivity test of the statute. The Board finds that the challenges by Goal One Coalition are without legal foundation, do not include any supporting professional opinion regarding forest productivity of the subject property that refutes the conclusions reached by Mr. Setchko, and, therefore, are without merit.

Other opponent challenges are discussed and rejected as without merit as follows:

1. The "forest operation" income test must be calculated by using timber prices for years prior to 1983.

Mr. Setchko used 1983 Douglas-fir log prices and volumes in his calculation of the projected gross forest operation income of the proposed marginal land. In this case Mr. Setchko is the qualified expert with 27 years of forest management experience, including 17 years as a private consultant and a Master's Degree in Forestry. Opponents have not established that they have any experience or credentials in forest management. Furthermore, they have not provided any testimony from a qualified expert in forest management to support their assumptions and conclusions.

Lane County, in response to and in reliance upon Ericcson, issued its interpretations of the Marginal Lands statutes in the Board of Commissioners' 1997 Supplement to Marginal Lands Information Sheet. A copy of the supplement and the information sheet was provided to the record of this decision. It is a binding policy statement providing guidance and direction to applicants, county planning staff, the public and to the Lane County Planning Commission and Board of Commissioners regarding the statute. The Board direction stated in ISSUE 4 of the supplement provides:

> "ISSUE 4: <u>What price date should be used to calculate gross annual income for forest lands?</u>
>
> Board's Direction:
> The legislative intent of the "management and income test" of the Marginal Lands Law was to identify those lands which were not, at the time the Marginal Lands law was enacted (1983), making a "significant contribution" to commercial forestry. Therefore, it is appropriate and statistically valid to use the following methodology:
>
> 1. Based on the best information available regarding soils, topography, etc., determine the optimal level of timber production for the tract assuming reasonable management.
>
> 2. Assume that the stand was, in 1983, fully mature and ready for harvest.
>
> 3. **Using** the volumes calculated in step (1), and **1983 prices,** calculate the average gross income over the growth cycle." (Emphasis added)

The Board's direction to use 1983 prices was an essential and reasonable approach to determining the productivity of forest lands at that time and obviates the need to make annual adjustments for inflation as the years go by (by adjusting the $10,000 income figure).

Mr. Setchko's use of 1983 prices to determine average annual gross income is consistent with Lane County policy and is directed by the Board of Commissioners' binding local level policy statement in the aforementioned supplement. Using 1983 prices, Mr. Setchko has determined that the subject property was not capable of being managed for forest operations producing at least $10,000 in annual gross income. Opponents have provided no evidence that contradicts or refutes Mr. Setchko's conclusions.

The Oregon Land Use Board of Appeals affirmed Lane County's policy of utilizing 1983 log prices in the forest income test analysis. In *Just v. Lane County*, LUBA No. 2005-029, dated June 8, 2005, LUBA affirmed the use of 1983 log prices in another Marginal Lands case and stated:

> "Although ORS 197.247(1)(a) does not expressly mandate that counties use 1983 timber prices in applying the gross income test, we agree with the county and intervenor that it implicitly does so. The purpose of the forest operation test is to identify lands that are not capable of meeting the specified $10,000 threshold averaged over the growth cycle. Both the "farm operation" and "forest operation" prongs of the test are specifically linked to January 1, 1983."

2. Mr. Setchko fails to explain his use of a 50-year growth cycle.

In ISSUE 5 of its 1997 Supplement, Lane County adopted the use of a 50-year growth cycle as the usual standard. Jim Just assigned that policy as an assignment of error in *Just v. Lane County* and LUBA rejected his arguments in that assignment and affirmed the county's use of the 50-year growth cycle.

The Board direction stated in ISSUE 5 of the supplement provides:

> ISSUE 5: What "growth cycle" should be used to calculate gross annual income?
>
> Board's Direction:
>
> The consensus of the Board was that a 50-year growth cycle should be adopted as the usual standard, with the option that another standard could be used if substantiated by compelling scientific evidence presented by the applicant. The Board's choice was based upon evidence that the USDA Natural Resource Conservation Service has adopted the 50-year cycle for rating soil productivity, plus the administrative ease of having a standardized figure.

It is found that the policy remains valid today and that the applicant's use of a 50-year growth cycle in calculating forest income complied with the policy and adequately demonstrated, in part, that the forest income test had been appropriately met.

3. The applicant has not established that the subject parcel is not capable of producing 85 cu.ft./ac./yr. of merchantable timber.

Goal One Coalition argues two points within this argument. First it argues that the applicant's consulting forester, Mr. Setchko, has not applied a sanctioned methodology for determining forest productivity.

Mr. Setchko used information generated by Lane County and the Oregon State Forester's office consistent with LCDC regulations for providing such ratings. Mr. Setchko calculated the forest productivity capability of the subject property using the same sources of ratings that were used in the Carver application (the subject of *Just v. Lane County* referred to hereinabove). Those sources of ratings and the use of the ratings were affirmed by LUBA in that decision. Mr.

Setchko applied a rating to each of the soils of the proposed marginal land and concluded that the proposed marginal land produces less than 85 cu.ft./ac./yr. of merchantable timber.

The second part of Goal One Coalition's second argument is that "(A)n evaluation of a property's capacity for forest production must consider productivity for all merchantable forest tree species, not just Douglas-fir." Mr. Setchko has provided an analysis of the species that Goal One Coaltion argues are "merchantable" and concludes that a majority of those species are not "merchantable." He further concludes that all other species that may be merchantable grow sufficiently slower than Douglas-fir on the subject soils and that they would not produce at least 85 cu.ft./ac./yr. on the subject property. Mr. Setchko includes that analysis in each of his "Forest Productivity Analysis" that were provided to the record in support of the application. Mr. Setchko's experience and expertise provides the conclusion that many of the species, especially KMX and hybrid poplar, have no established market and are, therefore, not merchantable. His overall conclusion is that if the proposed marginal land is not capable of producing an average of $10,000 in annual gross income from Douglas-fir, then there are no other merchantable tree species that could produce any more than the calculated figures that he has provided in his analysis for Douglas-fir. Goal One Coalition has not provided any evidence that contradicts or conflicts with the findings and conclusion of the Setchko reports. It is found that the applicant, through the evidence provided by Mr. Setchko's reports, has demonstrated that the subject property is not capable of producing more than 85 cu.ft./ac./yr. of merchantable timber.

ORS 197.247(1)(b)(C):

The applicant has demonstrated, through use of the 1987 SCS Soil Survey of Lane County Area, Oregon, (1987 Soil Survey) that the subject property contains predominately classes V-VIII in the Agricultural Capability Class Classification System in use by the United States Department of Agriculture Conservation Service on October 15, 1983. The applicant has further demonstrated, with the inclusion of the Lane County Agricultural Lands Working Paper of the Lane Rural Comprehensive Plan ("Working Paper") published in November 1981, and its 1983 Addendum, the cover page and forward of the 1987 Soil Survey and the forward of the 1987 Soil Survey currently posted on the NRCS web site, that the soil map units and soil classifications contained in the 1987 Soil Survey were the classifications of the SCS system in use on October 15, 1983.

It further found that, in addition to the findings contained in the previous sub-paragraph 5. findings regarding Goal One Coalition arguments, that the applicant has adequately demonstrated, through the evidence provided by Marc Setchko, that the subject property is not capable of producing more than 85 cubic feet per acre per year in merchantable timber.

Conclusion: The subject property qualifies under ORS 197.247(1) as marginal land because:

(a) it was not managed during three of the five calendar years preceding January 1, 1983, as part of a farm operation that produced $20,000 or more in annual gross income;

(b) it was not managed as a part of a forest operation during that same time period which was capable of producing an average, over the growth cycle, of $10,000 in annual gross income;

(c) it is composed predominantly of soils in agricultural capability classes V through VIII, and

(d) it is not capable of producing 85 cubic feet of merchantable timber per acre per year.

It is found that substantial evidence in the record, primarily, but not limited to, the Setchko reports, exists to support each of the above conclusions. No documentation, expert testimony or other substantial evidence has been submitted to the record that refutes or contradicts that evidence with regard to the resource capabilities of the subject property as measured by the statutory standards and criteria in ORS 197.247.

For the reasons set forth above, the Board finds that the policies in the RCP, specifically RCP Goal 3, Policy 14 and RCP Goal 4, Policy 3, authorize and allow certain qualified resource lands to be designated and zoned marginal lands. Approval of this application implements those policies which have been acknowledged by the Land Conservation and Development Commission to be in conformity with Statewide Planning Goals and ORS 197.247 (1991 ed.).

(v-v) otherwise deemed by the Board, for reasons briefly set forth in its decisions, to be desirable, appropriate or proper.

The totality of this application's response to and treatment of applicable criteria, coupled with the benefits accruing to both the public and the applicant as demonstrated in this application, provides the Lane County Board of Commissioners with adequate foundation and reason to find that approval of the application is desirable, appropriate and proper and would be a demonstration of good public policy.

4.5 **Lane Code 16.400(6)(h)(iii)(cc).**

For Minor Amendments as defined in LC 16.400(8)(a), the Plan amendment or component does not conflict with adopted policies of the Rural Comprehensive Plan and if possible, achieves policy support.

There are no policies in the adopted and acknowledged RCP that conflict with this request for plan amendment. As discussed in the previous section, there are policies in the RCP that specifically support and encourage approval of marginal lands applications for qualified property. The subject property addresses and satisfies the marginal lands criteria that are set forth in ORS 197.247 (1991 ed.).

Approval of this plan amendment is also consistent with the Board's interpretation of the Marginal Lands statute (ORS 197.247 (1991 ed.)) and its application to individual requests for plan amendment. The application is supported by detailed and thorough analysis and testimony

provided by a qualified and experienced forester. The analysis and testimony was produced and provided in conformance with direction provided by the Board's interpretation.

Other RCP policies that may be relevant to this decision are as follows:

(1) **GOAL ONE: CITIZEN INVOLVEMENT.**

Notice to affected property owners and evidentiary hearings provided by Lane County ensures that the application meets and supports the citizen involvement goal and policies of the comprehensive plan.

(2) **GOAL TWO: LAND USE PLANNING.**

(a) **Policy 25: Changes to Plan Diagram.**

This application for amendment of the Plan Diagram designations for the subject property has been evaluated through the county's plan amendment procedure and approval of this application is based upon fulfillment of the criteria of Lane Code 16.400 which is addressed in Section 4 of these findings.

(3) **GOAL THREE: AGRICULTURAL LANDS.**

There has previously been a legislative determination by Lane County, as embodied in the acknowledged Lane County Rural Comprehensive Plan, that the subject property is not agricultural land and is not High Value Farmland. Nonetheless, consideration of agricultural use of the subject property and application of all relevant criteria regarding agricultural considerations has been adequately provided in the application and during the evidentiary hearings.

(4) **GOAL FOUR: FOREST LANDS.**

(a) **Policy 1: Conservation of forest lands.**

The primary policy of both the comprehensive plan and statewide planning goals regarding forest lands is the conservation of those lands for multiple forest uses. Approval of this application is consistent with and supports Policy 1 of Goal Four of the Comprehensive Plan.

4.6 **Lane Code 16.400(6)(h)(iii)(dd)**

For Minor Amendments as defined in LC 16.400(8)(a) below, the Plan amendment or component is compatible with the existing structure of the Rural Comprehensive Plan, and is consistent with the unamended portions or elements of the Plan.

As discussed in previous sections, this plan amendment is consistent with and satisfies the criteria that are referenced and adopted by specific policies in the RCP. Those policies are RCP Goal 3, Agricultural Lands, Policy 14 and RCP Goal 4, Forest Lands, Policy 3 which specifically allow certain, qualified, resource lands to be designated and zoned as marginal lands. Approval

of this amendment is consistent with the RCP policies for farm (Goal 3) and forest (Goal 4) lands.

The Board interpretation recognizes this consistency. It states under "ISSUE 1":

> "Marginal land is intended to be a sub-set of resource land, i.e., there are 'prime; resource lands and 'marginal' resource lands. The marginal lands are to be available for occupancy and use as small tracts than are required in the better resource lands. The criteria in the law define which lands may be designated as marginal. Evidence for this position is found in the legislative history and the fact that marginal lands are recognized in both Statewide Goal 3 – Agricultural Lands and Goal 4 – Forest Lands."

Marginal lands are resource lands that are intended for occupancy with limited rural residential development.

Based on the evidence in the record which addresses and satisfies the criterion in ORS 197.247 (1991 ed.) and the above-referenced RCP resource policies, the Board concludes that approval of the subject plan amendment is compatible with the existing structure of the acknowledged RCP and is consistent with the unamended portions and elements of the RCP.

4.7 Zone Change Criteria of Lane Code 16.252

Lane Code 16.252(2)(Criteria).

> ***Zonings, rezonings and changes in the requirements of this Chapter shall be enacted to achieve the general purpose of this Chapter and shall not be contrary to the public interest. In addition, zonings and rezonings shall be consistent with the specific purposes of the zone classification proposed, applicable to Rural Comprehensive Plan elements and components, and Statewide Planning Goals for any portion of Lane County which has not been acknowledged by the Land Conservation and Development Commission. Any zonings or rezonings may be effected by Ordinance or Order of the Board of County Commissioners, the Planning Commission or the Hearings Official in accordance with the procedures of this section.***

This decision results in a change from Exclusive Farm Use to ML Marginal Lands. The facts relevant to the zone change standards are largely redundant with the facts relevant to plan policies and the Statewide Planning Goals and have been addressed in preceding sections of these findings of fact and are incorporated into these findings by this reference.

This zone change is consistent with the general purposes of LC Chapter 16 as set forth in LC 16.003 in that:

> 1) In conformity with various development rules discussed above, the subject property will be developed commensurate with the character and physical limitations of the land and will thus promote the health, safety and general welfare of the built environment;

2) It will provide home construction opportunities that will aid the economy;

3) It will conserve other farm and forest lands by locating residential opportunities within a resource zone that allows limited residential development;

4) It will aid the provision of affordable housing within the Metro area by providing reasonable selections for a place to live;

5) By its location near the Metro Plan UGB, it will provide for the orderly and efficient transition from rural to urban lands and the efficient provision of public facilities and services;

6) By virtue of regulations discussed above, it will protect the quality of the land, air and water of the county and will protect life and property in areas subject to flooding.

This zone change is consistent with the purposes of the Marginal Lands Zoning District because it provides an alternative to more restrictive farm and forest zoning and it will allow any of the uses permitted in the Marginal Lands zoning district and thereby provide opportunities for persons to live in a rural environment and to conduct part-time farm or forest operations. It is being applied to property in accordance with Lane Code Chapter 16 criteria and procedures, RCP plan policies and criteria in ORS 197.247 (1991 ed.).

CONCLUSION

This application has addressed the applicable criteria, shown consistency with that criteria, has demonstrated good public policy through the public and private benefits accruing from its proposals.

Based on the substantial evidence presented above and included in the record of this decision, the Board of County Commissioners finds and concludes that the subject application for plan amendment and zone change meets and satisfies all of the relevant criteria and hereby is granted approval.

Land Use Application

LMD — Land Management Division

REQUEST / PROPOSAL FOR:

FILE NO.
ACTION: FEE

LOCATION (PLEASE PRINT)

TOWNSHIP	RANGE	SECTION	1/4 SECTION	TAX LOT	SUBDIVISION / PARTITION	LOT / PARCEL	BLOCK
18	04	24		300			

ZONED	TAX CODE	PLOT #	ACREAGE
EFU 40			322 Acres

LOCATION ADDRESS: 85800 S. Willamette Street, Eugene, OR 97405

STRUCTURES NOW ON PROPERTY: Residence and Pole Barn

APPLICANT / AGENT

NAME (PLEASE PRINT): Steve Cornacchia — DATE: 9/14/2004

ADDRESS: 180 E. 11th Avenue — PHONE: 686-8511

CITY: Eugene, OR — ZIP: 97401

OWNER

NAME (PLEASE PRINT): Karen A. Dahlen Trust — DATE:

ADDRESS: 85800 S. Willamette Street, Eugene, OR 97405 — PHONE:

CITY: Eugene, OR 97405 — ZIP:

DO YOU OWN ADJACENT PROPERTY? Yes [X] No [ ]

MAP, PARCEL NUMBER

Township	Range	Section	1/4 Section	Tax Lot
18	03	19		1300

WATER — PUBLIC [ ] ON-SITE WELL [X] COMMUNITY SYSTEM

SEWAGE — PUBLIC [ ] ON-SITE SEPTIC [X] COMMUNITY SYSTEM

ROAD — STATE [ ] COUNTY [ ] PUBLIC [ ] EASEMENT [ ] Private X

FIRE DISTRICT: Eugene RFPD — SCHOOL DISTRICT: Eugene 4J

POWER COMPANY: Lane Elec. Co-op — PHONE COMPANY: QWest

I (We) have completed all the attached application requirements and certify that all statements are true and accurate to the best of my (our) knowledge and belief. I am (We are) so authorized to submit this application as evidenced by the signature of the owner below.

OWNER Signature: Karen Dahlen — Date: — APPLICANT Signature: Steve Cornacchia — Date: 9/15/2004

An accurate Plot Plan must be attached. Ask for a sample Plot Plan

SPECIFIC SECTION OF LANE CODE REQUIRING THIS APPLICATION

RELATED PERMIT #

STAFF COMMENTS:

APPLICATION

Applicant:	Karen A. Dahlen P.O. Box 5687 Eugene, OR 97405-0687
Property Owner:	Karen A. Dahlen Trust
Property Location:	Approximately ½ mile south of Eugene city limits, located west of Willamette Street.
Assessor's Map and Lot:	Assessor's Map 18-04-24, Tax Lot 300. A copy of the Assessor's map is attached as Exhibit A. The legal description of the subject property is attached as Exhibit B.
Current County Zoning:	Exclusive Farm Use 40
Attorney-Consultant:	P. Steven Cornacchia Hershner Hunter, LLP 180 E. 11th Avenue, Eugene, Oregon 97401.
Submission Date:	September 15, 2004

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1.0 INTRODUCTION.

The applicant is requesting approval of an amendment of the Lane County Rural Comprehensive Plan (RCP) to re-designate the subject property from Exclusive Farm Use 40 to Marginal Lands and an amendment of the RCP map to re-designate the subject property from Agriculture to Marginal Lands.

2.0 BACKGROUND INFORMATION.

2.1 General Site Description.

The property subject to this application consists of one parcel, approximately 320.49 acres in size, located immediately south, but not adjacent to, the Eugene city limits and the Eugene-Springfield Metropolitan Plan Urban Growth Boundary, west off of Willamette Street.

The subject property is described as Tax Lot 300 of Lane County Assessor's Map No. 18-04-24. Immediately to the east of the property is located Tax Lot 1300 of Lane County Assessor's Map No. 18-03-19, a parcel of land consisting of approximately 67.16 acres, zoned Marginal Lands (ML) and owned by the applicant.

Property adjacent to the southern boundary of the subject property consists of six small parcels, all zoned Impacted Forest (F-2). Tax Lots 18-04-24-100 and 102 are adjacent to the northeast boundary of the subject property and are also zoned Impacted Forest (F-2). Tax Lots 18-04-24-200 and 201 are adjacent to the northwest boundary of the subject property and are zoned Marginal Lands (ML). Tax Lot 18-04-23-204 is adjacent to the western boundary of the subject property and is zoned Impacted Forest (F-2).

The subject property receives the following public services: Eugene School District 4J (schools); Lane Electric Co-op (electrical power); Eugene Rural Fire Protection District 1(fire and ambulance); Qwest (telephone); LTD (bus service); Lane County Sheriff's Department and Oregon State Police.

2.2 Description of Proposed Amendments.

The application before Lane County is for approval of the following:

1. An amendment to the county's comprehensive plan and map designating the subject parcel as Marginal Lands and re-zoning it to Marginal Lands. The applicant proposes that the subject parcel be subdivided into only 11 parcels following the approval. If the applicant could demonstrate that all adjacent property was either zoned non-resource or could qualify for re-designation to Marginal Lands, it is possible that 32 10-acre parcels could be developed on the

subject property. The applicant proposes to limit the number of potential parcels, by deed restriction, to 11 parcels and that the deed restrictions also prevent further subdivision of each parcel until such time as the property is included within the urban growth boundary of the city of Eugene. A copy of the "Proposed Parceling Map for Karen Dahlen", that depicts the 11-parcel configuration of the post-approval subject property, is attached as Exhibit M.

2.3 List of Exhibits:

Exhibit A - Assessor's Map
Exhibit B - Legal Description
Exhibit C - Branch Engineering Traffic Analysis
Exhibit D - Board Intepretation
Exhibit E - EGR & Associates, Inc., Aquifer Analysis
Exhibit F - Moshofsky Affidavit
Exhibit G - LCOG Soils Map and Listings
Exhibit H - Marc Setchko Reports
Exhibit I - Marc Setchko 2/23/2004 Report
Exhibit J - Lane County Soil Ratings for Forestry and Agriculture
Exhibit K - Marc Setchko Ponderosa Pine Analysis
Exhibit L- Proposed Parceling Map for Karen Dahlen

3.0 RURAL COMPREHENSIVE PLAN AMENDMENT CRITERIA

3.1 Plan Amendment Criteria of Lane Code 16.400.

A. Lane Code 16.400(6)(h)(iii) (Method of Adoption and Amendment) provides that the Board may amend or supplement the Rural Comprehensive Plan upon making the following findings:

(aa) For Major and Minor Amendments as defined in LC 16 400(8) (a) below, the Plan component or amendment meets all applicable requirements of local and state law, including Statewide Planning Goals and Oregon Administrative Rules

(bb) For Major and Minor Amendments as defined in LC 16.400(8) (a) below, the Plan amendment or component is:

(i-i) necessary to correct an identified error in the Plan; or

(ii-ii) necessary to fulfill an identified public or community need for the intended result of the component or amendment; or

(iii-iii) necessary to comply with the mandate of local, state or federal policy or law; or

(iv-iv) necessary to provide for the implementation of adopted Plan policy or elements, or

(v-v) otherwise deemed by the Board, for reasons briefly set forth in its decisions, to be desirable, appropriate or proper.

(cc) For Minor Amendments as defined in LC 16.400(8) (a), the Plan amendment or component does not conflict with adopted Policies of the Rural Comprehensive Plan and if possible, achieves policy support.

3.1.1 Lane Code 16.400(6)(h)(iii)(aa).

For Major and Minor Amendments as defined in LC 16 400(8) (a) below, the Plan component or amendment meets all applicable requirements of local and state law, including Statewide Planning Goals and Oregon Administrative Rules.

3.1.1.1 Goal 1 - Citizen Involvement.

To ensure the opportunity for citizen involvement in all phases of the planning process.

Chapter Fourteen of the Lane Code provides for a notification and participation process for all quasi-judicial land use matters. Notices of public evidentiary hearings are required to be published in a newspaper of general circulation in the county in conformance with ORS 197.763. By providing the notices required by state law and the Lane Code and the public evidentiary hearings before its planning commission and board of commissioners, Lane County satisfies the requirements and intent of Goal 1.

3.1.1.2 Goal 2 - Land Use Planning.

To establish a land use planning process and policy framework as a basis for all decisions and actions related to the use of land and to assure an adequate factual base for such decisions and actions.

Goal 2 establishes a land use planning process and policy framework as a basis for all land use decisions, and requires development of an adequate factual base to support those decisions. A minor change is one that does not have significant effects beyond the immediate area of change, and is based on special studies or information. The justification for the specific change must be established by substantial evidence in support of the conclusion that the applicable criteria have been met.

Lane County has adopted a comprehensive land use plan amendment process with specific standards that must be addressed to justify a minor change. Substantial compliance with the plan amendment criteria in Lane Code (LC)16.400 constitutes compliance with applicable provisions. This plan amendment must also address and satisfy the criteria set forth in ORS 197.247 (1991 ed.). This application is supported by substantial evidence upon which the Lane County Planning Commission and the Lane County Board of Commissioners may conclude that the applicable criteria have been met.

3.1.1.3 Goal 3 - Agricultural Land

To preserve and maintain agricultural lands.

The subject property is not agricultural land as defined by Goal 3. According to the U.S. Department of Agriculture Soil Conservation Service Soil Survey of Lane County, the subject property contains predominantly Class V-VIII soils and is of low suitability for farming as discussed in Section 3.1.2 below. Accordingly, approval of this application would be consistent with Goal 3.

3.1.1.4 Goal 4 - Forest Lands.

To preserve forest lands for forest use.

The subject property is not suitable for growing and sustaining Douglas-fir or other less merchantable tree species as discussed more fully in Section 3.1.2 below. No other tree species would grow as fast on the subject property or be as valuable and merchantable as Douglas-fir. Zoning the property as Marginal Lands maintains the property in a resource zone and capable of being used for limited, marginal, resource uses. The subject property's suitability for growing and sustaining merchantable tree species is discussed more fully in Section 3.1.2 below. Accordingly, approval of this application would be consistent with Goal 4.

3.1.1.5 Goal 5 - Open Space, Scenic and Historic Areas, and Natural Resources.

To conserve open space and protect natural and scenic resources.

Goal 5 is not applicable to this request. There has previously been a legislative determination by Lane County, as embodied in the acknowledged Lane County Rural Comprehensive Plan, that no Goal 5 resources exist on subject property. The subject property has not been included in any inventory of needed open space or scenic areas defined by Goal 5, nor has it been identified in the RCP as having any historic, cultural or natural resources which need to be preserved and/or protected. The proposed amendment will not conflict with any Goal 5 resources.

3.1.1.6 Goal 6 - Air, Water and Land Resources Quality.

To maintain and improve the quality of the air, water and land resources of the state.

Goal 6 requires that air, land and water resources of the state be maintained and improved by assuring that future development, in conjunction with existing development, does not violate applicable state and federal environmental quality standards, and does not exceed the carrying capacity of local air sheds, degrade land resources or threaten the availability of such resources. Lane County has sufficient regulatory measures in place so as to ensure that existing land use activities, as well as any future development on the site, will not produce any unanticipated impacts resulting from the proposed amendment.

The proposed amendment will not produce results that will be in conflict or inconsistent with the purpose and intent of Goal 6. The proposed amendment change the use designations on the subject property and any additional uses or change of use will require compliance with Lane County's existing regulatory system and measures.

3.1.1.7 Goal 7 - Areas subject to Natural Disasters and Hazards.

To protect life and property from natural disasters and hazards.

No areas containing or prone to natural disasters or natural hazards have been identified on the subject property.

3.1.1.8 Goal 8 - Recreational Needs.

To satisfy the recreational needs of the citizens of the state.

Goal 8 is not applicable to this application. There has previously been a legislative determination by Lane County, as embodied in the acknowledged RCP, that no Goal 8 resources exist on the subject property. The subject property has not been included in any inventory of recreational needs as defined by Goal 8. The proposed amendment will not conflict with any Goal 8 resources.

3.1.1.9 Goal 9 - Economy of the State.

To diversify and improve the economy of the state.

Goal 9 is directed towards the comprehensive plans of the state's political subdivisions. Lane County's Rural Comprehensive Plan has been acknowledged by the Land Conservation and Development Commission. Goal 9 is not applicable to this application beyond a demonstration

that the application is consistent with the Goal 9 policies of the plan. Approval of this application will allow the subject property to be developed with eleven additional home sites. Goal 9 has limited applicability to this application.

3.1.1.10 Goal 10 - Housing.

To provide for the housing needs of the citizens of the state.

Approval of this application would result in the development of 11 parcels with dwellings on the subject property. Approval of this application would be consistent with Goal 10.

3.1.1.11 Goal 11 - Public Facilities and Services.

To plan and develop a timely, orderly and efficient arrangement of public facilities and services to serve as a framework for urban development.

The subject property receives the following public services: Eugene School District 4J(schools); Lane Electric Co-op (electrical power); Eugene Rural Fire District 1 (fire and ambulance); Qwest (telephone); LTD (bus service); Lane County Sheriff's Department and Oregon State Police. While Goal 11 is couched in terms of "urban development," approval of the application will not result in any urban level of development in a rural area. Approval of the application will result in the creation of 10/20-acre and larger parcels which have been legislatively determined to be rural in nature and not constituting urban use. The subject property has access to the full range of public services specified for Communities in RCP Goal 11: Public Facilities and Services, Policy 6.j. No additional public facilities and services will be required beyond the current level. The public services identified above are adequate to serve the level of rural uses that the application envisions and provide the demonstration of consistency with Goal 11.

3.1.1.12 Goal 12 - Transportation.

To provide and encourage a safe, convenient and economic transportation system.

The intent of Goal 12 is also implemented through the provisions of the State Transportation Planning Rule (TPR) (OAR 660, Division 12), which was adopted by LCDC in 1991.

OAR 660-012-0060(1) requires that "amendments to functional plans, acknowledged comprehensive plans, and land use regulations which significantly affect a transportation facility shall assure that allowed land uses are consistent with the identified function, capacity, and level of service of the facility."

To determine whether the proposed amendment will significantly affect a transportation facility, the TPR lists specific criteria against which the proposed amendments are to be evaluated. The

TPR provides that a plan or land use regulation amendment significantly affects a transportation facility if it:

(a) Changes the functional classification of an existing or planned transportation facility;

(b) Changes standards implementing a functional classification system;

(c) Allows types or levels of land uses which would result in levels of travel or access which are inconsistent with the functional classification of a transportation facility; or,

(d) Would reduce the level of service of the facility below the minimum acceptable level identified in the TSP (Transportation System Plan).

The applicant submits that the approval of the proposal cannot result in any of the four situations provided by the TPR criteria listed above. Development of 11 parcels with dwellings will produce typically 10 trips per day for each parcel, resulting in a total trip per day count of approximately 110. Willamette Street, a major collector, will not experience a change in its functional classification as a result of an additional 110 trips per day and the total trips per day are not inconsistent for a major collector and will not reduce the level of service below the minimum acceptable level identified in the TSP (Transportation System Plan).

The engineering firm Branch Engineering has analyzed the traffic impact resulting from approval of the application and has concluded that it would not have a significant impact on transportation facilities. A copy of the firm's analysis and conclusions is provided as Exhibit C.

Approval of the application will be consistent with the intent and purposes of Goal 12.

3.1.1.13 Goal 13 - Energy Conservation.

To conserve energy

Goal 13 requires that land uses maximize conservation of all forms of energy based on sound economic principles. It is implemented by local plans and regulations that control location, orientation and density of development to minimize net energy consumption. Any development on the subject property will be subject to those rules.

Approval of this application would be consistent with Goal 13.

3.1.1.14 Goal 14 - Urbanization.

To provide for an orderly and efficient transition from rural to urban land use.

The entire ownership of the applicant is within an area committed to rural uses, both resource and non-resource in nature, as designated and provided by Lane Code and the acknowledged

RCP. No urban uses are contemplated as a result of approval of this application. No extension of urban services is necessary as a result of approval of this application. Approval of this application will not change the uses made on the subject parcel from rural to urban.

The uses on the subject parcels resulting from approval of this application could include agriculture, forestry and rural residential use, all of which are rural in nature. The uses contemplated by this application (resource and rural residential uses) are all permitted uses of the ML zone as provided by Lane Code. The uses are not considered urban by the code in its implementation of the acknowledged RCP. Therefore, approval of this application would not result in the establishment of urban land use or urban land use in transition from rural land use.

All parcels resulting from approval of the subject application shall be no less than 14 acres in size which will not prevent further urban development in the future if the subject property is included with the Metro Plan UGB and Eugene city limits.

Approval of this application is consistent with Goal 14.

3.1.1.15 Goal l5 - Willamette River Greenway.

To protect, conserve, enhance and maintain the natural, scenic, historical, agricultural, economic and recreational qualities of lands along the Willamette River as the Willamette River Greenway.

The subject property is not located within the Willamette River Greenway. Goal 15 is not applicable to this application.

3.1.1.16 Goal 16 - Estuarine Resources.

To recognize and protect the unique environmental, economic, and social values of each estuary and associated wetlands; and

To protect, maintain, where appropriate develop, and where appropriate restore the long-term environmental, economic, and social values, diversity and benefits of Oregon's estuaries.

The subject property contains no estuarine resources. Goal 16 is not applicable to this request.

3.1.1.17 Goal 17 - Coastal Shorelines.

To conserve, protect, where appropriate, develop and where appropriate restore the resources and benefits of all coastal shorelines, recognizing their value for

protection and maintenance of water quality, fish and wildlife habitat, water-dependent uses, economic resources and recreation and aesthetics.

The subject property contains no coastal shorelines. Goal 17 is not applicable to this request.

3.1.1.18 Goal 18 - Beaches and Dunes.

To conserve, protect, where appropriate develop, and where appropriate restore the resources and benefits of coastal beach and dune areas.

The subject property contains no beaches or dunes. Goal 18 is not applicable to this request.

3.1.1.19 Goal 19 - Ocean Resources.

To conserve the long-term values, benefits, and natural resources of the nearshore ocean and the continental shelf.

The subject property contains no ocean resources. Goal 19 is not applicable to this request.

3.1.2 Lane Code 16.400(6)(h)(iii)(bb)

For Major and Minor Amendments as defined in LC 16.400(8) (a) below, the Plan amendment or component is:

(i-i) necessary to correct an identified error in the Plan; or

The subject property was designated Agriculture and zoned EFU 40 as part of the Lane County Rural Comprehensive Plan adoption process in 1984. Nonetheless, it was so designated and zoned pursuant to County policy which determined that lands that might qualify as marginal lands should be addressed subsequently on a case-by-case basis pursuant to policies in the RCP and the statutory criteria in ORS 197.247(1991 ed).

(ii-ii) necessary to fulfill an identified public or community need for the intended result of the component or amendment; or

Not applicable.

(iii-iii) necessary to comply with the mandate of local, state or federal policy or law; or

Not applicable.

(iv-iv) necessary to provide for the implementation of adopted Plan policy or elements, or

ORS 197.247 (1991 ed.) authorizes counties to designate land as marginal land. Lane County has acted to utilize this authority through the adoption of RCP Goal 3, Policy 14 and Goal 4, Policy 3. Those policies require an applicant for a Marginal Lands designation and zoning to address and satisfy the requirements of ORS 197.247 (1991 ed.) and applicable Lane County policies and requirements. The subject application is implementing policies in the RCP which allow qualified resource lands to be designated as Marginal Lands rather than Agriculture or Forest.

In order to aid applicants, the staff and general public in addressing the Marginal Lands criteria, the Lane County Board of Commissioners, in 1997, adopted an interpretation of and supplement to the County's Marginal Lands information sheet ("the Board interpretation") a copy of which is attached as Exhibit D. The Board interpretation clarifies how the Marginal Lands statute and criteria are to be applied in specific situations by addressing seven issues and providing policy direction for each. As discussed in this application, the Board interpretation has particular relevance to this application in the context of evaluating the site's ability to grow merchantable timber.

ORS 197.247(1) (1991 ed.)) provides the following criteria:

(a) The proposed marginal land was not managed, during three of the five calendar years preceding January 1, 1983, as part of a farm operation that produced $20,000 or more in annual gross income or a forest operation capable of producing an average, over the growth cycle, of $10,000 in annual gross income; and

(b) The proposed marginal land meets at least one of the following tests:

(A) At least 50 percent of the proposed marginal land plus the lots or parcels at least partially located within 0ne-quarter mile of the perimeter of the proposed marginal land consists of lots or parcels 20 acres or less in size on July 1, 1983;

(B) The proposed marginal land is located within an area of not less than 240 acres of which at least 60 percent is composed of lots or parcels that are 20 acres or less in size on July 1, 1983; or

(C) The proposed marginal land is composed predominately of soils in capability classes V through VIII in the Agricultural Capability Class Classification System in use by the United States Department of Agriculture Conservation Service on October 15, 1983, and is not capable of producing fifty cubic feet of merchantable timber per acre per year in those counties east of the summit of the Cascade Range and

eighty-five cubic feet of merchantable timber per acre per year in those counties west of the summit of the Cascade Range.

The applicant has addressed subsections (a) and (b)(C) of the statute for demonstrating that the subject property is suitable for Marginal Lands designation. The following text addresses each of those criteria:

ORS 197.247(1)(a):

The subject property was not managed, during three of the five calendar years preceding January 1, 1983, as part of a farm operation that produced $20,000 or more in annual gross income. Art Moshofsky and members of his family owned the subject property during and throughout the period between 1978 and 1983. Mr. Moshofsky has provided an affidavit, dated December 17, 2003, that demonstrates that the subject property was not managed, during three of the five calendar years preceding January 1, 1983,as part of a farm operation that produced $20,000 or more in annual gross income. Mr. Moshofsky's affidavit is attached as Exhibit F and incorporated herein. (Mr. Moshofsky's affidavit states that "(A)t no time during the period stated in paragraph 1. above was the above described property managed as part of a farming operation. By "farm operation" I mean the employment of the subject property for the primary purpose of obtaining a profit in money. By "farm operation" I also mean all uses and activities defined as "farm use" and "current employment" of land in ORS 215.203(2).") Mr. Moshofsky's affidavit is substantial evidence supporting the applicant's position that the subject property meets the ORS 197.247(1)(a) requirements regarding farm income. Lane County has previously found, in its administrative approval of PA 03-5657, dated June 15, 2004, that the affidavit of Mr. Moshofsky was sufficient and substantial evidence that the farm income requirement of the statute was fulfilled and that the subject property qualified for Marginal Lands designation pursuant to ORS Chapter 197.

The applicant requests that the Lane County File for PA 03-5657 be made a part of the record of this application.

The subject property was not managed, during three of the five calendar years preceeding January 1, 1983, as part of a forest operation capable of producing an average, over the growth cycle, of $10,000 in annual gross income.

Lane County, in its approval of PA 03-5657, has found that substantial evidence exists in the record of that application to support a conclusion and finding that the subject property was not managed a part of a forest operation capable of producing an average, over the growth cycle, of $10,000 in annual gross income.

In PA 03-5657 the applicant provided the professional testimony of a consulting forester, Marc Setchko. Mr. Setchko provided an analysis, to the record of PA 03-5657, of the timber-growing potential of the subject property and concluded that the subject property could not be managed as a forest operation capable of producing an average, over the growth cycle, of $10,000 in annual gross income. Mr. Setchko, with both professional credentials and 27 years of experience, is

highly qualified to render such an analysis and conclusion. Mr. Setchko's opinion was based on a detailed analysis of the subject property's existing soils, as detailed by the Lane Council of Government (LCOG) (whose soil map and listing of soils is attached as Exhibit G), their ability to grow merchantable timber and conversion of that growth potential into dollars based upon Douglas-fir log prices of 1983. Mr. Setchko's methodology for determining forest income capability is dictated by the Board interpretation (Direction for Issue 4.). Mr. Sechko's analysis used a fifty-year growth cycle as directed by the Board interpretation (Direction for Issue 5.) Mr. Setchko used Douglas-fir log prices because Douglas-fir is the most valuable of all merchantable tree species and generates the most income of all tree species. Mr. Setchko's analysis and conclusions were provided in two segments. The first segment contained Mr. Setchko's original analysis and the second segment provided modifications and additions to the analysis that included ratings for all soils on the subject property and discussion of other issues relevant to the discussion of ORS 197.247(b)(C). Copies of both segments of Mr. Setchko's analysis (and consistent conclusion in both) are attached as Exhibit H. On February 23, 2004, Mr. Setchko provided additional information regarding his methodologies for addressing both income and productivity issues. That information is attached as Exhibit I and further supports his conclusion the subject property was not managed a part of a forest operation capable of producing an average, over the growth cycle, of $10,000 in annual gross income.

ORS 197.247(1)(b)(C):

The subject property is composed predominately of soils in capability classes V through VIII in the Agricultural Capability Classification System in use by the United States Department of Agriculture Soil Conservation Service on October 15, 1983.

Based upon the LCOG soils map and soil listing for the subject property, the capability classes of soils can be determined by the Lane County Soil Ratings for Forestry and Agriculture, dated August 1997, and prepared by LCOG. A copy of that Lane County/LCOG document is attached as Exhibit J. The document contains a preface on Page 1 that states: The Lane County Land Management Division, with technical assistance from Lane Council of Governments, compiled this data to assist the public in preparing land use applications. The Natural Resources Conservation Service (NRCS) reviewed the data and methodology." The data contained in the document varies slightly from data contained in the Agricultural Capability Classification System in use by the United States Department of Agriculture Soil Conservation Service on October 15,1983, but not in a manner that significantly changes the outcome of the calculations regarding percentage of capability classes. The slight variance is discussed below.

By using the document's capability classifications listed with each soil type a calculation of the percentage of soils in capability class I-IV and the percentage of soils in capability class V-VIII can be determined. Soils of the subject property are composed of 41.21% class I-IV soils and 58.79% class V-VIII soils. The noted variance in data in the document relates to the two soil complexes found on the subject property, Dixonville-Philomath-Hazelair complex, 3-12% slopes (43C) and Dixonville-Philomath-Hazelair complex, 12-35% slopes (43E). 43C is listed as Agricultural Capability Class III and 43E is listed as Agricultural Capability Class IV. In

previous Soil Conservation Service (SCS) publications, particularly the 1987 publication of 1981 data, 43C and 43E are both listed as Class VI. Using the earlier classifications SCS classifications the calculations would have produced an even higher percentage of Class V-VIII soils.

The subject property is not capable of producing eighty-five cubic feet of merchantable timber per acre per year. The three Setchko reports all reach the same conclusion that the subject property is not capable of producing eighty-five cubic feet of merchantable timber per acre per year. Mr. Setchko's report, attached as Exhibit I, responds to arguments made by Goal One Coalition in PA 03-5657 regarding soil ratings, methodologies and tree species. In that report Mr. Setchko calculates the productivity of the subject property, in terms of cubic feet per acre per year, by employing six different tables of soil ratings to calculate the productivity figures. The tables represent a progression of soil ratings, beginning with the LCOG document (Exhibit J) and including tables of additional soil ratings published by SCS and the Oregon Office of State Forester and ending with a table that includes the highest ratings for each soil found in any of the documents and the unsupported ratings contained in Goal One Coalition's arguments. Regardless of the ratings used, including those argued without foundation or authority by Goal One Coalition, the resulting calculation of productivity from each table is uniformly less than eighty-five cubic feet per acre per year of merchantable timber.

That report also contains an analysis of other tree species. Many of the species that Goal One Coalition argues must be analyzed are not merchantable species in Mr. Setchko's opinion. Goal One Coalition provided no substantial evidence in PA 03-5657 to refute or contradict Mr. Setchko's professional opinion regarding the merchantability of those particular species. Furthermore, Goal One Coalition provided no authority or foundation for its arguments regarding soil ratings, productivity or tree species. Mr. Setchko further opines that all other merchantable tree species would either not grow on the soils of the subject property or would not produce a volume in cubic feet that would equal the growth rate of Douglas-fir. Mr. Setchko, in his analysis of the productivity of various tree species, provides a professional and scientific foundation to the reasoning of the SCS NRCS in using Douglas-fir as the indicator species for productivity on Western Oregon soils.

Mr. Setchko, in response to continuing arguments made by Goal One Coalition in other Marginal Lands plan amendment applications, prepared an analysis of the Goal One Coalition's arguments regarding the productivity and merchantability of Ponderosa Pine, Hybrid Poplar and KMX in the Willamette Valley. In supplemental testimony for PA 02-5838 (Ogle-Child), dated September 8, 2004, Mr. Setchko opines that Goal One Coalition has misapplied and misused information from various internet publications to conclude that Ponderosa Pine, Hybrid Poplar and KMX have a much higher productivity potential on Western Oregon soils than is accurate and than can be scientifically verified. His analysis and conclusions regarding the productivity and merchantability of each of the three species (pages 6-9 of his testimony) is attached as Exhibit K. His conclusions mirror his earlier attached opinion that all other potentially merchantable tree species would either not grow on the soils of the subject property or would not produce a volume in cubic feet that would equal the growth rate of Douglas-fir.

As a final note on arguments raised by Goal One Coalition in other Marginal Lands applications, it should be noted that the subject property was not acknowledged by Lane County as forest lands on the date Goal 4 was amended. Lane County's comprehensive plan is acknowledged and the present plan amendment does not involve forest lands because the subject property is designated Agriculture and zoned Exclusive Farm Use. That means that all of Goal One Coalition's references, in those other applications, to definitions and other materials in Division 6 of OAR 660 (entitled "Goal 4, FOREST LANDS") are not applicable to this plan amendment.

Conclusion: The subject property qualifies under ORS 197.247(1) (1991 ed.) as Marginal Lands because:

(a) It was not managed during three of the five calendar years preceding January 1, 1983, as part of a farm operation that produced $20,000 or more in annual gross income;

(b) It was not managed as part of a forest operation during that same time period which was capable of producing an average, over the growth cycle, of $10,000 in annual gross income;

(c) It is composed predominantly of soils in agricultural capability classes V through VIII, and

(d) It is not capable of producing 85 cubic feet of merchantable timber per acre per year.

Substantial evidence has been provided, particularly the various Setchko reports and the analysis contained therein, to support each of the above conclusions.

(v-v) otherwise deemed by the Board, for reasons briefly set forth in its decisions, to be desirable, appropriate or proper.

The totality of this application's response to and treatment of applicable criteria, coupled with the benefits accruing to both the public and the applicant as demonstrated in this application, provides the Lane County Board of Commissioners with adequate foundation and reason to determine that approval of the application is desirable, appropriate and proper and would be a demonstration of good public policy.

3.1.3 Lane Code 16.400(6)(h)(iii)(cc).

For Minor Amendments as defined in LC 16.400(8) (a), the Plan amendment or component does not conflict with adopted policies of the Rural Comprehensive Plan and, if possible, achieves policy support.

There are no policies in the adopted and acknowledged RCP that conflict with this request for plan amendment. As discussed in the previous section, there are policies in the RCP that specifically support and encourage approval of Marginal Lands applications for qualified property. This application addresses and satisfies the Marginal Lands criteria that are set forth in ORS 197.247 (1991 ed.).

Approval of this plan amendment is also consistent with the Board's interpretation of the Marginal Lands statute (ORS 197.247 (1991 ed.)) and its application to individual requests for plan amendment. The application is supported by detailed and thorough analysis and testimony provided by qualified professional consultants. The analysis and testimony was produced and provided in conformance with direction provided by the Board's interpretation.

Other RCP policies that may be relevant to this decision are as follows:

3.1.3.1 GOAL ONE: CITIZEN INVOLVEMENT

Notice to affected property owners and evidentiary hearings provided by Lane County will ensure that the application meets and supports the citizen involvement goal and policies of the comprehensive plan.

3.1.3.2 GOAL TWO: LAND USE PLANNING

3.1.3.2.1 Policy 25: Changes to Plan Diagram

This application for amendment of the Plan Diagram designation for the subject property has been evaluated through the county's plan amendment procedure and approval of this application is based upon fulfillment of the criteria of Lane Code 16.400 which is addressed in Section 3 of this application.

3.1.3.3 GOAL THREE: AGRICULTURAL LANDS

The applicant has demonstrated that the subject property is not agricultural land as defined by Goal 3 and, accordingly, approval of this application is consistent with Goal 3.

3.1.3.4 GOAL FOUR: FOREST LANDS

3.1.3.4.1 Policy 1: Conservation of forest lands

The primary policy of both the comprehensive plan and statewide planning goals regarding forest lands is the conservation of those lands for multiple forest uses. Approval of this

application, as demonstrated in other sections of it, is consistent with and supports Policy 1 of Goal 4 of the RCP.

3.1.3.5 GOAL FIVE: OPEN SPACES, SCENIC AND HISTORIC AREAS AND NATURAL RESOURCES

3.1.3.5.1 Policy 3: Adequacy of water supply

The adequacy of water supply for the proposed development of the subject property is discussed in Section 3.1.3.5.2 below.

3.1.3.5.2 Policy 5: Land use designation commensurate with groundwater aquifer capacities

The subject property lies within an area identified as a "broad areas of very limited groundwater" area in Lane Manual 13.010 and the availability of water commensurate with the proposed development of the subject property is demonstrated by the analysis and conclusions of EGR and Associates, Inc.(EGR). The results of the aquifer analysis by EGR, dated July 27, 2004, is attached as Exhibit E.

In the attached aquifer analysis EGR concludes that there is sufficient water available from the aquifer for all of the proposed parcels, for domestic use, without adverse effects to neighboring wells..

3.1.3.6 GOAL SIX: AIR, WATER AND LAND RESOURCES

Goal Six considerations have been discussed in Section 3.1.3.5.2 of this application and are applicable to this section.

3.1.4 Lane Code 16.400(6)(h)(iii)(dd).

> ***For Minor Amendments as defined in LC 16.400(8)(a) below, the Plan amendment or component is compatible with the existing structure of the Rural Comprehensive Plan, and is consistent with the unamended portions or elements of the Plan.***

As discussed in previous sections, this plan amendment is consistent with and satisfies the criteria that are referenced and adopted by specific policies in the RCP. Those policies are RCP Goal 3, Agricultural Lands, Policy 14 and RCP Goal 4, Forest Lands, Policy 3, which specifically allow certain, qualified, resource lands to be designated and zoned Marginal Lands. Approval of this amendment is consistent with the RCP policies for farm (Goal 3) and forest (Goal 4) lands.

The Board interpretation recognizes this consistency. It states under "ISSUE 1":

> "Marginal land is intended to be a sub-set of resource land, i.e., there are 'prime' resource lands and 'marginal' resource lands. The marginal lands are to be available for occupancy and use as smaller tracts than are required in the better resource lands. The criteria in the law define which lands may be designated as marginal. Evidence for this position is found in the legislative history and the fact that marginal lands are recognized in both Statewide Goal 3 - Agricultural Lands and Goal 4 - Forest Lanes."

Marginal lands are resource lands that are intended for occupancy with limited rural residential development.

Based on the evidence provided in this application which addresses and satisfies the criterion in ORS 197.247 (1991 ed.) and the above-referenced RCP resource policies, approval of the plan amendment would be compatible with the existing structure of the acknowledged RCP and is consistent with the unamended portions and elements of the RCP.

4.0 Zone Change Criteria of Lane Code 16.252

4.1 Lane Code 16.252(2) (Criteria)

> ***Zonings, rezonings and changes in the requirements of this chapter shall be enacted to achieve the general purpose of this chapter and shall not be contrary to the public interest. In addition, zonings and rezonings shall be consistent with the specific purposes of the zone classification proposed, applicable Rural Comprehensive Plan elements and components, and Statewide Planning Goals for any portion of Lane County which has not been acknowledged for compliance with the Statewide Planning Goals by the Land Conservation and Development Commission. Any zoning or rezoning may be effected by Ordinance or Order of the Board of County Commissioners, the Planning Commission or the Hearings Official in accordance with the procedures in this section.***

Approval of the plan amendment would result in a change in zoning of the subject property from Exclusive Farm Use 40 to Marginal Lands. The facts relevant to the zone change standards are largely redundant with the facts relevant to plan policies and the Statewide Planning Goals and have been addressed in preceding sections of this application.

The proposed zone change is consistent with the general purposes of LC Chapter 16 as set forth in LC 16.003 in that:

1) In conformity with various development rules discussed above, the subject property will be developed commensurate with the character and physical limitations of the land and will thus promote the health, safety and general welfare of the built environment;

2) It will provide home construction opportunities to aid the economy;

3) It will conserve farm and forest lands by locating residential opportunities within a resource zone that allows limited residential development in concert with resource use;

4) It will aid in the provision of affordable housing that allows a reasonable selection of a place to live;

5) By it location near the edge of the Metro Plan UGB and Eugene city limits, it will provide for the orderly and efficient transition from rural to urban lands and the efficient provision of public facilities and services; and

6) By virtue of regulations discussed above, it will protect the quality of the land, air and water of the county and will protect life and property in areas subject to flooding.

The proposed zone change is consistent with the purposes of the Marginal Lands Zoning District because it provides an alternative to more restrictive farm and forest zoning and it will allow a majority of the uses permitted in the Marginal Lands Zoning District and thereby provide opportunities for persons to live in a rural environment and to conduct intensive or part-time farm or forest operations. It would be applied to property in accordance with Lane Code Chapter 16 criteria and procedures, RCP plan policies and criteria in ORS 197.247 (1991 ed.).

5.0 CONCLUSION

This application has addressed the applicable criteria, shown consistency with that criteria, has demonstrated good public policy through the public and private benefits accruing from its proposal and provides Lane County with the appropriate foundation from which to approve the proposed plan amendment and re-zoning. The application contains substantial evidence to support the finding and conclusion that it meets and satisfies all of the relevant criteria required for approval.

EXHIBIT "A"

Section 24 T.18S. R.4 W.W.M.

LANE COUNTY

1"=400'

18 04 24

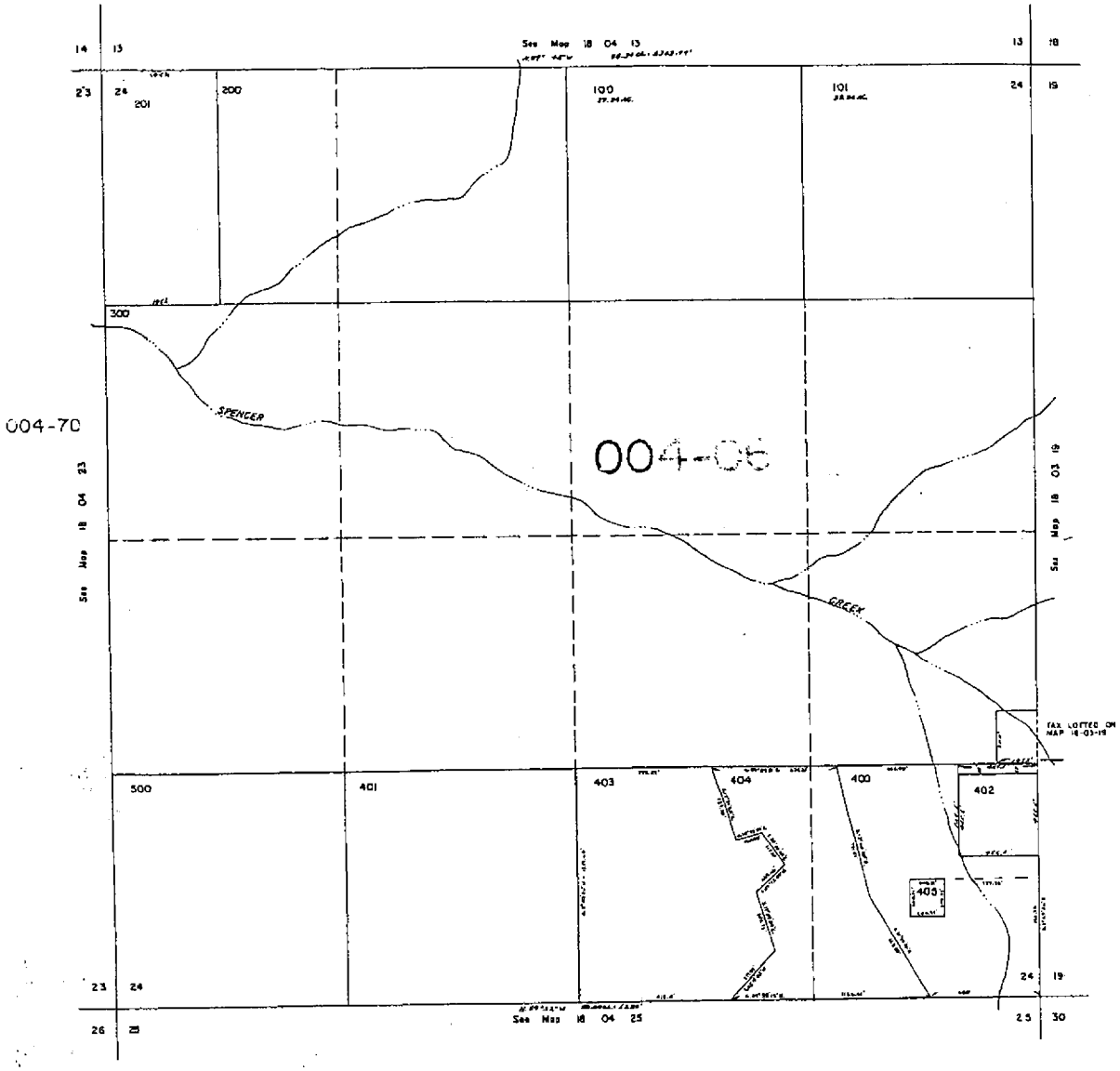


EXHIBIT "B"

The Northeast quarter of the Southeast quarter; the Southeast quarter of the Northeast quarter; the Southwest quarter of the Northeast quarter; the Northwest quarter of the Southeast quarter; the South half of the Northwest quarter and the North half of the Southwest quarter, all of Section 24, Township 18 South, Range 4 West of the Willamette Meridian, in Lane County, Oregon.

EXCEPT the following:

Beginning at the intersection of the centerline of Willamette Street (County Road No. 436) and the South line of the Northeast 1/4 of the Southwest 1/4 of Section 19, Township 18 South, Range 3 West of the Willamette Meridian; thence West 1452.0 feet along the South line of the Northeast 1/4 of the Southwest 1/4; the Northwest 1/4 of the Southwest 1/4 of Section 19 and the Northeast 1/4 of the Southeast 1/4 of Section 24, Township 18 South, Range 4 West of the Willamette Meridian; thence North 300.0 feet; thence East to the center line of Willamette Street (County Road No. 436); thence Southerly along the center line of said Willamette Street to the place of beginning, in Lane County, Oregon.

SUBJECT TO boundary line agreements recorded on December 24, 1975, as Reception No. 75-56345 on May 11, 1983, as Reception No. 83-15756, records of Lane County, Oregon.

EXHIBIT "C"

Branch Engineering, Inc.

310 5th Street
Springfield, Oregon 97477
(541) 746-0637
Fax (541) 746-0389

Technical Memorandum

REGISTERED PROFESSIONAL ENGINEER #62780PE OREGON JULY 13, 2004 DAMIEN GILBERT

Date: August 4, 2004

To: Ms. Karen Dahlen

From: Damien Gilbert, P.E.

Re: **Zone Change and Rural Comprehensive Plan Amendment**
Map 18-04-24, Lot 300, Lane County, Oregon
Evaluation of Applicable Transportation Planning Rule

As requested, Branch Engineering, Inc. has evaluated potential traffic impacts associated with your proposed Zone Change and Rural Comprehensive Plan Amendment allowing the potential development of additional residential dwellings. The scope of the evaluation was limited to criteria in the Transportation Planning Rule (TPR) as set forth in Oregon Administrative Rules (OAR) Chapter 660, Division 12, the 1999 Oregon Highway Plan (OHP) and the March, 2004 Lane County Transportation System Plan (TSP).

Project Description

The subject property is approximately 320 acres in size located between West 52nd Avenue and Camas Lane, West of South Willamette Street, in Lane County, as shown in Figure 1.

There are currently two dwellings on the property, one of which is planned for removal.

The proposal includes a Zone Change and Rural Comprehensive Plan Amendment from Impacted Forest (F-2) to Marginal Lands (ML-RCP), allowing the potential development of 31 additional residential dwellings. Specifically, the use is intended to be a 12-lot residential subdivision development in the future. Both development scenarios (12-lot and 32-lot) are analyzed in this evaluation. For purpose of analysis, one dwelling was subtracted from both development scenarios, as a single dwelling is currently allowed under the existing use.

VICINITY MAP
LANE COUNTY, OREGON

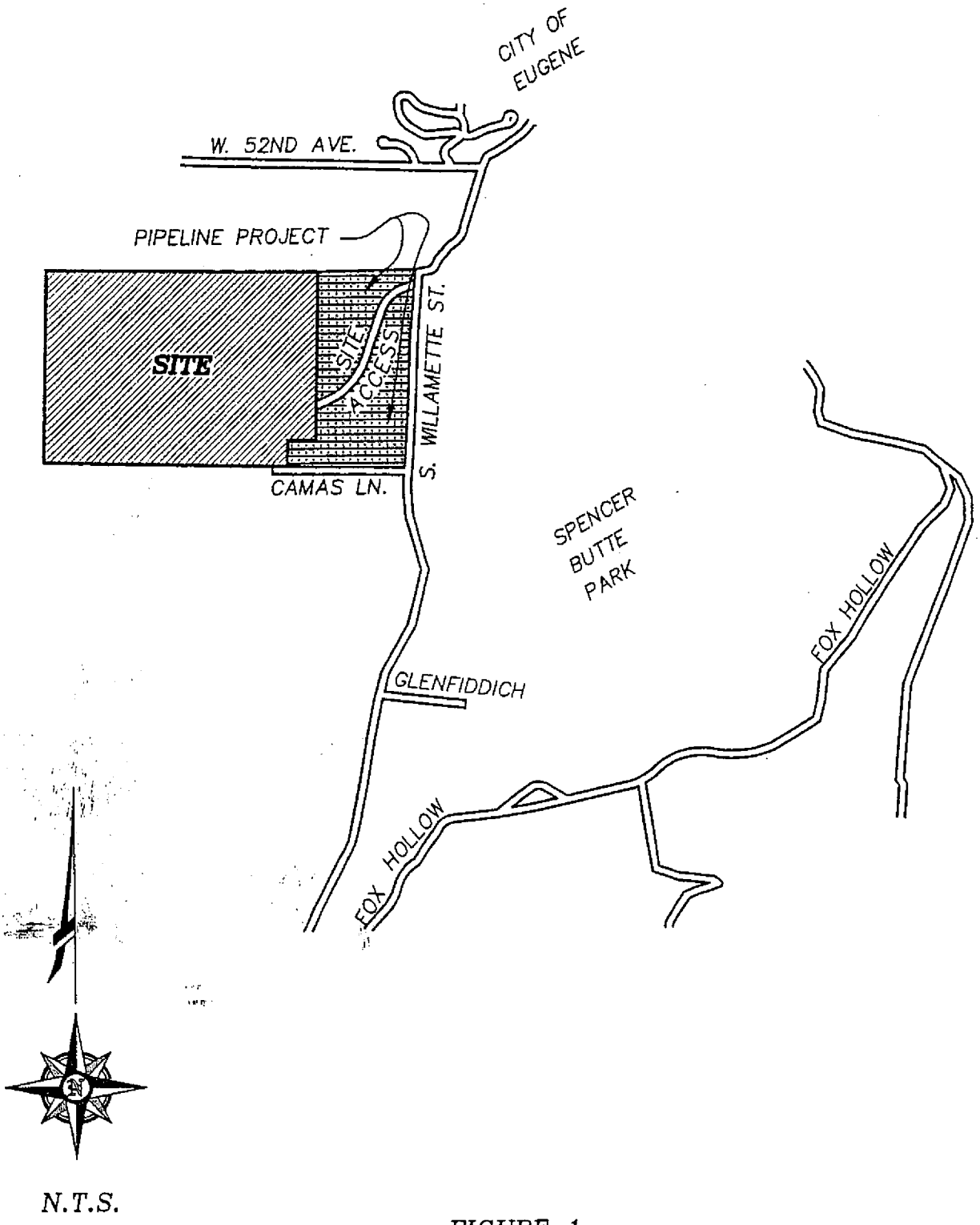


FIGURE 1

Branch Engineering, Inc.

Relevant Criteria

OAR 660-012-0060(1) states:

> Amendments to functional plans, acknowledged comprehensive plans, and land use regulations which significantly affect a transportation facility shall assure that allowed land uses are consistent with the identified function, capacity, and performance standards (e.g. level of service, volume to capacity ratio, etc.) of the facility. This shall be accomplished by either:
>
> (a) Limiting allowed land uses to be consistent with the planned function, capacity, and performance standards of the transportation facility;
>
> (b) Amending the TSP to provide transportation facilities adequate to support the proposed land use consistent with the requirements of this division;
>
> (c) Altering land use designations, densities, or design requirements to reduce demand for automobile travel and meet travel needs through other modes; or
>
> (d) Amending the TSP to modify the planned function, capacity and performance standards, as needed, to accept greater motor vehicle congestion to promote mixed use, pedestrian friendly development where multimodal travel choices are provided.

OAR 660-12-060(2) establishes that a proposed plan amendment would "significantly affect" a transportation facility if it:

> (a) Changes the functional classification of an existing or planned transportation facility;
>
> (b) Changes standards implementing a functional classification system;
>
> (c) Allows types or levels of land uses which would result in levels of travel or access which are inconsistent with the functional classification or a transportation facility; or
>
> (d) Would reduce the level of service of a facility below the minimum acceptable level identified in the TSP."

Applicable Criteria

To satisfy OAR 660-012-0060(1)(a), the following four criteria were applied to the proposed plan amendment / zone change and evaluated for applicability.

- OAR 660-12-060(2)(a) is not applicable, as the proposed amendment would not change

the functional classification of an existing or planned transportation facility.

- OAR 660-12-060(2)(b) is not applicable, as the proposed amendment does not change standards implementing a functional classification system.

- OAR 660-12-060(2)(c) is applicable, and is satisfied, as the proposed amendment will continue to allow types or levels of land uses which would result in levels of travel or access which are consistent with the functional classification of the transportation facility.

  The subject property will utilize an existing private drive for access to Willamette Street (a Major Collector County roadway). This roadway is 30 feet wide in the project vicinity and currently channels traffic from rural neighborhoods to the City of Eugene maintained portion of Willamette Street (a minor arterial). The average daily traffic (ADT) volume on South Willamette Street is 1500, per 2003 Lane County Traffic Volume Tables, and the alignment is considered "rolling terrain".

  Under the worst case development scenario, the ADT on South Willamette Street would be expected to increase by approximately 300 vehicles per day. The resulting 2004 ADT volume would be approximately 1,800, which is within the range normally expected for a major collector roadway, and is consistent with the functional classification of the transportation facility.

  Furthermore, Lane Code defines a major collector roadway in rural areas, as to "provide connections from outlying areas to the arterial system (primarily state highways)". This is consistent with the proposal to utilize South Willamette Street for a link between the existing private drive proposed for access and the City of Eugene arterial system.

- OAR 660-12-060(2)(d) is applicable and is satisfied by the following analysis provided herein.

Mobility Standards

Client supplied information was used for future development of the property to determine a "reasonable worst case development scenario". The potential site generated traffic for additional future residential dwellings would have a net gain in vehicle trips entering and leaving the site. Therefore, to satisfy OAR 660-012-0060(1)(a), "Limiting allowed land uses to be consistent with the planned function, capacity and performance standards of the transportation facility", it has to be demonstrated that no transportation facility would be significantly affected by a reduction of level of service below the minimum acceptable level identified in the (TSP), as applicable in OAR 660-12-060(2)(d).

Level of service (LOS) describes the quality of traffic flow at an intersection. It can be based on either vehicle delay or the volume to capacity ratio (v/c). The TSP identifies the maximum acceptable v/c for County roads outside unincorporated communities and outside an urban growth boundary to be 0.70. Additionally, the TSP requires LOS 'D' or better to be maintained.

A level of service analysis was performed for the PM peak hour at the intersection of South Willamette Street and the existing driveway proposed to be utilized for future site access. Calculations were performed using the computer program Highway Capacity Software 2000, Version 4.1d by McTrans. Level of service and v/c were calculated for each movement which has to yield the right-of-way. Additionally, LOS was determined for the adjacent rural two-lane highway (South Willamette Street).

Analysis

Intersection LOS was calculated and analysis was performed for the "reasonable worst case scenario" development assumptions for a 20 year planning horizon, as required in the TSP.

Traffic counts were performed in August, 2004 at the nearest transportation facility (proposed site access and Willamette Street intersection) to determine existing PM peak hour traffic volumes. Results of counts indicate the PM peak hour occurs between 5:00 and 6:00 PM. The existing traffic volumes are shown in Figure 2.

A tentative five lot residential subdivision has been approved for Map 18-03-19, Lot 1300 which utilizes the proposed site access. In the future, this subdivision will include the development of five residential dwellings, and therefore, is expected to generate approximately six new PM peak hour vehicle trips (four entering and two leaving). This pipeline project generated traffic was added to the subject site generated traffic, as both developments will utilize the same private drive. Figure 3 illustrates assignments of pipeline project generated PM peak hour traffic volumes.

For the purpose of estimating future year 2024 background traffic volumes, existing traffic volumes on South Willamette Street were factored up at a two percent per year growth rate. Figure 4 illustrates future 2024 'no build' PM peak hour traffic volumes with pipeline project traffic added.

In estimating vehicle trip generation rates for the proposed use, a reference was made to Trip Generation, 7th Edition, published by the Institute of Transportation Engineers (ITE), 2003, and client supplied "reasonable worst case scenario" land use and density assumptions were applied. The analyzed development scenarios included a ten lot residential subdivision (Scenario 'A'), which includes 11 new single family detached dwellings potentially impacting a transportation facility, and a 32 lot residential subdivision (Scenario 'B'), which includes 31 new single family detached dwellings potentially impacting a transportation facility.

The following summary table identifies the projected PM peak hour trips entering and leaving the site for both development scenarios:

TRIP GENERATION (PM Peak Hour)			
Land Use	**Vehicles Per Hour** Enter	Leave	Total
Single-Family Detached Housing ITE Land Use 210 Average Rate = 1.01 per Dwelling Unit	(64%)	(36%)	(100%)
Scenario 'A' Proposed Dwelling Units = 11	8	4	12
Scenario 'B' Proposed Dwelling Units = 31	20	12	32

The above site generated traffic was distributed to the adjacent roadway system based on observed traffic patterns, and assigned to specific intersection movements at the studied intersection.

Figure 5 illustrates assignments of site generated PM peak hour traffic volumes for both development scenarios.

Site generated traffic for both development scenarios was added to year 2024 background traffic volumes, resulting in 20 year planning horizon 'build' traffic volumes, as shown in Figure 6. Based on these volumes, v/c and LOS was calculated.

Results of the calculations are included with this memorandum, and are summarized in the following tables:

SCENARIO 'A' LEVEL OF SERVICE 2024 'Build' (PM Peak Hour)			
Facility (Intersection)	**Movement**	**v/c**	**LOS**
Site Access / S. Willamette Street	Northbound - Left Eastbound Approach	0.00 0.01	A A

SCENARIO 'B' LEVEL OF SERVICE 2024 'Build' (PM Peak Hour)			
Facility (Intersection)	**Movement**	**v/c**	**LOS**
Site Access / S. Willamette Street	Northbound - Left Eastbound Approach	0.00 0.02	A A

The greatest increase of new vehicle trips projected to impact an adjacent intersection (beyond the studied intersection) is 32 under Scenario 'B'. This volume is within the expected daily fluctuation of measurable traffic volumes on South Willamette Street, and was considered negligible. No transportation facilities were analyzed beyond the above studied intersection.

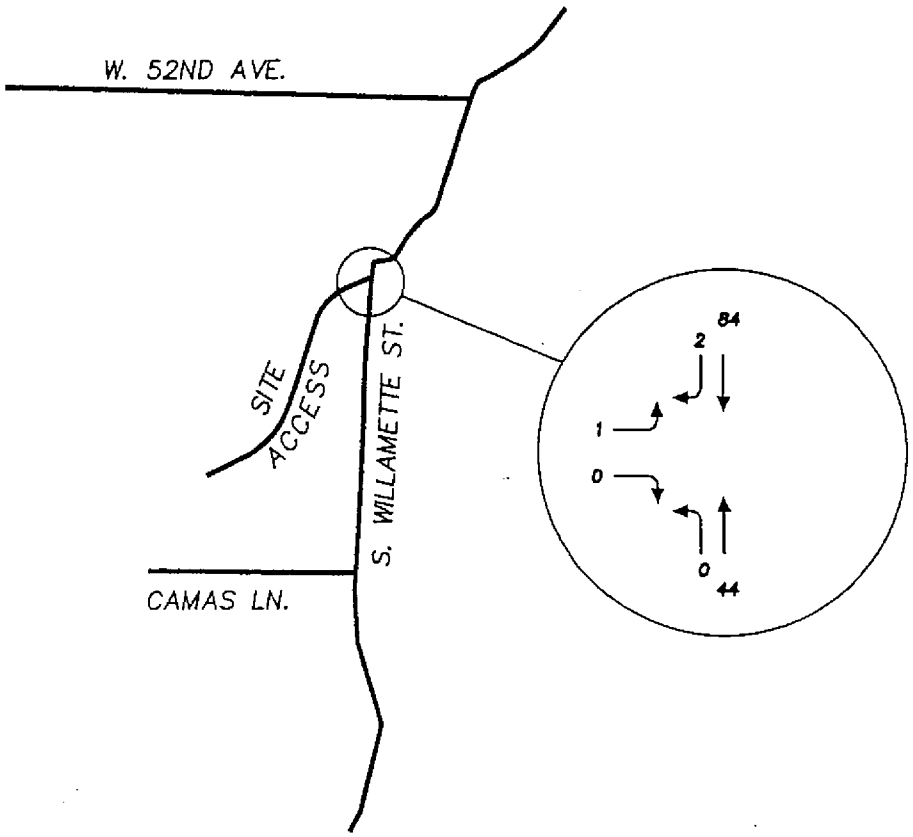
Rural two-lane highway LOS analysis was performed using methodology in the TSP. Specifically, Appendix D of the TSP identifies the maximum ADT allowable to maintain acceptable level of service on a roadway with the characteristics of South Willamette Street in the project vicinity as 9,705. The 2004 ADT was factored up by a two percent per year growth rate, resulting in a projected 2024 ADT of 2675 vehicles per day. Based on this volume, the future LOS under the worst case development scenario is LOS 'B'.

Conclusion

As indicated above, all movements at the studied transportation facilities were calculated to have an acceptable v/c ratio (0.70 or better) and an acceptable level of service (LOS 'D' or better), under the proposed use, through a 20 year planning horizon.

The proposed plan amendment and zone change for the subject property will not have "significant impact" to a transportation facility, as defined in OAR 660-12-060(2)(d). Therefore, OAR 660-012-0060(1)(a) has been satisfied by the results of this analysis.

2004 EXISTING TRAFFIC VOLUMES
(PM PEAK HOUR)



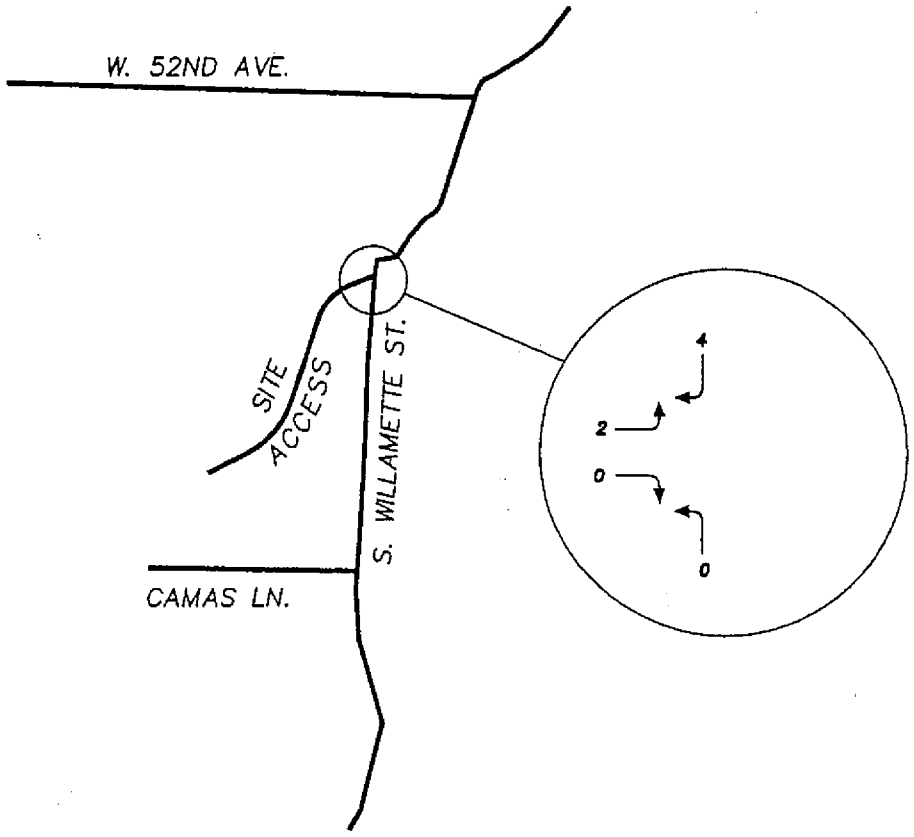


N.T.S.

FIGURE 2

Branch Engineering, Inc.

PIPELINE PROJECT GENERATED TRAFFIC VOLUMES
(PM PEAK HOUR)



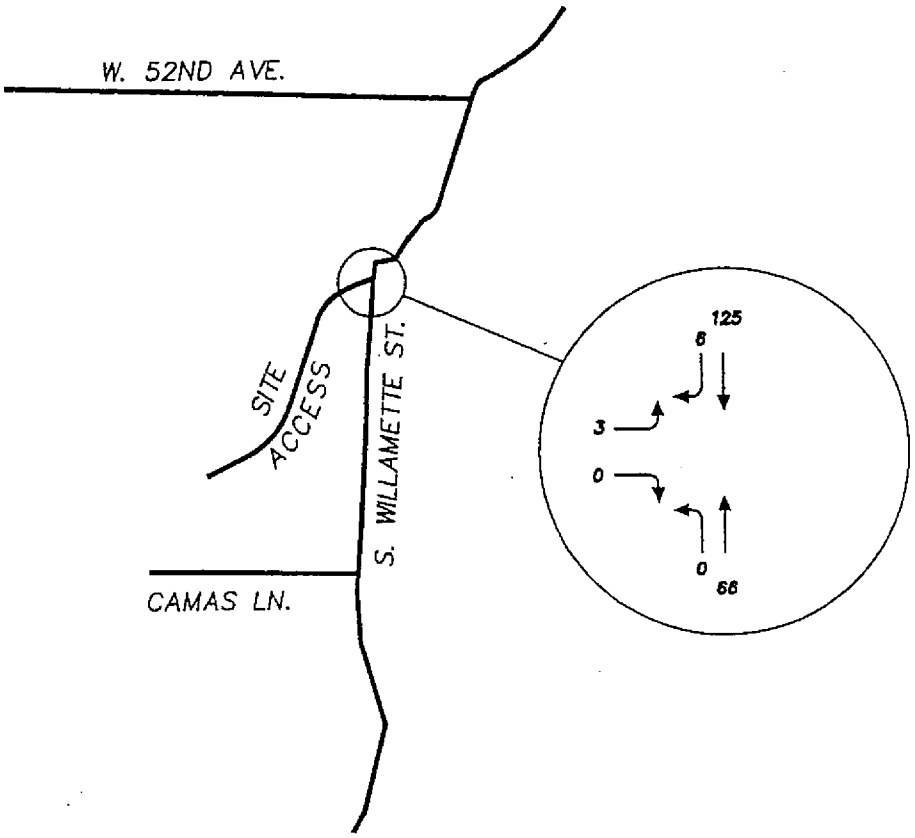


N.T.S.

FIGURE 3

Branch Engineering, Inc.

2024 'NO BUILD' TRAFFIC VOLUMES - WITH PIPELINE PROJECT
(PM PEAK HOUR)



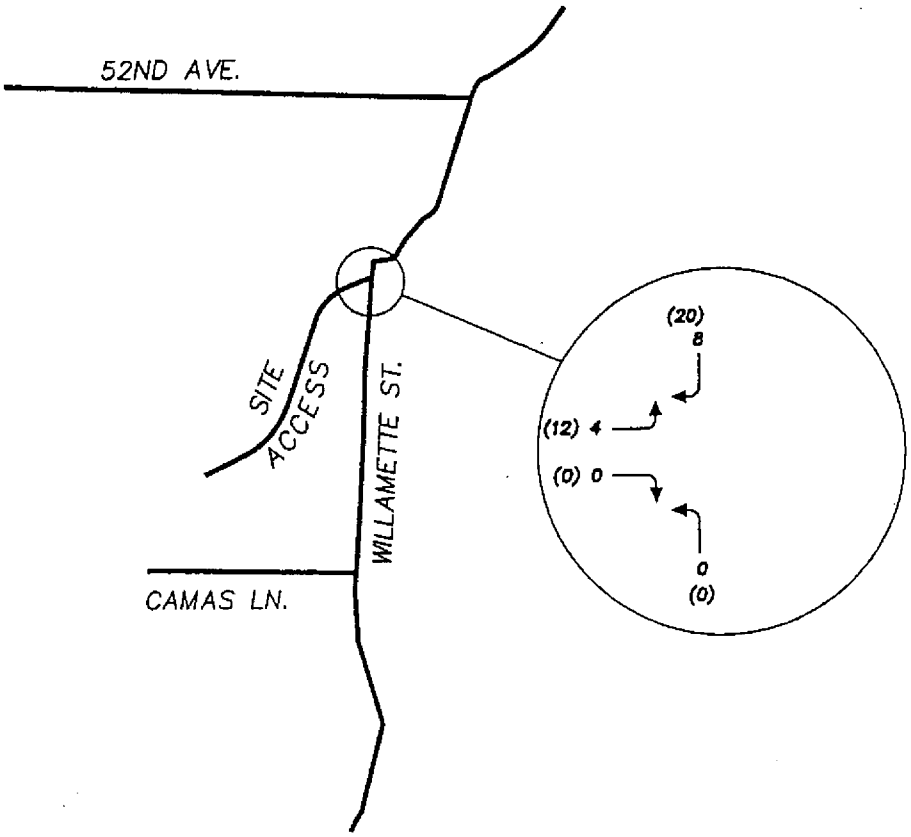


N.T.S.

FIGURE 4

Branch Engineering, Inc.

ASSIGNMENT OF SITE GENERATED TRAFFIC
(PM PEAK HOUR)





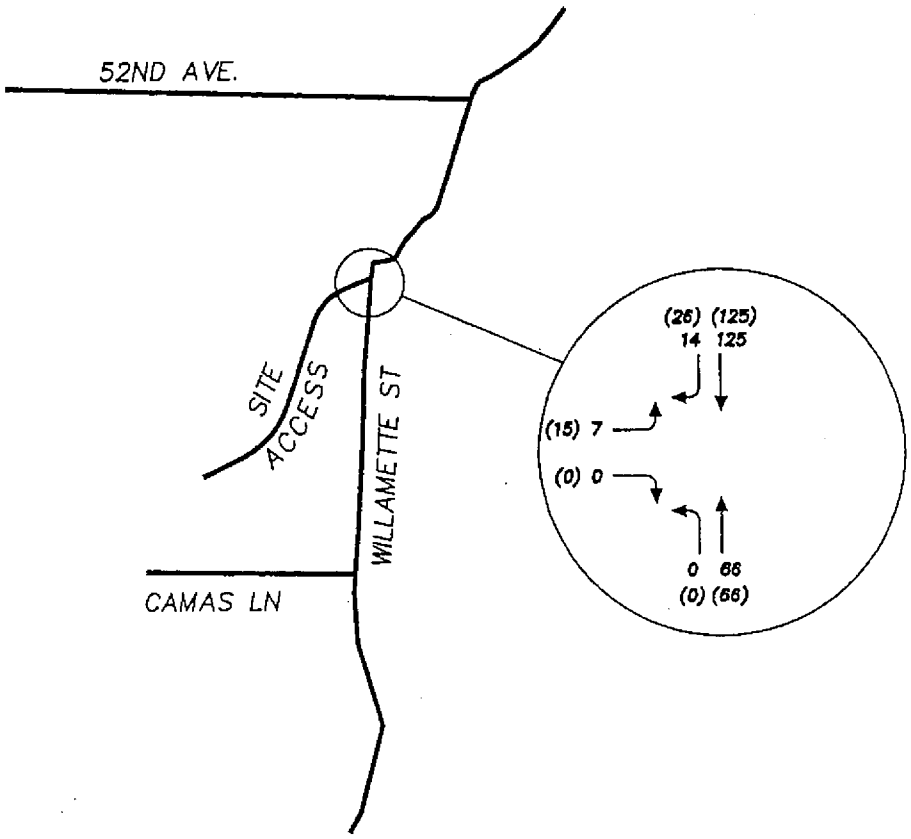
N.T.S.

LEGEND

XX	SCENARIO 'A' SITE GENERATED TRAFFIC
(XX)	SCENARIO 'B' SITE GENERATED TRAFFIC

FIGURE 5

2024 'BUILD' TRAFFIC VOLUMES – WITH PIPELINE PROJECT
(PM PEAK HOUR)





N.T.S.

LEGEND

XX SCENARIO 'A' CONDITIONS
(XX) SCENARIO 'B' CONDITIONS

FIGURE 6

Branch Engineering, Inc.

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Damien Gilbert, P.E.*	Intersection	*S. Willamette / Site Access*
Agency/Co.	*Branch Engineering, Inc.*	Jurisdiction	*Lane County*
Date Performed	*8/4/2004*	Analysis Year	*2024 Build - Scenario 'A'*
Analysis Time Period	*PM Peak Hour*		
Project Description	*04-173 Dahlen Zone Change and Comp. Plan Amendment*		
East/West Street:	*Site Access*	North/South Street:	*South Willamette Street*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*66*	*4*	*11*	*125*	*14*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*73*	*0*	*0*	*138*	*15*
Percent Heavy Vehicles	*0*	–	–	*5*	–	–
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*					*TR*
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*0*	*7*	*0*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*0*	*0*	*7*	*0*	*0*
Percent Heavy Vehicles	*5*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration					*LR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*						*LR*	
v (vph)	*0*						*7*	
C (m) (vph)	*1440*						*774*	
v/c	*0.00*						*0.01*	
95% queue length	*0.00*						*0.03*	
Control Delay	*7.5*						*9.7*	
LOS	*A*						*A*	
Approach Delay	–	–					*9.7*	
Approach LOS	–	–					*A*	

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Version 4.1d

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Damien Gilbert, P.E.*	Intersection	*S. Willamette / Site Access*
Agency/Co.	*Branch Engineering, Inc.*	Jurisdiction	*Lane County*
Date Performed	*8/4/2004*	Analysis Year	*2024 Build - Scenario 'B'*
Analysis Time Period	*PM Peak Hour*		

Project Description *04-173 Dahlen Zone Change and Comp. Plan Amendment*

East/West Street: *Site Access* | North/South Street: *South Willamette Street*

Intersection Orientation: *North-South* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*66*	*4*	*11*	*125*	*26*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*73*	*0*	*0*	*138*	*28*
Percent Heavy Vehicles	*0*	–	–	*5*	–	–
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*					*TR*
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*0*	*15*	*0*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*0*	*0*	*16*	*0*	*0*
Percent Heavy Vehicles	*5*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration					*LR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*						*LR*	
v (vph)	*0*						*16*	
C (m) (vph)	*1424*						*768*	
v/c	*0.00*						*0.02*	
95% queue length	*0.00*						*0.06*	
Control Delay	*7.5*						*9.8*	
LOS	*A*						*A*	
Approach Delay	–	–					*9.8*	
Approach LOS	–	–					*A*	

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EXHIBIT D

March 1997

Supplement to Marginal Lands Information Sheet

BOARD OF COUNTY COMMISSIONERS DIRECTION REGARDING THE INTERPRETATION AND ADMINISTRATION OF MARGINAL LANDS APPLICATIONS

On February 26, 1997, the Lane County Board of Commissioners reviewed the state Marginal Lands law and developed responses to seven issues in the law needing clarification for purposes of administration by Lane County. Those issues are identified below, followed by the direction provided by the Board. Any application for the Marginal Land designation within the Lane County Rural Comprehensive Plan's jurisdiction must be in compliance with the Board's directions. Refer to the Marginal Lands Information Sheet, or to Oregon Revised Statutes 197.247 (1991 laws), for an explanation of the law itself.

ISSUE 1: What is the Marginal Lands concept?

Board's Direction:
The Board recognized that marginal land is intended to be a sub-set of resource land, *i.e.*, there are "prime" resource lands and "marginal" resource lands. The marginal lands are to be available for occupancy and use as smaller tracts than are required in the better resource lands. The criteria in the law define which lands may be designated as marginal. Evidence for this position is found in the legislative history and the fact that marginal lands are recognized in both Statewide Goal 3 - Agricultural Lands and Goal 4 - Forest Lands.

ISSUE 2: Definition of "Management".

When considering forest land, the entire growth cycle must be considered for evidence of management. This is because even the best managed forest operations may have nothing occurring on the land during the five-year window (1978 - 1982) stated in the marginal lands statute (ORS 197.247(1)(a)(1991 Edition). For farm operations, however, it is hard to conceive of an operating farm on which nothing occurred for five years.

Board's Direction :
No evidence of human activity on the land is required for forest land to be "managed". The conscious decision not to convert the land to another use is enough evidence of management to meet the statutory intent, provided there is a significant amount of merchantable or potentially merchantable trees on the property. Likewise, evidence of timber harvest since 1978 would suffice to show management even if there were no trees currently on the property. For farm land, no evidence of farm use during the 5-year statutory window would indicate that land was not managed for farm use.

ISSUE 3. Managed "as part of" a (farm or forest) operation during (1978-1982).

Does this phrase in ORS 197.247(1)(a)(1991) mean, for example, that if a large timber company owned and managed a 2000 acre tract during the five-year window, and then sold someone a 40 acre portion of non-forest land in 1985, that 40 acres would not be eligible for Marginal Lands designation?

Board's Direction :
The Board found that the law creates a general presumption that all contiguous land owned during 1978-82 was part of the owner's "operation". That presumption could be rebutted, however, by substantial evidence

that the parcel in question was not, in fact, a "contributing part" of the operation. The applicant would bear the burden of producing such evidence.

ISSUE 4: What price data should be used to calculate gross annual income for forest lands?

Board's Direction :
The legislative intent of the "management and income test" of the Marginal Lands Law was to identify those lands which were not, at the time the Marginal Lands law was enacted (1983), making a "significant contribution" to commercial forestry. Therefore, it is appropriate and statistically valid to use the following methodology:

1. Based on the best information available regarding soils, topography, etc., determine the optimal level of timber production for the tract assuming reasonable management.
2. Assume that the stand was, in 1983, fully mature and ready for harvest.
3. Using the volumes calculated in step (1), and 1983 prices, calculate the average gross annual income over the growth cycle.

ISSUE 5: What "growth cycle" should be used to calculate gross annual income?

Board's Direction :
The consensus of the Board was that a 50-year growth cycle should be adopted as the usual standard, with the option that another standard could be used if substantiated by compelling scientific evidence presented by the applicant. The Board's choice was based on evidence that the USDA Natural Resource Conservation Service has adopted the 50-year cycle for rating soil productivity, plus the administrative ease of having a standardized figure.

ISSUE 6: Weight of evidence.

One of the main holdings of the Ericsson case, which arose in Lane County, is that on-site evaluation by a qualified expert is weightier evidence than published data. Given this ruling, what is the appropriate role of the parcelization table in Lane Code 16.211(10)(b) and the legislative findings for Goal 4 of the Rural Comprehensive Plan as an income standard?

Board's Direction :
As a matter of administrative ease, and in the absence of other substantial evidence, the parcelization test could still be used. It is one method of identifying the acreage required of a given forest capability classification to achieve the $10,000 income standard.

ISSUE 7: Ambiguities in the parcelization tests of ORS 197.247(1)(b)(A) & (B).

Is the parcelization test measuring the percent of an area (acreage) or the percent of the number of parcels a "parcel count"? If the test in ORS 197.247(1)(b)(A) is an area test, does the percentage requirement apply to the acreage or to the number of parcels that lie wholly or partly within the 1/4 mile of the subject tract?

Board's Direction :
Regard the tests in ORS 197.247(1)(b)(A) & (B) as "area" tests with the difference being that (A) specifies an area including the subject parcel and land within 1/4 mile and uses a 50% small lot test, whereas (B) increases the area to a minimum of 240 acres but raises the small lot test to 60%.

(Note: This is the position adopted by Lane County in the Jackson case. In that case, Lane County ruled that the area was limited to the 1/4-mile line, whereas DLCD argued that the area line should expand to include the entirety of any parcel partly located within the 1/4 mile boundary. DLCD threatened to appeal the Jackson case on that basis, but did not do so.)

EGR & Associates, Inc.

2535B Prairie Road
Eugene, Oregon 97402
(541) 688-8322
Fax (541) 688-8087

July 27, 2004

Mr. Steve Cornacchia
Herschner, Hunter, LLP
180 E. 11th Ave.
Eugene, OR 97401

RE: Dahlen Aquifer Analysis.

Dear Mr. Cornaccia,

EGR & Associates Inc. (EGR) completed an aquifer analysis for the Dahlen property, located at 85804 South Willamette in Eugene, Oregon, on April 18, 2003. The analysis (provided as Attachment 1) was for 67 acres of the 367-acre Dahlen property, but could be generally applied to the remaining 300 acres. The aquifer analysis was based on the results of an aquifer test performed on the Bowers property and well logs in the area. The Bowers property is located adjacent to the Dahlen site at 31479 Camus Lane, in Eugene, Oregon. The purpose of the analysis was to determine if there was enough water available, to subdivide the 67 acre property into five 10 to 14 acres parcels, without depleting the aquifer and causing adverse affects to neighboring wells. Based on the results of the Bowers Aquifer Test and the well logs in the vicinity to the site, the analysis determined that there was sufficient water available for the proposed development.

The remaining 300 acres is planned to be developed into ten 20 acre lots and two 20+ acre lots, a total of 12 parcels. The results of the Dahlen analysis, referenced above, can be extrapolated to include the remaining 300 acres due to the site's similar location, large lot sizes and the similar geological characteristics of the area. Although recharge calculations done for the property show that groundwater in the area is not abundant, it is sufficient enough to supply water for domestic use without any adverse affects to neighboring wells. This is particularly true when the lots are all 20 acres or larger.

Potential damage could occur from overexertion of wells in the area. Several wells have been replaced in this area which indicate they were clogged from chemical precipitation (including the original Bowers well). A letter discussing this concern is attached as Attachment 2. Pumps and storage tanks should be installed that only pump a portion of the well's potential yield to reduce metal oxide precipitation. Metals precipitation (iron) can begin to seal cracks that supply water to the well and reduce the total yield. Reduced pumping increases longevity and maintains the total yield of the system as long as possible.

If you have any questions in this regard, please call me at (541) 688-8322.

Respectfully,
EGR & Associates, Inc.

Ralph Christensen R.P.G
President

ATTACHMENT 1

DAHLEN AQUIFER ANALYSIS

April 18, 2003

Karen Dahlen
P.O. Box 5687
Eugene, OR 97405

RE: Aquifer Analysis.

Dear Ms. Dahlen,

EGR and Associates Inc. (EGR) has completed an aquifer analysis for the Dahlen property, located at 85804 South Willamette in Eugene, Oregon (Figure 1). The results of the analysis are detailed below.

Purpose

EGR has prepared an aquifer evaluation for the subject site, located at 85804 South Willamette in Eugene, Oregon in Township 18 South, Range 3 West, Section 19, Tax Lot 1300 and Township 18 South, Range 4 West, Section 24, Tax Lot 300 (Figures 2 and 3). This report is specifically associated with 67 acres of the 367 acre Dahlen property, but also generally applies to the remainder of the Dahlen property as well. The 67 acres is proposed to be subdivided into five 10 to 14 acre parcels. A rezoning application has been filed on the 300 remaining acres to change the zoning from agriculture to marginal lands. The 300 acres is planned to be subdivided into 10 to 20 acre parcels under Marginal Lands Zoning. The purpose of the aquifer analysis is to investigate whether the use of the aquifer, associated with the proposed partitioning of the Dahlen property, would adversely impact the neighboring wells or properties, or deplete the aquifer.

This report is based on the results of an aquifer test performed on an adjacent property located immediately south of the Dahlen property (Chester Bowers, 1985). The Bowers property is located at 31479 Camus Lane in Eugene, Oregon and abuts the southeast corner of the Dahlen property. We have reviewed the results of the Bowers aquifer test for relevance to the Dahlen property as well as well logs from the areas surrounding and including the Dahlen property.

Geology and Hydrology in the Site Vicinity

The geology of the area consists volcanic rocks of the western Cascade Range (Miocene and Oligocene) comprised of lava flows, tuff, breccia, pyroclastic material and volcaniclastic sediments of variable composition[1]. Water well reports on file with the Water Resources Department in Salem, Oregon, were reviewed to ascertain the geology

[1] Generalized Geologic Map of the Willamette Lowland by M.W. Gannet and R.R. Caldwell, 1998

and hydrology of the immediate area. Twenty well logs within Section 19 of Township 18 South, Range 3 West and Section 24 of Township 18 South, Range 4 West were reviewed. These well logs are located in the Sections which contain the subject site. The Well Logs generally describe the geology as up to 560 feet of sedimentary and volcanic rocks. The well logs are located in Appendix A.

In general, the well logs indicate that the local water bearing zone encountered by these wells is confined. A confined aquifer is defined as a water bearing zone isolated from the atmosphere by impermeable confining geologic formations, and which is generally subject to pressures higher than atmospheric (water rises in the well above the point where it is initially encountered during drilling)[1]. The depth to water recorded in the well logs (depth at which water was first encountered) ranges from 55 to 250 feet below the surface. The average depth is 159 feet. The static groundwater level (the depth at which water rises under atmospheric conditions) ranges from 11 to 78 feet below the surface. The average static groundwater level is at 42 feet. Yields reported range from 0.5 gallon per minute (gpm) to 30 gpm with an average yield of 6 gpm. The statistics are included in Appendix B.

The statistical analysis was also expanded to encompass all water well logs located within at least ½ mile of the site. 208 well logs within Sections 17, 18, 19, 20, 29, 30 of Township 18 South, Range 3 West and Sections 13, 14, 23, 24, 25, 26 of Township 18 South, Range 4 West were reviewed. The depth to water recorded in the well logs (depth at which water was first encountered) ranges from 5 to 566 feet below the surface. The average depth to water is 140 feet below the surface. The static groundwater water level (the depth at which water rises under atmospheric conditions) ranged from 3 to 320 feet below the surface. The average static groundwater level is 72 feet below the ground surface. Yields reported range from 0.1 gallon per minute (gpm) to 300 gpm. The average yield is 15 gpm. The statistics are included in Appendix B.

Changes to the water table occur seasonally from changes in precipitation, irrigation and other factors.

Geology and Hydrology of Dahlen and Bower Properties

Three well logs for the Dahlen property and one well log for the Bower property were reviewed to determine if the characteristics of the underlying aquifer were similar at their respective locations. The three well logs for the Dahlen property (Appendix C) describe the geology underlying the site as 7-10 feet of sandstone overlying basalt to as much as 440 feet below the ground surface. The well log for the Bower property (Appendix D) identifies the underlying geology as a gray brown conglomerate from 4 to 347 feet below the surface. We interpret that this unit is very likely the basalt, as described in the Dahlen well logs.

Groundwater in the three Dahlen wells was first encountered at 240, 250 and 205 feet below the surface and in the Bower well at 207 feet below the surface. Static water was

[1] *Driscoll, F.G., (1986) Groundwater and Wells, U.S. Filter/Johnson Screens. St. Paul MN. pp.62.*

recorded in the three Dahlen wells at 62, 35 and 78 feet below the ground surface and in the Bower well at 125 feet below the surface. The reported yield from the Dahlen wells are 2 gpm, 2 gpm, and 30 gpm. The reported yield from the Bower well log is 12.5 gpm.

Bower Aquifer Test

The aquifer test on the Bowers property was performed on August 28, 1985. Initial static water level (SWL) in the pumping well was 61.2 feet below the surface. The well was pumped at 5 gpm for approximately 9 hours and the well was allowed to recover for 11 hours following the test. The total drawdown in the well was calculated as 23.2 feet and water levels recovered to within 11.1 feet of the original static water level over the 11 hour recovery period. An observation well, located approximately 200 feet from the pumping well was not affected by the test. The original Bower Aquifer Test is located in Appendix E.

Aquifer Analysis

The pump test and data interpretations were used to estimate the hydraulic conductivity (K) and transmissivity (T), and storage coefficient (S) of the confined aquifer underlying the property. Transmissivity (T) is the rate at which water is transmitted through a 1-foot-wide vertical section of the entire thickness of the aquifer under a unit hydraulic gradient. More intuitively, T is a measure of how easily water moves through a formation of a given thickness. The units of T used in this report are gallons per day per foot (gpd/ft). Hydraulic Conductivity (K) is a measure of the rate at which water can be transmitted through a unit area under a unit hydraulic gradient. It is directly proportional to T (K = T / formation thickness). The units of K used in this report are gallons per day per square foot (gpd/ft^2). In confined aquifers the storage coefficient (S) represents the volume of water that an aquifer releases from storage per unit area per unit decline in hydraulic head

The results of the Bower aquifer test indicated a transmissivity between 55 and 69 gpd/ft. Using the more conservative transmissivity of 55 gpd/ft, the hydraulic conductivity was calculated as 0.55 gpd/ft^2. A storage coefficient could not be calculated since the observation well was not affected by the test.

Conclusion

The subject site's hydrogeology would not be expected to differ significantly from the hydrogeology at the Bower's well location. The main aquifer underlying the adjacent properties consists of basalt located at approximately 205 to 250 feet below the ground surface. Variation in topography will make some depth correlation's more complex. A conservative (high) estimate of the water needed to supply a single-family dwelling averages 500 gpd (0.35 gpm) on an annual basis. (Eugene Water and Electric Board figures indicate approximately 300 gpd, including irrigation). Peak use, during the irrigation months of July and August, is expected to be three times average use. For maximum drawdown in the aquifer, the typical use is assumed to be 1 gpm (more than three times the EWEB average). The Bower aquifer test was conducted at 5 gpm, a value well above this minimum rate. The reported yield from well logs of wells completed within ½ mile of the site average 15 gpm.

The results of the aquifer test on the Bower site and the well logs from this area indicate that there is sufficient water available from the aquifer for all the proposed parcels. This applies to both the 67 and 300 acre parcel (at the described density of 10 acres or greater per dwelling), for domestic use, without adverse affects to neighboring wells. The subject site should not differ significantly from the Bower aquifer test and wells within the subject property's vicinity.

EGR

Ralph Christensen R.G.
Senior Geologist



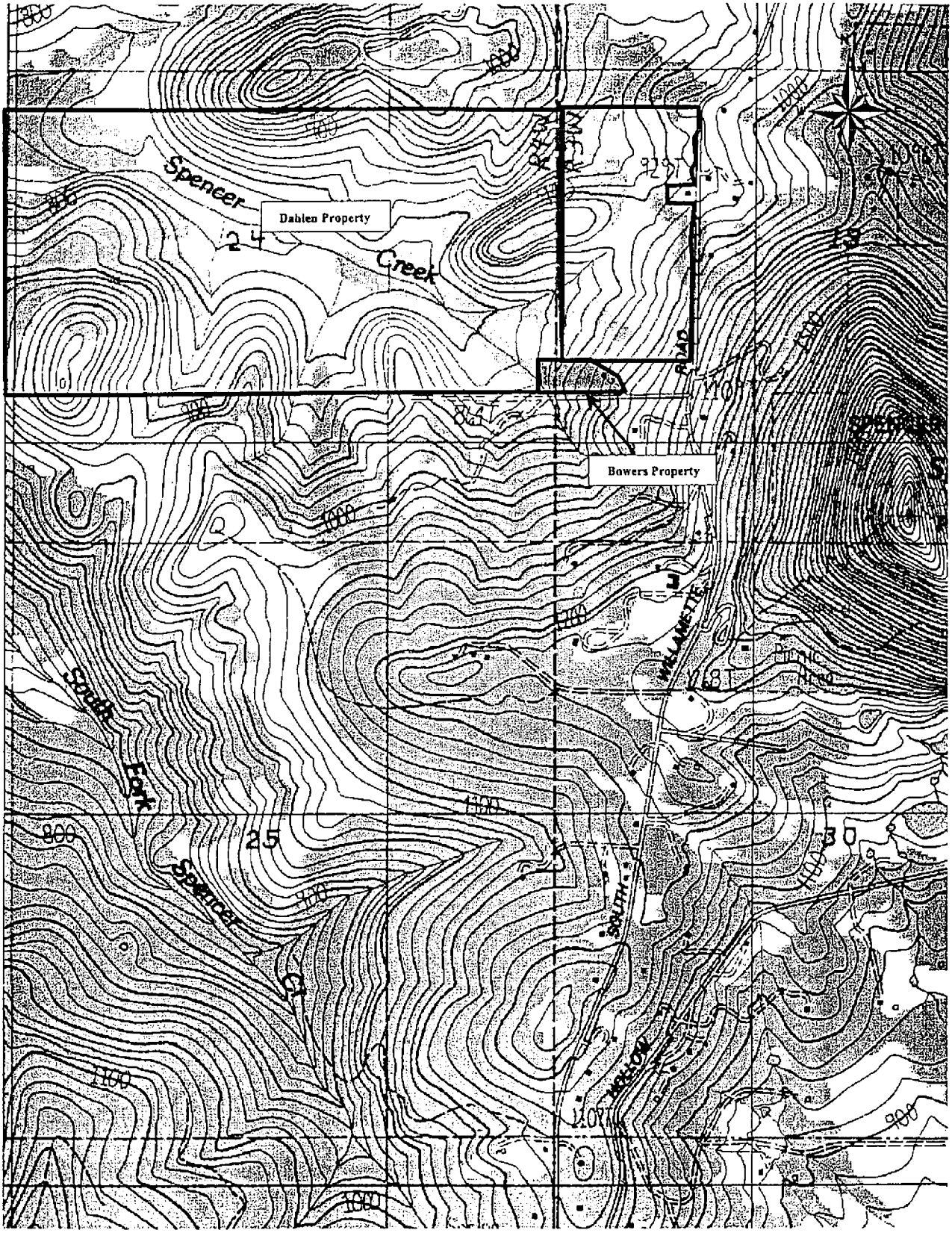


Figure 1:
Location Map

EGR & Associates, Inc.
Engineers, Geologists and Surveyors
2535 B Prairie Road
Phone (541) 688-8322
FAX (541) 688-8087

Dahlen Property
Aquifer Analysis

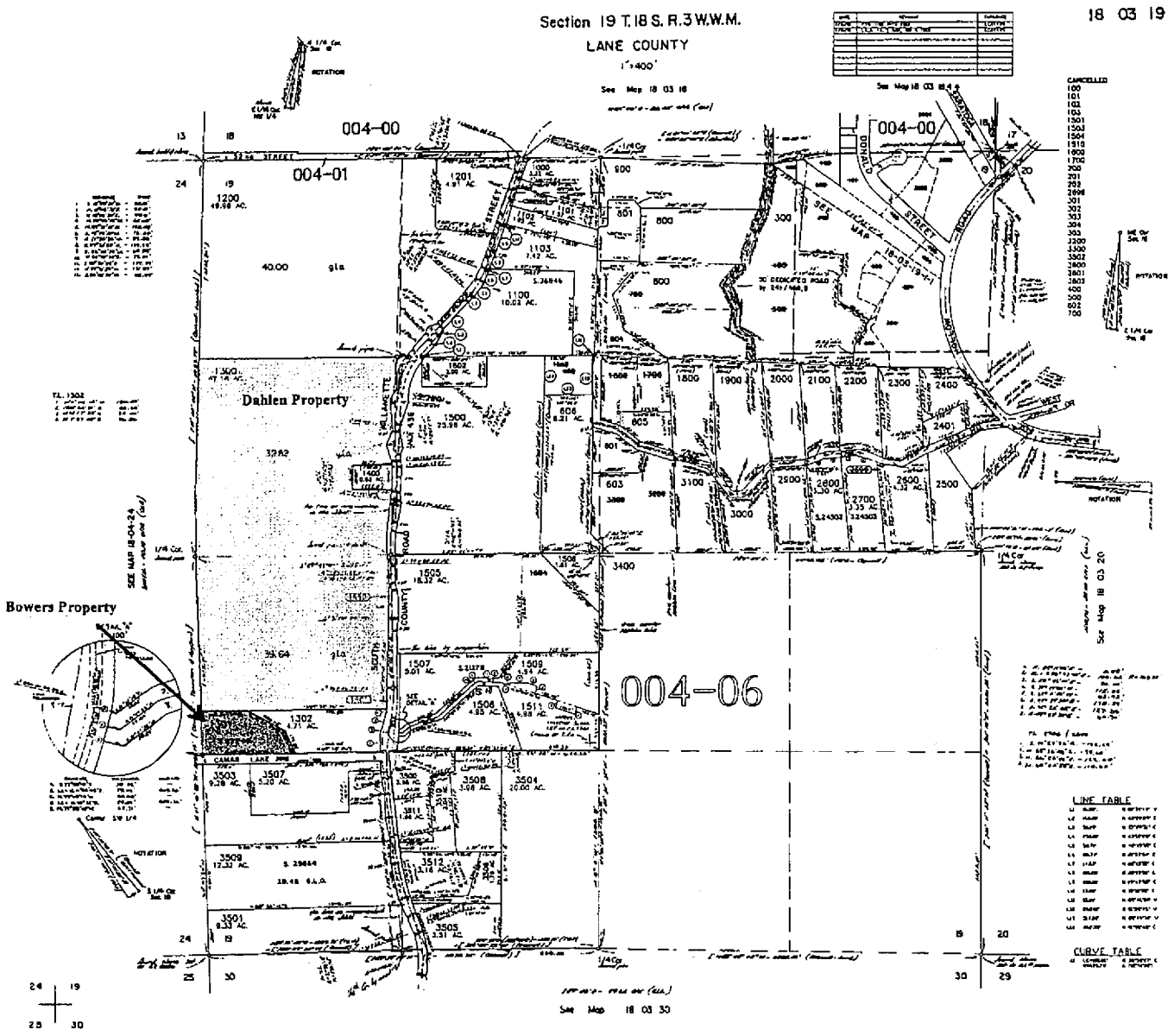


Figure 2:
Tax Lot Map
Section 19, T18S, R3W

EGR & Associates, Inc.
Engineers, Geologists and Surveyors
2535 B Prairie Road
Phone (541) 688-8322
FAX (541) 688-8087

Dahlen Property
Aquifer Analysis

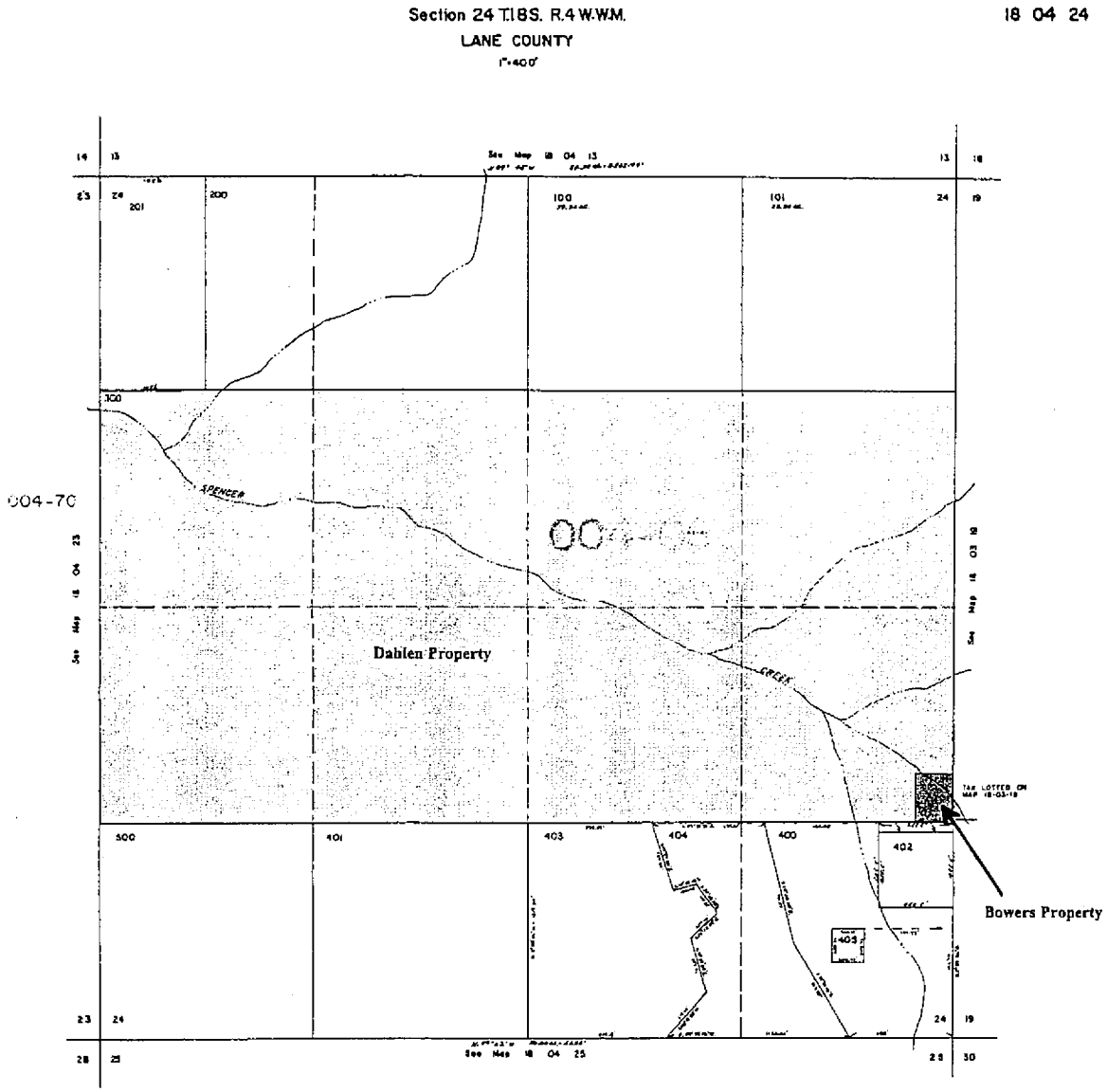


Figure 3:
Tax Lot Map
Section 24, T18S, R4W

EGR & Associates, Inc.
Engineers, Geologists and Surveyors
2535 B Prairie Road
Phone (541) 688-8322
FAX (541) 688-8087

Dahlen Property
Aquifer Analysis

APPENDIX A

WELL LOGS

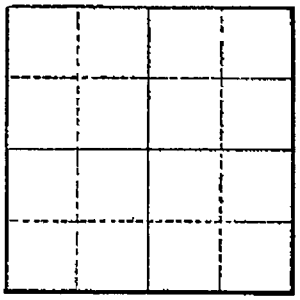
STATE ENGINEER
Salem, Oregon

Well Record

LANE STATE WELL NO. 17/3W-19N
1123 COUNTY Lane
~~APPLICATION NO.~~ GR-3490

OWNER: Kenneth A. Danstrom
MAILING ADDRESS: 205 Lower Goodpasture Road
CITY AND STATE: Eugene, Oregon

LOCATION OF WELL: Owner's No. _____
SW ¼ SW ¼ Sec. 19 T. 17 ~~N~~ S., R. 3 ~~E~~ W., W.M.
Bearing and distance from section or subdivision corner N. 2°30' E. 1438' from W.S.W. Corner from Jacob Gillespie DLC #70



Altitude at well _____
Section _____

TYPE OF WELL: dug Date Constructed 1938
Depth drilled 14' Depth cased -14

CASING RECORD:
6"
30"

FINISH:
no perforations open bottom

AQUIFERS:

WATER LEVEL:
10'

PUMPING EQUIPMENT: Type Fairbanks Morse H.P. 5
Capacity 150 G.P.M.

WELL TESTS:
Drawdown _____ ft. after _____ hours _____ G.P.M.
Drawdown _____ ft. after _____ hours _____ G.P.M.

USE OF WATER Irrigation Temp. _____ °F. _____, 19__
SOURCE OF INFORMATION GR-3221
DRILLER or DIGGER Cecil Buckingham Newport, Oregon
ADDITIONAL DATA:
Log _____ Water Level Measurements _____ Chemical Analysis _____ Aquifer Test _____

REMARKS:

State Printing 8M18

STATE OF OREGON
WATER WELL REPORT
(as required by ORS 537.765)

Lane 1333

DEC 08 1989
WATER RESOURCES DEPT.
SALEM, OREGON

18S/3W/19

(START CARD) # 8256

(1) OWNER:
Name LUISE E WALKER
Address 85861 S WILLAMETTE
City EUGENE State OR Zip 97405

(2) TYPE OF WORK:
☒ New Well ☐ Deepen ☐ Recondition ☐ Abandon

(3) DRILL METHOD
☒ Rotary Air ☐ Rotary Mud ☐ Cable
☐ Other

(4) PROPOSED USE:
☒ Domestic ☐ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other

(5) BORE HOLE CONSTRUCTION:
Special Construction approval Yes ☐ No ☒ Depth of Completed Well 341 ft.
Explosives used Yes ☐ No ☒ Type Amount

HOLE Diameter	From	To	SEAL Material	From	To	Amount sacks or pounds
10"	0	19	CEMENT GROUT	0	19	4
6	19	450				

How was seal placed: Method ☐ A ☐ B ☒ C ☐ D ☐ E
☐ Other
Backfill placed from ft. to ft. Material
Gravel placed from ft. to ft. Size of gravel

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	6 10	+1	19'	1/4"	☒	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:	NONE				☐	☐	☐	☐
					☐	☐	☐	☐

Final location of shoe(s) NONE

(7) PERFORATIONS/SCREENS: NONE
☐ Perforations Method
☐ Screens Type Material

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
						☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour
☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
1/2	310	340	1 hr.
WELL	DUT. PUT	MAY FLUCTUATE	

Temperature of water 52°F Depth Artesian Flow Found
Was a water analysis done? ☐ Yes By whom
Did any strata contain water not suitable for intended use? ☐ Too little
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other
Depth of strata:

(9) LOCATION OF WELL by legal description:
County LANE Latitude ' Longitude '
Township 18 S N or S, Range 3W E or W, WM.
Section 19 ¼ ¼
Tax Lot 1502 Lot Block Subdivision
Street Address of Well (or nearest address) 85861 S WILLAMETTE
EUGENE OR 97405

(10) STATIC WATER LEVEL:
28 ft. below land surface. Date 11-15-89
Artesian pressure lb. per square inch. Date

(11) WATER BEARING ZONES:
Depth at which water was first found 175

From	To	Estimated Flow Rate	SWL
175	200	1/2	28

(12) WELL LOG: Ground elevation

Material	From	To	SWL
TOP SOIL	0	3	
WEATHERED BLUE TUFF	3	8	
HARD BLUE GRAY TUFF	8	310	28
HARD GRAY TUFF SEAMS	310	342	28
DICEY UNSTABLE BLUE GRAY TUFF THIS DICEY MATERIAL CLOGGED HOLE OVERNIGHT	342	450	
RAN CALIPER LOG - NOTICE INCREASE IN BORE HOLE DIAMETER ABOVE 342'			
HAD PLANNED TO RUN 2ND LOG IN 10 DAYS FOR COMPARISON - PUMP SHORT CAVITIES PLAN - SET PUMP - FOUND BOTTOM AGAIN AT 342' SUGGESTED WE SET PUMP 320-310			
WELL MAY NEED TO BE LINED & PACKER SET BELOW SOIL PROFILE AT 175 - 180'			

Date started 11-6-89 Completed 11-15-89

(unbonded) Water Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.
WWC Number
Signed Date

(bonded) Water Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. all work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief. WWC Number 97
Signed Date 11-30-89

ORIGINAL & FIRST COPY - WATER RESOURCES DEPARTMENT SECOND COPY - CONSTRUCTOR THIRD COPY - CUSTOMER 9309C 3/85

LANE 1333.tif printed by Graphic Workshop

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the
STATE ENGINEER, SALEM, OREGON 97310
within 30 days from the date of well completion.

WATER WELL REPORT
STATE OF OREGON
(Please type or print)
(Do not write above this line)

RECEIVED
JUN 20 1974
STATE ENGINEER

State Well No. 18S/3W-19
State Permit No.

(1) OWNER:
Name R. L. Shoemaker
Address 535 Kingswood Eugene, Oregon 97405

(2) TYPE OF WORK (check):
New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary ☒ Driven ☐
Cable ☐ Jetted ☐
Dug ☐ Bored ☐

(4) PROPOSED USE (check):
Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

CASING INSTALLED:
Threaded ☐ Welded ☒
6" Diam. from 0 ft. to 27 ft. Gage .250
" Diam. from ft. to ft. Gage
" Diam. from ft. to ft. Gage

PERFORATIONS:
Perforated? ☐ Yes ☒ No
Type of perforator used
Size of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS:
Well screen installed? ☐ Yes ☒ No
Manufacturer's Name
Type Model No.
Diam. Slot size Set from ft. to ft.
Diam. Slot size Set from ft. to ft.

(8) WELL TESTS:
Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☒ No If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
" " "
Tested by Air, Estimate could Fluctuate
~~Bailer test~~ 7 gal./min. with 162 ft. drawdown after 1 hrs.
Artesian flow g.p.m.
Temperature of water Depth artesian flow encountered ft.

(9) CONSTRUCTION:
Well seal—Material used Cement
Well sealed from land surface to 26 ft.
Diameter of well bore to bottom of seal 10 in.
Diameter of well bore below seal 6 in.
Number of sacks of cement used in well seal 6 sacks
Number of sacks of bentonite used in well seal sacks
Brand name of bentonite
Number of pounds of bentonite per 100 gallons of water lbs./100 gals.
Was a drive shoe used? ☒ Yes ☐ No Plugs Size: location ft.
Did any strata contain unusable water? ☐ Yes ☒ No
Type of water? depth of strata
Method of sealing strata off
Was well gravel packed? ☐ Yes ☒ No Size of gravel:
Gravel placed from ft. to ft.

(10) LOCATION OF WELL:
County Lane Driller's well number
¼ ¼ Section 19 T. 18S R. 3W W.M.
Bearing and distance from section or subdivision corner

(11) WATER LEVEL: Completed well.
Depth at which water was first found 296 ft.
Static level 183 ft. below land surface. Date 6/12/74
Artesian pressure lbs. per square inch. Date

(12) WELL LOG:
Diameter of well below casing 6"
Depth drilled 345 ft. Depth of completed well 345 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
Black Clay	0	4	
Gray Clay	4	9	
Brown Sandy Clay	9	13	
Brown Sand Stone	13	20	
Blue Sand Stone	20	52	
Black Basalt	52	73	
Red Cinders	73	93	
Blue Cinders	93	132	
Black Basalt	132	178	
Red Cinders	178	203	
Black Basalt	203	228	
Red Cinders	228	241	
Black Basalt	241	288	
Redish Brown Cinders	288	345	

Work started 6/11/74 19 Completed 6/12/74 19
Date well drilling machine moved off of well 6/12/74 19

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] Casey L Jones (Drilling Machine Operator) Date 6/12/74, 19
Drilling Machine Operator's License No. 521

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name Casey Jones Well Drilling Co. (Person, firm or corporation) (Type or print)
Address Rt 8 Box 695, Pleasant Hill, Oregon
[Signed] Casey L Jones (Water Well Contractor)
Contractor's License No. 559 Date 6/13/74, 19

(USE ADDITIONAL SHEETS IF NECESSARY)

SP-45664-119

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the
STATE ENGINEER, SALEM, OREGON 97310 within 30 days from the date of well completion.

1469 Lane

WATER WELL REPORT
STATE OF OREGON

(Please type or print)
(Do not write above this line)

RECEIVED
SEP 15 1976
WATER RESOURCES DEPT.
SALEM, OREGON

State Well No. 19S/4W 24
State Permit No.

(1) OWNER:
Name Ted Larson #3 (R.W.)
Address 2855 Alta Vista Court
Eugene, Oregon

(2) TYPE OF WORK (check):
New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary ☒ Driven ☐
Cable ☐ Jetted ☐
Dug ☐ Bored ☐

(4) PROPOSED USE (check):
Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

CASING INSTALLED: Threaded ☐ Welded ☒
6 " Diam. from 0 ft. to 20 ft. Gage .250
" Diam. from ft. to ft. Gage
" Diam. from ft. to ft. Gage

PERFORATIONS: Perforated? ☐ Yes ☒ No
Type of perforator used
Size of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS: Well screen installed? ☐ Yes ☒ No
Manufacturer's Name
Type Model No.
Diam. Slot size Set from ft. to ft.
Diam. Slot size Set from ft. to ft.

(8) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? ☒ Yes ☐ No If yes, by whom? Driller
Yield: 2 gal./min. with 432 ft. drawdown after 2 hrs.
" " " "
" " " "
Bailer test No gal./min. with ft. drawdown after hrs.
Artesian flow 0 g.p.m.
Temperature of water 53 Depth artesian flow encountered ft.

(9) CONSTRUCTION:
Well seal—Material used Portland Cement
Well sealed from land surface to 20 ft.
Diameter of well bore to bottom of seal 9 7/8 in.
Diameter of well bore below seal 6 in.
Number of sacks of cement used in well seal 5 sacks
Number of sacks of bentonite used in well seal -0- sacks
Brand name of bentonite
Number of pounds of bentonite per 100 gallons of water lbs./100 gals.
Was a drive shoe used? ☐ Yes ☒ No Plugs Size: location ft.
Did any strata contain unusable water? ☐ Yes ☒ No
Type of water? depth of strata
Method of sealing strata off
Was well gravel packed? ☐ Yes ☒ No Size of gravel:
Gravel placed from ft. to ft.

(10) LOCATION OF WELL:
County Lane Driller's well number
¼S.E. ¼ Section 24 T. 18-S R. 4-W W.M.
Bearing and distance from section or subdivision corner

(11) WATER LEVEL: Completed well.
Depth at which water was first found 130 ft.
Static level 12 ft. below land surface. Date 8-10-76
Artesian pressure lbs. per square inch. Date

(12) WELL LOG: Diameter of well below casing 6"
Depth drilled 446 ft. Depth of completed well 446 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. *Report each change in position of Static Water Level and indicate principal water-bearing strata.*

MATERIAL	From	To	SWL
Top soil	0	2	
Med. cobbles	2	6	
Hard grey rock	6	103	
Red lava rock	103	107	
Hard grey rock	107	159	12
Red lava rock	159	165	12
Hard grey rock	165	330	12
Soft brown shale	330	335	12
Blue shale	335	446	12

Work started 8-9 19 76 Completed 8-11 19 76
Date well drilling machine moved off of well 8-12 19 76

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] (Drilling Machine Operator) Date 8-18 19 76
Drilling Machine Operator's License No. 717

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name (Person, firm or corporation) (Type or print)
Address P. O. Box 96 Springfield, Oregon 97477
[Signed] (Water Well Contractor)
Contractor's License No. 126 Date 8-18 19 76

(USE ADDITIONAL SHEETS IF NECESSARY)

SP-45864-113

LANE 1469.tif printed by Graphic Workshop

RECEIVED
SEP 24 1993
WATER RESOURCES DEPT.
SALEM, OREGON

LANE 4167

18S/3W/19cc

STATE OF OREGON
WATER WELL REPORT
(as required by ORS 537.765)

(START CARD) # W57508

(1) OWNER: Well Number #2
Name Bob Bennett
Address 85334 So. Willamette St.
City Eugene State OR Zip 97405

(2) TYPE OF WORK:
☒ New Well ☐ Deepen ☐ Recondition ☐ Abandon

(3) DRILL METHOD:
☒ Rotary Air ☐ Rotary Mud ☐ Cable
☐ Other

(4) PROPOSED USE:
☒ Domestic ☐ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other

(5) BORE HOLE CONSTRUCTION:
Special Construction approval ☐ Yes ☒ No Depth of Completed Well 610 ft.
Explosives used ☐ Yes ☒ No Type Amount

HOLE Diameter	From	To	SEAL Material	From	To	Amount sacks or pounds
10"	0	18'	Cement	0	18'	8½ sacks
6"	18'	610'				

How was seal placed: Method ☐ A ☐ B ☒ C ☐ D ☐ E
☐ Other
Backfill placed from ft. to ft. Material
Gravel placed from ft. to ft. Size of gravel

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	6"	+1½'	38½'	.250	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:	4½"	0	610'	PVC	☐	☒	☐	☐
					☐	☐	☐	☐

Final location of shoe(s) 38½'

(7) PERFORATIONS/SCREENS:
☒ Perforations Method SAW
☐ Screens Type Material PVC

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
170'	190'	1/8x2	200	4½"		☐	☒
550'	610'	1/8x2	600	4½"		☐	☒
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour
☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
1 1/3"	565'	610'	1 hr.
	Could fluctuate		

Temperature of Water 57° Depth Artesian Flow Found
Was a water analysis done? ☐ Yes By whom not tested
Did any strata contain water not suitable for intended use? ☐ Too little
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other
Depth of strata:

(9) LOCATION OF WELL by legal description:
County Lane Latitude Longitude
Township 18S N or S. Range 3W E or W. WM.
Section 19 SW ¼ SW ¼.
Tax Lot 3401 Lot Block Subdivision
Street Address of Well (or nearest address) Next to 85334 So. Willamette, Eugene, OR

(10) STATIC WATER LEVEL:
45 ft. below land surface. Date 9-21-93
Artesian pressure lb. per square inch. Date

(11) WATER BEARING ZONES:
Depth at which water was first found 165'

From	To	Estimated Flow Rate	SWL
165'	170'	1 1/3 gpm	45'

(12) WELL LOG:
Ground elevation

Material	From	To	SWL
Topsoil	0	2'	
Clay	2'	8'	
Brown sandstone	8'	23'	
Basalt	23'	67'	
Brown claystone	67'	80'	
Gray sandstone	80'	90'	
Brown claystone	90'	105'	
Gray, green conglomerate	105'	120'	
Brown claystone	120'	138'	
Gray, green, brown conglom.	138'	390	45'
Brown claystone	390'	410'	
Gray sandstone	410'	500'	
Gray, green, brown sandstone	500'	530'	
Gray, green sandstone	530'	595'	
Gray, green, brown conglomerate	595'	610'	

Date started 9-16-93 Completed 9-21-93

(unbonded) Water Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.
WWC Number 1564
Signed Mike D Date 9-22-93

(bonded) Water Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.
WWC Number 559
Signed Casey L Jones Date 9-21-93

ORIGINAL & FIRST COPY - WATER RESOURCES DEPARTMENT SECOND COPY - CONSTRUCTOR THIRD COPY - CUSTOMER 9809C 10/91

LANE 4167 Lifeguard Log Graphic Worksheet

WATER WELL REPORT
STATE OF OREGON

RECEIVED
FEB 18 1982
WATER RESOURCES DEPT
SALEM, OREGON

State Well No. 18S/3W-19
State Permit No. LANE 16346

(1) OWNER:
Name OTTO GROSSMAN
Address BOX 5623
City EUGENE State OR

(2) TYPE OF WORK (check):
New Well X Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL: Rotary Air ☐ Rotary Mud ☐ Cable X Driven ☐ Dug ☐ Bored ☐

(4) PROPOSED USE (check): Domestic X Industrial ☐ Municipal ☐ Irrigation ☐ Test Well ☐ Other ☐ Thermal ☐ Withdrawal ☐ Reinjection ☐

(5) CASING INSTALLED: Steel Threaded X Welded ☐ Plastic Threaded ☐ Welded X
6 10" Diam. from +1 ft. to 43 ft. Gauge 1/4
" Diam. from ft. to ft. Gauge

LINER INSTALLED:
4 " Diam. from 28 ft. to 128 ft. Gauge 160 PVC

(6) PERFORATIONS: Perforated? X Yes ☐ No
Type of perforator used
Size of perforations 1/4" in. by Round Holes in.
4-1/4" holes per ft. perforations from 73 ft. to 128 ft.
4-1/4" holes per ft. perforations from 48 ft. to 53 ft.
perforations from ft. to ft.

(7) SCREENS: Well screen installed? ☐ Yes X No
Manufacturer's Name
Type Model No.
Diam. Slot Size Set from ft. to ft.
Diam. Slot Size Set from ft. to ft.

(8) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☐ No If yes, by whom?
gal./min. with ft. drawdown after hrs.
" WELL OUT PUT MAY FLUCTUATE
Air test gal./min. with drill stem at ft. hrs.
Bailer test 35 gal./min. with 38 ft. drawdown after 1½ hrs.
Artesian flow g.p.m.
Temperature of water Depth artesian flow encountered ft.

(9) CONSTRUCTION: Special standards: Yes ☐ No X
Well seal—Material used Cement 5.5 Sx Bentonite
Well sealed from land surface to 40 ft.
Diameter of well bore to bottom of seal 10 in.
Diameter of well bore below seal 6 in.
Number of sacks of cement used in well seal 11 sacks
How was cement grout placed? PUMPED
Was pump installed? NO Type HP Depth ft.
Was a drive shoe used? ☐ Yes X No Plugs Size location ft.
Did any strata contain unusable water? ☐ Yes ☐ No NOT ANALYZED
Type of Water? depth of strata
Method of sealing strata off
Was well gravel packed? ☐ Yes X No Size of gravel:
Gravel placed from ft. to ft.

(10) LOCATION OF WELL:
County LANE Driller's well number 8202
¼ ¼ Section 19 T. 18S R. 03W W.M.
Tax Lot # Lot Blk Subdivision
Address at well location:

(11) WATER LEVEL: Completed well.
Depth at which water was first found SURFACE 3' formation 55 ft.
Static level 32 ft. below land surface. Date 1/28/82
Artesian pressure lbs. per square inch. Date

(12) WELL LOG: Diameter of well below casing 6
Depth drilled 128 ft. Depth of completed well 128 ft.
Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
TOPSOIL	0	2	
BROWN Clay	2	35	
Soft Blue Gray Sand Stone	35	40	
RED/Blue Sand Stone	40	56	
Blue-Gray Sand stone	56	105	
RED Dissher (Soft)	105	128	
Shale Temp at 73'			
55' - 7 GPM			
85' - 35 GPM			

Work started 1/18 19 82 Completed 1/28 19 82
Date well drilling machine moved off of well 1/28 19 82

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] Paul Christensen VP Date 2/2, 19 82
(Drilling Machine Operator)
Drilling Machine Operator's License No. 612

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name CHRISTENSEN WELL DRILLING CO
(Person, firm or corporation) (Type or print)
Address 73132 Calimore Rd. Eugene
[Signed] Paul Christensen VP
(Water Well Contractor)
Contractor's License No. 636 Date 2/2, 19 82

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the
WATER RESOURCES DEPARTMENT, SALEM, OREGON 97310
within 30 days from the date of well completion.

SP*12858-680

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WATER WELL REPORT
STATE OF OREGON

RECEIVED
JUN 22 1981
WATER RESOURCES DEPT
SALEM, OREGON

State Well No. 18S/3W-19
State Permit No. LANE 16347

(1) OWNER:
Name STEVE ROMANIA
Address 310 VAN DYN
City EUGENE State ORE. 97401

(2) TYPE OF WORK (check):
New Well [X] Deepening [ ] Reconditioning [ ] Abandon [ ]
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary Air [X] Driven [ ]
Rotary Mud [ ] Dug [ ]
Cable [ ] Bored [ ]

(4) PROPOSED USE (check):
Domestic [X] Industrial [ ] Municipal [ ]
Irrigation [ ] Test Well [ ] Other [ ]
Thermal: Withdrawal [ ] Reinjection [ ]

(5) CASING INSTALLED: Steel [X] Threaded [ ] Plastic [ ] Welded [X]
6" Diam. from +1 ft. to 85' ft. Gauge .250
" Diam. from ft. to ft. Gauge

LINER INSTALLED: NO
" Diam. from ft. to ft. Gauge

(6) PERFORATIONS: Perforated? [ ] Yes [X] No
Type of perforator used
Size of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS: Well screen installed? [ ] Yes [X] No
Manufacturer's Name
Type Model No.
Diam. Slot Size Set from ft. to ft.
Diam. Slot Size Set from ft. to ft.

(8) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? [ ] Yes [X] No If yes, by whom?
gal./min. with ft. drawdown after hrs.
" WELL OUT PUT MAY FLUCTUATE
Air test 50 gal./min. with drill stem at 173 ft. 1 hrs.
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m.
Temperature of water Depth artesian flow encountered ft.

(9) CONSTRUCTION: Special standards: Yes [ ] No [X]
Well seal—Material used Cement 5% Bentonite
Well sealed from land surface to 85 ft.
Diameter of well bore to bottom of seal 10 in.
Diameter of well bore below seal 6 in.
Number of sacks of cement used in well seal sacks
How was cement grout placed? POURED THROUGH TRIMIE
Was pump installed? NO Type HP Depth ft.
Was a drive shoe used? [ ] Yes [X] No Plugs Size: location ft.
Did any strata contain unusable water? [ ] Yes [X] No
Type of Water? depth of strata
Method of sealing strata off
Was well gravel packed? [ ] Yes [X] No Size of gravel:
Gravel placed from ft. to ft.

(10) LOCATION OF WELL:
County Lane Driller's well number 8122
¼ ¼ Section 19 T. 18S R. 3W W.M.
Tax Lot # Lot Blk Subdivision
Address at well location:

(11) WATER LEVEL: Completed well.
Depth at which water was first found 98' ft.
Static level 94 ft. below land surface. Date 5-29-81
Artesian pressure lbs. per square inch. Date

(12) WELL LOG: Diameter of well below casing 6"
Depth drilled 175 ft. Depth of completed well 175 ft.
Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
Red Clay	0	4	
Lt. Br. clay	4	60	
Fine Br. Conglomerate	60	61	
Br. clay	61	70	
Fine Br. Sandstone	70	120	
Blue Sandstone	120	175	

Work started 5-28 1981 Completed 5-29 1981
Date well drilling machine moved off of well 5-29 1981

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] (Drilling Machine Operator) Date 6/3, 1981
Drilling Machine Operator's License No. 636

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name (Person, firm or corporation) (Type or print)
Address 33132 Coburg Rd EUGENE
[Signed] (Water Well Contractor) President
Contractor's License No. 97 Date 6-3, 1981

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the

WATER RESOURCES DEPARTMENT,
SALEM, OREGON 97310
within 30 days from the date of well completion.

SP*12858-690

RECEIVED
NOV 19 1980
WATER RESOURCES DEPT
SALEM, OREGON

WATER WELL REPORT
STATE OF OREGON

State Well No. 18/3W-19c
State Permit No. LANE 16348

(1) OWNER:
Name: Richard Shoemaker (RW)
Address: 85586 So Willamette St
City: Eugene State: Oregon

(2) TYPE OF WORK (check):
New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary Air ☒ Driven ☐
Rotary Mud ☐ Dug ☐
Cable ☐ Bored ☐

(4) PROPOSED USE (check):
Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐
Thermal ☐ Withdrawal ☐ Reinjection ☐

(5) CASING INSTALLED:
Steel ☒ Plastic ☐
Threaded ☐ Welded ☒
6" Diam. from +1 ft. to 19 ft. Gauge .250
" Diam. from ft. to ft. Gauge

LINER INSTALLED:
" Diam. from ft. to ft. Gauge

(6) PERFORATIONS:
Perforated? ☐ Yes ☒ No
Type of perforator used
Size of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS:
Well screen installed? ☐ Yes ☒ No
Manufacturer's Name
Type Model No.
Diam. Slot Size Set from ft. to ft.
Diam. Slot Size Set from ft. to ft.

(8) WELL TESTS:
Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☒ No If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
Air test 5 gal./min. with drill stem at 225 ft. 1 hrs.
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m.
Temperature of water 52° Depth artesian flow encountered ft.

(9) CONSTRUCTION:
Special standards: Yes ☐ No ☒
Well seal—Material used Portland Cement Type III
Well sealed from land surface to 19 ft.
Diameter of well bore to bottom of seal 10 in.
Diameter of well bore below seal 6 in.
Number of sacks of cement used in well seal 5 sacks
How was cement grout placed? Method "D"
Was pump installed? Type HP Depth ft.
Was a drive shoe used? ☐ Yes ☒ No Plugs Size: location ft.
Did any strata contain unusable water? ☐ Yes ☒ No
Type of Water? depth of strata
Method of sealing strata off
Was well gravel packed? ☐ Yes ☒ No Size of gravel:
Gravel placed from ft. to ft.

(10) LOCATION OF WELL:
County Lane Driller's well number 2873 -6500P
¼ SW ¼ Section 19 T. 18 R. 3W W.M.
Tax Lot # 3507 Lot Blk Subdivision
Address at well location: 85586 So. Willamette Eugene, Oregon

(11) WATER LEVEL: Completed well.
Depth at which water was first found 70 ft.
Static level 35 ft. below land surface. Date 9/12/80
Artesian pressure lbs. per square inch. Date

(12) WELL LOG:
Diameter of well below casing 6"
Depth drilled 300 ft. Depth of completed well 300 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
Top Soil	0	4	
Red Clay	4	10	
Blue Clay	10	13	
Blue Shale	13	55	
Red Shale	55	57	
Blue Shale	57	69	
Red Shale	69	72	35
Blue Shale	72	105	35
Red Shale (Lava)	105	108	35
Blue Shale	108	144	35
Red Shale	144	147	35
Blue Shale	147	171	35
Red Shale	171	188	35
Blue Shale	188	196	35
Light Blue Shale (Hard)	196	235	35
Blue Black Shale	235	255	35
Red/Blue Shale	255	288	35
Blue Black Shale (Soft)	288	297	35
Light Blue Shale	297	300	35

Work started 9/5/ 1980 Completed 9/12/ 1980
Date well drilling machine moved off of well 9/12/ 1980

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] (Drilling Machine Operator) Date 9/12/ 1980
Drilling Machine Operator's License No. 390

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name Carter's Drilling & Pump Service (Person, firm or corporation) (Type or print)
Address P.O. Box 46-Springfield, Oregon 97477
[Signed] (Water Well Contractor)
Contractor's License No. 126 Date 10/9/80, 1980

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the WATER RESOURCES DEPARTMENT, SALEM, OREGON 97310 within 30 days from the date of well completion.

SP*12858-590

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NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the

WATER RESOURCES DEPARTMENT,
SALEM, OREGON 97310
within 30 days from the date of well completion.

WATER WELL REPORT
STATE OF OREGON
(Please type or print)
(Do not write above this line)

State Well No. 18S/3W-19
State Permit No. LANE 16349

(1) OWNER:
Name Jerry Valentine
Address 3800 Bottacilli #1
Lake Oswego, OR 97034

(2) TYPE OF WORK (check):
New Well ☐ Deepening ☒ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary ☒ Driven ☐
[redacted] ☐ Jetted ☐
[redacted] ☐ Bored ☐

(4) PROPOSED USE (check):
Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) CASING INSTALLED: Threaded ☐ Welded ☐
4 " Diam. from 0 ft. to 200 ft. Gage PVC
[redacted]" Diam. from ft. to ft. Gage
[redacted]" Diam. from ft. to ft. Gage

(6) PERFORATIONS: Perforated? ☒ Yes ☐ No.
Type of perforator used saw
Size of perforations 1/8 in. by 2 in.
408 perforations from -160 ft. to -200 ft.
204 perforations from -100 ft. to -120 ft.
perforations from ft. to ft.

(7) SCREENS: Well screen installed? ☐ Yes ☒ No
Manufacturer's Name
Type Model No.
Diam. Slot size Set from ft. to ft.
Diam. Slot size Set from ft. to ft.

(8) WELL TESTS: Drawdown is amount water level is lowered below static level
[redacted] a pump test made? ☐ Yes ☒ No If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
" " " "
Air Tested: Could Fluctuate " "
[redacted] 5 gal./min. with 140 ft. drawdown after 1 hrs.
Artesian flow g.p.m.
Temperature of water Depth artesian flow encountered ft.

(9) CONSTRUCTION:
Well seal—Material used undisturbed
Well sealed from land surface to ft.
Diameter of well bore to bottom of seal in.
Diameter of well bore below seal in.
Number of sacks of cement used in well seal sacks
How was cement grout placed?

Was a drive shoe used? ☐ Yes ☒ No Plugs Size: location ft.
Did any strata contain unusable water? ☐ Yes ☒ No
Type of water? depth of strata
Method of sealing strata off
Was well gravel packed? ☐ Yes ☒ No Size of gravel:
Gravel placed from ft. to ft.

(10) LOCATION OF WELL:
County Lane Driller's well number
¼ ¼ Section 19 T. 18S R. 3W W.M.
Bearing and distance from section or subdivision corner

(11) WATER LEVEL: Completed well.
Depth at which water was first found ft.
Static level 60 ft. below land surface. Date 9-6-79
Artesian pressure lbs. per square inch. Date

(12) WELL LOG: Diameter of well below casing 6"
Depth drilled 100 ft. Depth of completed well 200 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
Red Claystone	100	133	
Gray Claystone	133	167	
Gray Sandstone	167	189	
Red Claystone	189	200	

RECEIVED
OCT 10 1979
WATER RESOURCES DEPT
SALEM, OREGON

Work started 9-6 19 79 Completed 9-6 1979
Date well drilling machine moved off of well 9-6 1979

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] David L Mock (Drilling Machine Operator) Date 9-6, 1979
Drilling Machine Operator's License No. 1381

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name Casey Jones Well Drilling Co., Inc. (Person, firm or corporation) (Type or print)
Address 37115 Immigrant Road Pleasant Hill, OR
[Signed] Casey L Jones (Water Well Contractor)
Contractor's License No. 58 Date 9-7, 1979

(USE ADDITIONAL SHEETS IF NECESSARY)

SP-43656-119

LANE 16349.tif printed by Graphic Workshop

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the STATE ENGINEER, SALEM, OREGON 97310 within 30 days from the date of well completion.

RECEIVED
AUG 24 1976
WATER RESOURCES DEPT
SALEM, OREGON

WATER WELL REPORT
STATE OF OREGON
(Please type or print)
(Do not write above this line)

RECEIVED
JUL 30 1976
WATER RESOURCES DEPT
SALEM, OREGON

State Well No. LANE 16350
State Permit No. 185/3W19

(1) OWNER:
Name Tom Teague
Address 85400 So. Willamette St. Eugene, Oregon

(2) TYPE OF WORK (check):
New Well ☐ Deepening ☒ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary ☒ Driven ☐
Cable ☐ Jetted ☐
Dug ☐ Bored ☐

(4) PROPOSED USE (check):
Domestic ☐ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

CASING INSTALLED:
Threaded ☐ Welded ☒
6" Diam. from 0 ft. to 360 ft. Gage PVC
" Diam. from ft. to ft. Gage
" Diam. from ft. to ft. Gage

PERFORATIONS:
Perforated? ☒ Yes ☐ No.
Type of perforator used SAW
Size of perforations 1/8 in. by 3 in.
720 perforations from 140 ft. to 360 ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS:
Well screen installed? ☐ Yes ☒ No
Manufacturer's Name
Type Model No.
Diam. Slot size Set from ft. to ft.
Diam. Slot size Set from ft. to ft.

(8) WELL TESTS:
Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☒ No If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
" " "
Tested by air
Bailer test 5 gal./min. with 322 ft. drawdown after 1 hrs.
Artesian flow g.p.m.
Temperature of water Depth artesian flow encountered ft.

(9) CONSTRUCTION:
Well seal—Material used Cement Undisturbed
Well sealed from land surface to ft.
Diameter of well bore to bottom of seal in.
Diameter of well bore below seal in.
Number of sacks of cement used in well seal sacks
Number of sacks of bentonite used in well seal sacks
Brand name of bentonite
Number of pounds of bentonite per 100 gallons of water lbs./100 gals.
Was a drive shoe used? ☐ Yes ☒ No Plugs Size: location ft.
Did any strata contain unusable water? ☐ Yes ☒ No
Type of water? depth of strata
Method of sealing strata off
Was well gravel packed? ☐ Yes ☒ No Size of gravel:
Gravel placed from ft. to ft.

(10) LOCATION OF WELL:
County Lane Driller's well number
¼ ¼ Section 19 T. 18S R. 3W W.M.
Bearing and distance from section or subdivision corner

(11) WATER LEVEL: Completed well.
Depth at which water was first found 147 ft.
Static level 38 ft. below land surface. Date 7/2/76
Artesian pressure lbs. per square inch. Date

(12) WELL LOG:
Diameter of well below casing 6
Depth drilled 255 ft. Depth of completed well 360 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
Gray Blue Sandstone	105	147	
Red Brown Cong.	147	156	
Gray Green Sandstone	156	174	
Red Claystone	174	179	
Gray Sandstone	179	187	
Gray Basalt	187	192	
Gray Claystone	192	263	
Blue Brown Claystone	263	278	
Red Brown Claystone	278	283	
Red Gray Cong.	283	288	
Red White Sandstone	288	294	
Blue Green Brown Cong.	294	317	
Red Brown Gray Cong.	317	328	
Red Gray Sandstone	328	344	
Blue Green Sandstone	344	351	
Red Gray Blue Cong.	351	360	

Work started 7/1/76 19 Completed 7/2/76 19
Date well drilling machine moved off of well 7/2/76 19

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] John K. Jones S. (Drilling Machine Operator) Date 7/2/76, 19
Drilling Machine Operator's License No. 702

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name Casey Jones Well Drilling Co., Inc. (Person, firm or corporation) (Type or print)
Address 37115 Immigrant Rd. Pleasant Hill, Oregon
[Signed] Casey L. Jones (Water Well Contractor)
Contractor's License No. 559 Date 7/2/76, 19

(USE ADDITIONAL SHEETS IF NECESSARY)

SP-45656-119

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NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the STATE ENGINEER, SALEM, OREGON 97310 within 30 days from the date of well completion.

WATER WELL REPORT
STATE OF OREGON
(Please type or print) (Do not write above this line)

RECEIVED
AUG 24 1976
WATER RESOURCES DEPT.
SALEM, OREGON

RECEIVED
JUL 30 1976
WATER RESOURCES DEPT.
SALEM, OREGON

State Well No. LANE 16351
State Permit No. 185/30W-19

(1) OWNER:
WATER RESOURCES DEPT. SALEM, OREGON
Name Tom Teague
Address 85400 So. Willamette St. Eugene, Oregon

(2) TYPE OF WORK (check):
New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary ☒ Driven ☐
Cable ☐ Jetted ☐
Dug ☐ Bored ☐

(4) PROPOSED USE (check):
Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

CASING INSTALLED:
Threaded ☐ Welded ☒
6" Diam. from 0 ft. to 26½ ft. Gage /250
4" Diam. from 0 ft. to 300 ft. Gage PVC
" Diam. from ft. to ft. Gage

PERFORATIONS:
Perforated? ☒ Yes ☐ No.
Type of perforator used Saw
Size of perforations 1/8 in. by 3 in.
720 perforations from 80 ft. to 300 ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS:
Well screen installed? ☐ Yes ☒ No
Manufacturer's Name
Type Model No.
Diam. Slot size Set from ft. to ft.
Diam. Slot size Set from ft. to ft.

(8) WELL TESTS:
Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☒ No If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
" " " "
" Tested by air "
Bailer test 4½ gal./min. with 261 ft. drawdown after 1 hrs.
Artesian flow g.p.m.
Temperature of water Depth artesian flow encountered ft.

(9) CONSTRUCTION:
Well seal—Material used Cement
Well sealed from land surface to 26 ft.
Diameter of well bore to bottom of seal 10 in.
Diameter of well bore below seal 6 in.
Number of sacks of cement used in well seal 5 sacks
Number of sacks of bentonite used in well seal sacks
Brand name of bentonite
Number of pounds of bentonite per 100 gallons of water lbs./100 gals.
Was a drive shoe used? ☐ Yes ☒ No Plugs Size: location ft.
Did any strata contain unusable water? ☐ Yes ☒ No
Type of water? depth of strata
Method of sealing strata off
Was well gravel packed? ☐ Yes ☒ No Size of gravel:
Gravel placed from ft. to ft.

(10) LOCATION OF WELL:
County Lane Driller's well number
¼ ¼ Section 19 T. 18S R. 3W W.M.
Bearing and distance from section or subdivision corner

(11) WATER LEVEL: Completed well.
Depth at which water was first found 110 ft.
Static level ☒ 39 ft. below land surface. Date 7/6/76
Artesian pressure lbs. per square inch. Date

(12) WELL LOG:
Diameter of well below casing 6"
Depth drilled 300 ft. Depth of completed well 300 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. *Report each change in position of Static Water Level and indicate principal water-bearing strata.*

MATERIAL	From	To	SWL
Top Soil	0	2	
Brown Clay	2	7	
Brown Clay & Boulders	7	13	
Blue Brown Cong.	13	20	
Gray Blue Brown Cong.	20	55	
Gray Basalt	55	99	
Red Claystone	99	112	
Blue Brown Cong.	112	124	
Gray Sandstone	124	128	
Gray Brown Cong.	128	170	
Turquoise Sandstone	170	174	
Gray Sandstone	174	210	
Blue Brown Cong.	210	239	
Blue Gray Cong.	239	261	
Blue Gray Claystone	261	300	

Work started 7/2/76 19 Completed 7/6/76 19
Date well drilling machine moved off of well 7/6/76 19

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] (Drilling Machine Operator) Date 7/6/76, 19
Drilling Machine Operator's License No. 979

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name Casey Jones Well Drilling Co., Inc. (Person, firm or corporation) (Type or print)
Address 37115 Immigrant Rd. Pleasant Hill, Oregon
[Signed] (Water Well Contractor)
Contractor's License No. 559 Date 7/6/76, 19

(USE ADDITIONAL SHEETS IF NECESSARY)
SP*45656-119

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NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the

STATE ENGINEER, SALEM, OREGON 97310
within 30 days from the date of well completion.

RECEIVED
JUL 10 1975
WATER RESOURCES DEPT.
SALEM, OREGON

WATER WELL REPORT
STATE OF OREGON

(Please type or print)
(Do not write above this line)

State Well No. 18S/3W-19
State Permit No. LANE 16352

(1) OWNER:
Name Harry Robbins
Address 5855 S. Willamette St.
Eugene, Oregon

(2) TYPE OF WORK (check):
New Well ☐ Deepening ☒ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary ☒ Driven ☐
Cable ☐ Jetted ☐
[redacted] ☐ Bored ☐

(4) PROPOSED USE (check):
Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) CASING INSTALLED: Threaded ☐ Welded ☐
PVC 4 " Diam. from 0 ft. to 260 ft. Gage Class 200
" Diam. from ft. to ft. Gage
" Diam. from ft. to ft. Gage

(6) PERFORATIONS: Perforated? ☒ Yes ☐ No.
Type of perforator used Saw
Size of perforations 4 in. by 1/8 in.
220 perforations from 40 ft. to 260 ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS: Well screen installed? ☐ Yes ☒ No
Manufacturer's Name
Type Model No.
Diam. Slot size Set from ft. to ft.
Diam. Slot size Set from ft. to ft.

(8) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☐ No If yes, by whom? Driller
[redacted]: 6 gal./min. with 200 ft. drawdown after 1 hrs.
" " " "
" " " "
Bailer test No gal./min. with ft. drawdown after hrs.
[redacted]sian flow g.p.m.
Temperature of water Depth artesian flow encountered ft.

(9) CONSTRUCTION: Not altered refer to previous well log.
Well seal—Material used
Well sealed from land surface to ft.
Diameter of well bore to bottom of seal in.
Diameter of well bore below seal in.
Number of sacks of cement used in well seal sacks
Number of sacks of bentonite used in well seal sacks
Brand name of bentonite
Number of pounds of bentonite per 100 gallons of water lbs./100 gals.
Was a drive shoe used? ☐ Yes ☐ No Plugs Size: location ft.
Did any strata contain unusable water? ☐ Yes ☐ No
Type of water? depth of strata
Method of sealing strata off
Was well gravel packed? ☐ Yes ☐ No Size of gravel:
Gravel placed from ft. to ft.

(10) LOCATION OF WELL:
County Lane Driller's well number
¼ S.W¼ Section 19 T. 18-S R. 3-W W.M.
Bearing and distance from section or subdivision corner

(11) WATER LEVEL: Completed well.
Depth at which water was first found ft.
Static level 60 ft. below land surface. Date 2-26-75
Artesian pressure lbs. per square inch. Date

(12) WELL LOG: Diameter of well below casing 6"
Depth drilled 260 ft. Depth of completed well 260 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
Well deepened Soft brown			
shale	225	260	60
PVC liner installed from	0	260	

Work started 5-26 19 75 Completed 5-28 1975
Date well drilling machine moved off of well 5-28 1975

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] [redacted] Date 7-2 19 75
(Drilling Machine Operator)
Drilling Machine Operator's License No. 717

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name Carter's Drilling & Pump Service
(Person, firm or corporation) (Type or print)
Address P. O. Box 46 Springfield, Oregon 97477
[Signed] [redacted]
(Water Well Contractor)
Contractor's License No. 126 Date 7-2 19 75

(USE ADDITIONAL SHEETS IF NECESSARY) SP-43656.018

LANE_16352.tif printed by Graphic Workshop

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the
STATE ENGINEER, SALEM, OREGON 97310 within 30 days from the date of well completion.

RECEIVED
JUL 30 1975
WATER RESOURCES DEPT.
SALEM, OREGON

WATER WELL REPORT
STATE OF OREGON
(Please type or print)
(Do not write above this line)

State Well No. 18S/3W-19
State Permit No. LANE 16353

(1) OWNER:
Name Steven Modesitt
Address 145 N. Willamette
Coburg, Oregon

(2) TYPE OF WORK (check):
New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary ☒ Driven ☐
Cable ☐ Jetted ☐
Dug ☐ Bored ☐

(4) PROPOSED USE (check):
Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) CASING INSTALLED:
Threaded ☐ Welded ☒
6" Diam. from 0 ft. to 106 ft. Gage .250
" Diam. from ft. to ft. Gage
" Diam. from ft. to ft. Gage

(6) PERFORATIONS:
Perforated? ☐ Yes ☒ No
Type of perforator used
Size of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS:
Well screen installed? ☐ Yes ☒ No
Manufacturer's Name
Type Model No.
Diam. Slot size Set from ft. to ft.
Diam. Slot size Set from ft. to ft.

(8) WELL TESTS:
Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☐ No If yes, by whom?
Yield: None gal./min. with None ft. drawdown after None hrs.
" " " "
" " " "
Bailer test No gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m.
Temperature of water Depth artesian flow encountered ft.

(9) CONSTRUCTION:
Well seal—Material used Portland Cement
Well sealed from land surface to 30 ft.
Diameter of well bore to bottom of seal 9 7/8 in.
Diameter of well bore below seal 6 in.
Number of sacks of cement used in well seal 8 sacks
Number of sacks of bentonite used in well seal -0- sacks
Brand name of bentonite
Number of pounds of bentonite per 100 gallons of water lbs./100 gals.
Was a drive shoe used? ☐ Yes ☐ No Plugs Size: location ft.
Did any strata contain unusable water? ☐ Yes ☒ No
Type of water? depth of strata
Method of sealing strata off
Was well gravel packed? ☐ Yes ☒ No Size of gravel:
Gravel placed from ft. to ft.

(10) LOCATION OF WELL:
County Lane Driller's well number 0568-CP
¼ N.W.¼ Section 19 T. 18 S. R. 3 W. W.M.
Bearing and distance from section or subdivision corner

(11) WATER LEVEL: Completed well.
Depth at which water was first found None ft.
Static level None ft. below land surface. Date -
Artesian pressure - lbs. per square inch. Date -

(12) WELL LOG:
Diameter of well below casing 6
Depth drilled 325 ft. Depth of completed well 325 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. *Report each change in position of Static Water Level and indicate principal water-bearing strata.*

MATERIAL	From	To	SWL
Top soil	0	6	
Red clay and boulders	6	23	
Soft red shale	23	99	
Hard grey basalt	99	170	
Grey shale	170	180	
Hard grey basalt	180	217	
Grey shale	217	235	
Hard grey basalt	235	280	
Soft brown shale	280	325	
This well completely dry. Was left as a properly constructed well with steel cap welded on casing, for possible future drilling.			

Work started 7-16 19 75 Completed 7-24 19 75
Date well drilling machine moved off of well 7-24 19 75

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] (Drilling Machine Operator) Date 7-25 19 75
Drilling Machine Operator's License No. 717

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name Carter's Drilling & Pump Service (Person, firm or corporation) (Type or print)
Address P. O. Box 16 Springfield, Oregon 97477
[Signed] (Water Well Contractor)
Contractor's License No. 126 Date 7-25 19 75

(USE ADDITIONAL SHEETS IF NECESSARY)

SP*45656-118

LANE 16353.tif printed by Graphic Workshop

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the
STATE ENGINEER, SALEM, OREGON 97310
within 30 days from the date of well completion.

WATER WELL REPORT

STATE OF OREGON (Please type or print) (Do not write above this line)

RECEIVED
AUG7 1974
STATE ENGINEER
SALEM, OREGON

State Well No. 18S/3W-19
State Permit No. LANE 16354

(1) OWNER:

Name Tom Teague
Address Rt 4 Box 319 K-3
Eugene, Oregon 97405

(2) TYPE OF WORK (check):

New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:

Rotary ☒ Driven ☐
Cable ☐ Jetted ☐
Dug ☐ Bored ☐

(4) PROPOSED USE (check):

Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) CASING INSTALLED:

Threaded ☐ Welded ☒
6" Diam. from 0 ft. to 40 ft. Gage .250
" Diam. from ft. to ft. Gage
" Diam. from ft. to ft. Gage

(6) PERFORATIONS:

Perforated? ☐ Yes ☒ No
Type of perforator used
Size of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS:

Well screen installed? ☐ Yes ☒ No
Manufacturer's Name
Type Model No.
Diam. Slot size Set from ft. to ft.
Diam. Slot size Set from ft. to ft.

(8) WELL TESTS:

Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☒ No If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
" " " "
Tested by Air Estimate could fluctuate
Bailer test 9½ gal./min. with 77 ft. drawdown after 1 hrs.
Artesian flow g.p.m.
Temperature of water Depth artesian flow encountered ft.

(9) CONSTRUCTION:

Well seal—Material used Cement
Well sealed from land surface to 39 ft.
Diameter of well bore to bottom of seal 10 in.
Diameter of well bore below seal 6 in.
Number of sacks of cement used in well seal 7 sacks
Number of sacks of bentonite used in well seal sacks
Brand name of bentonite
Number of pounds of bentonite per 100 gallons of water lbs./100 gals.
Was a drive shoe used? ☐ Yes ☒ No Plugs Size: location ft.
Did any strata contain unusable water? ☐ Yes ☒ No
Type of water? depth of strata
Method of sealing strata off
Was well gravel packed? ☐ Yes ☒ No Size of gravel:
Gravel placed from ft. to ft.

(10) LOCATION OF WELL:

County Lane Driller's well number
¼ ¼ Section 19 T. 18S R. 3W W.M.
Bearing and distance from section or subdivision corner

(11) WATER LEVEL: Completed well.

Depth at which water was first found 46 ft.
Static level 28 ft. below land surface. Date 7/18/74
Artesian pressure lbs. per square inch. Date

(12) WELL LOG:

Diameter of well below casing 6"
Depth drilled 105 ft. Depth of completed well 105 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
Top Soil & Boulders	0	2	
Brown Clay & Boulders	2	20	
Red Clay Stone	20	37	
Brown Clay Stone	37	45	
Blue Gray Basalt	45	84	
Red Clay Stone	84	89	
Blue Green Clay Stone	89	105	

Work started 7/17/74 19 Completed 7/18/74 19
Date well drilling machine moved off of well 7/18/74 19

Drilling Machine Operator's Certification:

This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.

[Signed] (Drilling Machine Operator) Date 7/18/74 19

Drilling Machine Operator's License No. 702

Water Well Contractor's Certification:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Name Casey Jones Well Drilling Co., Inc. (Person, firm or corporation) (Type or print)
Address Rt 8, Box 695 Pleasant Hill, Oregon
[Signed] (Water Well Contractor)
Contractor's License No. 559 Date 7/18/74 19

(USE ADDITIONAL SHEETS IF NECESSARY)

SP-66654-110

LANE 16354.tif printed by Graphic Workshop

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the

STATE ENGINEER, SALEM, OREGON 97310
within 30 days from the date of well completion.

WATER WELL REPORT
STATE OF OREGON

(Please type or print)

(Do not write above this line)

RECEIVED
JUN 20 1974
STATE ENGINEER
SALEM, OREGON

State Well No. 18S/3W-19
State Permit No. LANE 16355

(1) OWNER:

Name Emery Pruett

Address 5855 Willamette, Eugene, Oregon

(2) TYPE OF WORK (check):

New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in item 12.

(3) TYPE OF WELL:

Rotary ☒ Driven ☐
Cable ☐ Jetted ☐
Dug ☐ Bored ☐

(4) PROPOSED USE (check):

Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

CASING INSTALLED:

Threaded ☐ Welded ☒

6 " Diam. from 0 ft. to 20 ft. Gage .250
4 " Diam. from 0 ft. to 155 ft. Gage PVC
" Diam. from ft. to ft. Gage

PERFORATIONS:

Perforated? ☒ Yes ☐ No

Type of perforator used Saw

Size of perforations 1/8 in. by 4 in.

36 perforations from 22 ft. to 40 ft.
160 perforations from 75 ft. to 155 ft.
perforations from ft. to ft.

(7) SCREENS:

Well screen installed? ☐ Yes ☒ No

Manufacturer's Name

Type Model No.

Diam. Slot size Set from ft. to ft.
Diam. Slot size Set from ft. to ft.

(8) WELL TESTS:

Drawdown is amount water level is lowered below static level

Was a pump test made? ☐ Yes ☒ No If yes, by whom?

Yield: gal./min. with ft. drawdown after hrs.

" " "

Tested by Air, Estimate could fluctuate "

9 gal./min. with 112 ft. drawdown after 1 hrs.

Artesian flow g.p.m.

Temperature of water Depth artesian flow encountered ft.

(9) CONSTRUCTION:

Well seal—Material used Cement

Well sealed from land surface to 19 ft.

Diameter of well bore to bottom of seal 10 in.

Diameter of well bore below seal 6 in.

Number of sacks of cement used in well seal 4 sacks

Number of sacks of bentonite used in well seal sacks

Brand name of bentonite

Number of pounds of bentonite per 100 gallons of water lbs./100 gals.

Was a drive shoe used? ☒ Yes ☐ No Plugs Size: location ft.

Did any strata contain unusable water? ☐ Yes ☒ No

Type of water? depth of strata

Method of sealing strata off

Was well gravel packed? ☐ Yes ☒ No Size of gravel:

Gravel placed from ft. to ft.

(10) LOCATION OF WELL:

County Lane Driller's well number

¼ ¼ Section 19 T. 18S R. 3W W.M.

Bearing and distance from section or subdivision corner

(11) WATER LEVEL: Completed well.

Depth at which water was first found 28' ft.

Static level 43 ft. below land surface. Date 6/23/74

Artesian pressure lbs. per square inch. Date

(12) WELL LOG:

Diameter of well below casing 6"

Depth drilled 155 ft. Depth of completed well 155 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. *Report each change in position of Static Water Level and indicate principal water-bearing strata.*

MATERIAL	From	To	SWL
Black Clay	0	3	
Gray Clay	3	14	
Blueish Gray Sand Stone	14	32	
Blue Clay Stone	32	57	
Reddish Clay Stone	57	59	
Gray Clay Stone	59	73	
Blue Clay Stone	73	86	
Light Blue Sand Stone	86	91	
Lavender Clay Stone	91	122	
Blue Clay Stone	122	139	
Reddish Brown Clay Stone	39	155	

Work started 6/13/74 19 Completed 6/13/74 19

Date well drilling machine moved off of well 6/13/74 19

Drilling Machine Operator's Certification:

This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.

[Signed] Casey L Jones (Drilling Machine Operator) Date 6/13/74 19

Drilling Machine Operator's License No. 521

Water Well Contractor's Certification:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Name Casey Jones Well Drilling (Person, firm or corporation) (Type or print)

Address Rt.8 Box 695, Pleasant Hill, Oregon 97401

[Signed] Casey L Jones (Water Well Contractor)

Contractor's License No. 559 Date 6/14/74 19

(USE ADDITIONAL SHEETS IF NECESSARY)

SP*48456-128

LANE 16355 [illegible]

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the
WATER RESOURCES DEPARTMENT.
SALEM, OREGON 97310
within 30 days from the date of well completion.

NC

WATER WELL REPORT
STATE OF OREGON
(Please type or print)
(Do not write above this line)

RECEIVED
FEB - 7 1978
WATER RESOURCES DEPT.
SALEM, OREGON

State Well No. 18/3W-19bc
State Permit No. LANE 16356

(1) OWNER:
Name William Ruiter
Address 485 Ringwood Avenue 97404

(2) TYPE OF WORK (check):
New Well ☑ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary ☑ Driven ☐
Cable ☐ Jetted ☐
Dug ☐ Bored ☐

(4) PROPOSED USE (check):
Domestic ☑ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

CASING INSTALLED: Threaded ☐ Welded ☐
5" Diam. from +1 ft. to 19 ft. Gage .250
_____" Diam. from _____ ft. to _____ ft. Gage _____
_____" Diam. from _____ ft. to _____ ft. Gage _____

PERFORATIONS: Perforated? ☐ Yes ☑ No.
Type of perforator used
Size of perforations in. by in.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.

(7) SCREENS: Well screen installed? ☐ Yes ☑ No
Manufacturer's Name
Type Model No.
Diam. Slot size Set from ft. to ft.
Diam. Slot size Set from ft. to ft.

(8) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☐ No If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
" " " "
" " " "
Bailer test 5 1/2 gal./min. with 260 ft. drawdown after 4 hrs.
Artesian flow g.p.m.
Temperature of water Was Depth artesian flow encountered ft.

(9) CONSTRUCTION:
Well seal—Material used Cement
Well sealed from land surface to 18 Ft ft.
Diameter of well bore to bottom of seal 9" in.
Diameter of well bore below seal 6" in.
Number of sacks of cement used in well seal 8 sacks
How was cement grout placed? Poured mixed + poured
Was a drive shoe used? ☐ Yes ☑ No Plugs Size: location ft.
Did any strata contain unusable water? ☐ Yes ☐ No
Type of water? depth of strata
Method of sealing strata off
Was well gravel packed? ☐ Yes ☑ No Size of gravel:
Gravel placed from ft. to ft.

(10) LOCATION OF WELL:
County Lane Driller's well number
SW ¼ NW¼ Section 19 T. 18S R. 3W W.M.
Bearing and distance from section or subdivision corner
NE¼ of SE ¼ of SW¼ of NW¼

(11) WATER LEVEL: Completed well.
Depth at which water was first found 160 ft.
Static level 50 ft. below land surface. Date July 30
Artesian pressure lbs. per square inch. Date

(12) WELL LOG: Diameter of well below casing 6"
Depth drilled 430 ft. Depth of completed well 430 ft.
Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
Top soil	0	3	
Blue sand stone	3	160	
Black Basalt	160	240	
Blue sand stone	240	250	
Black Basalt	250	340	
Brown sand & dirt	340	380	
Black Basalt cracked	380	400	
Black Basalt Hard	400	430	

Work started July 26 19 77 Completed July 31 19 77
Date well drilling machine moved off of well July 31 19 77

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] Harold White (Drilling Machine Operator) Date July 31 19 77
Drilling Machine Operator's License No. 1040

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name Harold White (Person, firm or corporation) (Type or print)
Address 3647 C 17th St Eugene Ore
[Signed] Harold Ray White (Water Well Contractor)
Contractor's License No. 630 Date July 31, 1977

(USE ADDITIONAL SHEETS IF NECESSARY)

SP-45634-119

LANE 16356.tif printed by Graphic Workshop

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the
WATER RESOURCES DEPARTMENT,
SALEM, OREGON 97310
within 30 days from the date of well completion.

RECEIVED
AUG 4 1977
WATER RESOURCES DEPT.
SALEM, OREGON

WATER WELL REPORT
STATE OF OREGON
(Please type or print)
(Do not write above this line)

State Well No. 18S/3W-19 bc
State Permit No. LANE 16357

(1) OWNER:
Name William Ruiter
Address 485 Kingswood Eugene 97405

(2) TYPE OF WORK (check):
New Well ☑ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary ☑ Driven ☐
Cable ☐ Jetted ☐
Dug ☐ Bored ☐

(4) PROPOSED USE (check):
Domestic ☑ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

CASING INSTALLED:
Threaded ☐ Welded ☐
5" Diam. from +1 ft. to 19 ft. Gage .250
" Diam. from ft. to ft. Gage
" Diam. from ft. to ft. Gage

PERFORATIONS:
Perforated? ☐ Yes ☑ No
Type of perforator used
Size of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS:
Well screen installed? ☐ Yes ☑ No
Manufacturer's Name
Type Model No.
Diam. Slot size Set from ft. to ft.
Diam. Slot size Set from ft. to ft.

(8) WELL TESTS:
Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☐ No If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
" " " "
" " " "
~~Bailer~~ air test 5 1/2 gal./min. with 260 ft. drawdown after 2 hrs.
Artesian flow g.p.m.
Temperature of water air Depth artesian flow encountered ft.

(9) CONSTRUCTION:
Well seal—Material used Cement
Well sealed from land surface to 18 ft.
Diameter of well bore to bottom of seal 9" in.
Diameter of well bore below seal 6" in.
Number of sacks of cement used in well seal 8 sacks
How was cement grout placed? pour mixed 1 gour
Was a drive shoe used? ☐ Yes ☑ No Plugs Size: location ft.
Did any strata contain unusable water? ☑ Yes ☐ No
Type of water? depth of strata
Method of sealing strata off
Was well gravel packed? ☐ Yes ☑ No Size of gravel:
Gravel placed from ft. to ft.

(10) LOCATION OF WELL:
County Lane Driller's well number
SW¼ NW¼ Section 19 T. 18S R. 3W W.M.
Bearing and distance from section or subdivision corner
NE ¼ of SE ¼ of SW ¼ of NW ¼

(11) WATER LEVEL: Completed well.
Depth at which water was first found 160 ft.
Static level 160 ft. below land surface. Date July 30
Artesian pressure lbs. per square inch. Date

(12) WELL LOG:
Diameter of well below casing 6"
Depth drilled 430 ft. Depth of completed well 430 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
Top soil	0	3	
Blue sand stone	3	160	
Black Basalt	160	240	
Blue sand stone	240	250	
Black Basalt	250	340	
Brown sand stone	340	380	
Black Basalt cracked	380	400	
Black Basalt Hard	400	430	

Work started July 26 19 77 Completed July 31 19 77
Date well drilling machine moved off of well July 31 19 77

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] Harold White (Drilling Machine Operator) Date July 31, 19 77
Drilling Machine Operator's License No. 1040

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name Harold White (Person, firm or corporation) (Type or print)
Address 3647 E 17th st Eugene Or.
[Signed] Harold Ray White (Water Well Contractor)
Contractor's License No. 630 Date July 31 19 77

(USE ADDITIONAL SHEETS IF NECESSARY)

SP*45556-116

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the
STATE ENGINEER, SALEM, OREGON 97310
within 30 days from the date of well completion.

WATER WELL REPORT

STATE OF OREGON (Please type or print) (Do not write above this line)

RECEIVED AUG 1 1974 STATE ENGINEER SALEM, OREGON

State Well No. 18S/3W-19C
State Permit No. LANE 16358

(1) OWNER:
Name Harry Robbins
Address 5855 S. Willamette
% Emery Pruitt Eugene, Oregon

(2) TYPE OF WORK (check):
New Well [X] Deepening [ ] Reconditioning [ ] Abandon [ ]
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary [X] Driven [ ]
Cable [ ] Jetted [ ]
Dug [ ] Bored [ ]

(4) PROPOSED USE (check):
Domestic [X] Industrial [ ] Municipal [ ]
Irrigation [ ] Test Well [ ] Other [ ]

CASING INSTALLED:
Threaded [ ] Welded [X]
6" Diam. from 0 ft. to 20 ft. Gage .250
_____" Diam. from _____ ft. to _____ ft. Gage _____
_____" Diam. from _____ ft. to _____ ft. Gage _____

PERFORATIONS:
Perforated? [ ] Yes [X] No.
Type of perforator used
Size of perforations in. by in.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.

(7) SCREENS:
Well screen installed? [ ] Yes [X] No
Manufacturer's Name
Type Model No.
Diam. _____ Slot size _____ Set from _____ ft. to _____ ft.
Diam. _____ Slot size _____ Set from _____ ft. to _____ ft.

(8) WELL TESTS:
Drawdown is amount water level is lowered below static level
Was a pump test made? [X] Yes [ ] No If yes, by whom? driller
Yield: 5 gal./min. with 166 ft. drawdown after 1 hrs.
" " " "
" " " "
Bailer test no gal./min. with ft. drawdown after hrs.
Artesian flow 0 g.p.m.
Temperature of water 55 Depth artesian flow encountered ft.

(9) CONSTRUCTION:
Well seal—Material used Portland Cement
Well sealed from land surface to 20 (7/8) ft.
Diameter of well bore to bottom of seal 9 in.
Diameter of well bore below seal 6 in.
Number of sacks of cement used in well seal 5 sacks
Number of sacks of bentonite used in well seal sacks
Brand name of bentonite
Number of pounds of bentonite per 100 gallons of water lbs./100 gals.
Was a drive shoe used? [X] Yes [ ] No Plugs Size: location ft.
Did any strata contain unusable water? [ ] Yes [X] No
Type of water? depth of strata
Method of sealing strata off
Was well gravel packed? [ ] Yes [X] No Size of gravel:
Gravel placed from ft. to ft.

(10) LOCATION OF WELL:
County Lane Driller's well number
¼ SW ¼ Section 19 T. 18-S R. 3-W W.M.
Bearing and distance from section or subdivision corner

(11) WATER LEVEL: Completed well.
Depth at which water was first found 130 ft.
Static level 40 ft. below land surface. Date 7-17-74
Artesian pressure lbs. per square inch. Date

(12) WELL LOG:
Diameter of well below casing 6"
Depth drilled 225 ft. Depth of completed well 225 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
Hard basalt boulders	0	11	
hard grey basalt	11	95	
brown shale	95	102	
grey rock	102	131	40
blue shale	131	147	40
grey rock	147	169	40
blue shale	169	206	40
grey rock	206	225	40

Work started 7-15 19 74 Completed 7-17-74 19
Date well drilling machine moved off of well 7-17- 1974

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] Arthur N Guerin (Drilling Machine Operator) Date 7-23, 1974
Drilling Machine Operator's License No. 717

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name Carter Drilling & Pump Service (Person, firm or corporation) (Type or print)
Address P. O. Box 46 Springfield, Oregon
[Signed] (Water Well Contractor)
Contractor's License No. 126 Date 7-24, 1974

(USE ADDITIONAL SHEETS IF NECESSARY)

SP*45656-119

LANE 16358.tif printed by Graphic Workshop

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the
STATE ENGINEER, SALEM, OREGON 97310
within 30 days from the date of well completion.

WATER WELL REPORT
STATE OF OREGON
(Please type or print)
(Do not write above this line)

RECEIVED
JUL 16 1973
STATE ENGINEER
SALEM, OREGON

State Well No. 18S/6W-19Bc
State Permit No. LANE 16359

(1) OWNER:
Name: Ben Johnson
Address: 2924 Adams St.
Eugene, Oregon

(2) TYPE OF WORK (check):
New Well ☑ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary ☐ Driven ☐
Cable ☑ Jetted ☐
Dug ☐ Bored ☐

(4) PROPOSED USE (check):
Domestic ☑ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) CASING INSTALLED:
Threaded ☐ Welded ☑
6" Diam. from 0 ft. to 74 ft. Gage .250
_____" Diam. from _____ ft. to _____ ft. Gage _____
_____" Diam. from _____ ft. to _____ ft. Gage _____

(6) PERFORATIONS:
Perforated? ☐ Yes ☑ No
Type of perforator used
Size of perforations ____ in. by ____ in.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.

(7) SCREENS:
Well screen installed? ☐ Yes ☑ No
Manufacturer's Name
Type _____ Model No. _____
Diam. _____ Slot size _____ Set from _____ ft. to _____ ft.
Diam. _____ Slot size _____ Set from _____ ft. to _____ ft.

(8) WELL TESTS:
Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☑ No If yes, by whom?
Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.
" " " " "
" " " " "
Bailer test 1/2 gal./min. with 55 ft. drawdown after 1 hrs.
Artesian flow _____ g.p.m.
Temperature of water 52 Depth artesian flow encountered _____ ft.

(9) CONSTRUCTION:
Well seal—Material used BENTONITE
Well sealed from land surface to 20 ft.
Diameter of well bore to bottom of seal 10 in.
Diameter of well bore below seal 6 in.
Number of sacks of cement used in well seal _____ sacks
Number of sacks of bentonite used in well seal 7 sacks
Brand name of bentonite VOLCLAY
Number of pounds of bentonite per 100 gallons of water 133 lbs./100 gals.
Was a drive shoe used? ☑ Yes ☐ No Plugs _____ Size: location _____ ft.
Did any strata contain unusable water? ☐ Yes ☑ No
Type of water? _____ depth of strata _____
Method of sealing strata off
Was well gravel packed? ☐ Yes ☑ No Size of gravel: _____
Gravel placed from _____ ft. to _____ ft.

(10) LOCATION OF WELL:
County Lane Driller's well number 350
NW ¼ SW ¼ Section 19 T. 18S R. 3W W.M.
Bearing and distance from section or subdivision corner

(11) WATER LEVEL: Completed well.
Depth at which water was first found 240 ft.
Static level 260 ft. below land surface. Date 7/4/73
Artesian pressure _____ lbs. per square inch. Date

(12) WELL LOG:
Diameter of well below casing 6"
Depth drilled 325 ft. Depth of completed well 315 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. *Report each change in position of Static Water Level and indicate principal water-bearing strata.*

MATERIAL	From	To	SWL
BOULDERS + CLAY	0	12	
DARK BROWN CLAY	12	24	
RED-BROWN CLAYSTONE	24	63	
DARK GRAY SANDSTONE	63	153	
GRAY SANDSTONE-MED	153	248	
ROCK	248	252	
GRAY SANDSTONE-MED	252	300	
ROCK-GRAY	300	325	260

Work started 6/29 1973 Completed 7/6 1973
Date well drilling machine moved off of well 7/6 1973

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] Wm T Burdge (Drilling Machine Operator) Date 7/6 1973
Drilling Machine Operator's License No. 747

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name Miller-Jensen Company (Person, firm or corporation) (Type or print)
Address P O Box 2571 Eugene, Or 97402
[Signed] Harry A. Miller Owner (Water Well Contractor)
Contractor's License No. 179 Date 7-12-73 19

(USE ADDITIONAL SHEETS IF NECESSARY)

LANE 16359.tif printed by Graphic Workshop

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the STATE ENGINEER, SALEM, OREGON 97310 within 30 days from the date of well completion.

WATER WELL REPORT

STATE OF OREGON
(Please type or print)
Do not write above this line)

State Well No. 18/3w-19 M
State Permit No. LANE 16360

(1) OWNER:

Name Ben A. Johnson
Address 2924 Adams St.
Eugene, Oregon

(2) TYPE OF WORK (check):

New Well ☐ Deepening ☒ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:

Rotary ☐ Driven ☐
Cable ☒ Jetted ☐
D[illegible] ☐ Bored ☐

(4) PROPOSED USE (check):

Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) CASING INSTALLED:

Threaded ☐ Welded ☐
_____" Diam. from _____ ft. to _____ ft. Gage _____
_____" Diam. from _____ ft. to _____ ft. Gage _____
_____" Diam. from _____ ft. to _____ ft. Gage _____

(6) PERFORATIONS:

Perforated? ☐ Yes ☐ No.
Type of perforator used
Size of perforations _____ in. by _____ in.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.

(7) SCREENS:

Well screen installed? ☐ Yes ☒ No
Manufacturer's Name
Type _____ Model No.
Diam. _____ Slot size _____ Set from _____ ft. to _____ ft.
Diam. _____ Slot size _____ Set from _____ ft. to _____ ft.

(8) WATER LEVEL: Completed well.

[illegible] level 101 ft. below land surface Date 3-1-68
Artesian pressure _____ lbs. per square inch Date

(9) WELL TESTS:

Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☒ No If yes, by whom?
[illegible]: _____ gal./min. with _____ ft. drawdown after _____ hrs.
" " " "
" " " "
Bailer test 30 gal./min. with 95 ft. drawdown after 1 hrs.
Artesian flow _____ g.p.m. Date
Temperature of water Was a chemical analysis made? ☐ Yes ☒ No

(10) CONSTRUCTION:

Well seal—Material used
Depth of seal _____ ft.
Diameter of well bore to bottom of seal _____ in.
Were any loose strata cemented off? ☐ Yes ☐ No Depth
Was a drive shoe used? ☐ Yes ☐ No
Did any strata contain unusable water? ☐ Yes ☐ No
Type of water? depth of strata
Method of sealing strata off
Was well gravel packed? ☐ Yes ☐ No Size of gravel:
Gravel placed from _____ ft. to _____ ft.

(11) LOCATION OF WELL:

County Lane Driller's well number 155 (old: 33)
NW ¼ SW ¼ Section 19 T. 18S R. 3W W.M.
Bearing and distance from section or subdivision corner

(12) WELL LOG:

Diameter of well below casing 6"
Depth drilled 95 ft. Depth of completed well 215 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level as drilling proceeds. Note drilling rates.

MATERIAL	From	To	SWL
Old well no. 33	0	120	97
Hard blackrock	120	215	101

Work started 2-27 1968 Completed 3-1 1968
Date well drilling machine moved off of well 3-2 1968

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] Harvey A. Mayo (Drilling Machine Operator) Date 3-4, 1968
Drilling Machine Operator's License No. 307

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
NAME Miller-Jensen Company (Person, firm or corporation) (Type or print)
Address P O Box 257, Eugene, Oregon 97402
[Signed] Harvey A. Miller Owner (Water Well Contractor)
Contractor's License No. 179 Date Mar 4 1968, 19

(USE ADDITIONAL SHEETS IF NECESSARY)

LANE 16360.tif printed by Graphic Workshop

NOTICE TO WATER WELL CONTRACTOR: The original and first copy of this report are to be filed with the STATE ENGINEER, SALEM, OREGON 97310, within 30 days from the date of well completion.

RECEIVED MAR 10 1965 STATE ENGINEER SALEM, OREGON

WATER WELL REPORT

STATE OF OREGON (Please type or print)

State Well No. 18/3w-19M

State Permit No. LANE 16361

(1) OWNER:

Name Bob A. Johnson

Address 2921 Adams St.
Eugene, Oregon

(2) LOCATION OF WELL:

County Lane Driller's well number 33

NW ¼ SW ¼ Section 19 T. 18S R. 3W W.M.

Bearing and distance from section or subdivision corner

(3) TYPE OF WORK (check):

New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in Item 12.

(4) PROPOSED USE (check):

Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) TYPE OF WELL:

Rotary ☐ Driven ☐
Cable ☒ Jetted ☐
Dug ☐ Bored ☐

(6) CASING INSTALLED: Threaded ☐ Welded ☒

6 " Diam. from 0 ft. to 42 ft. Gage .250

" Diam. from ft. to ft. Gage

" Diam. from ft. to ft. Gage

(7) PERFORATIONS: Perforated? ☐ Yes ☒ No

Type of perforator used

Size of perforations in. by in.

perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(8) SCREENS: Well screen installed? ☐ Yes ☒ No

Manufacturer's Name

Type Model No.

Diam. Slot size Set from ft. to ft.

Diam. Slot size Set from ft. to ft.

(9) CONSTRUCTION:

Well seal—Material used in seal Bentonite

Depth of seal 12 ft. Was a packer used? No

Diameter of well bore to bottom of seal 10 in.

Were any loose strata cemented off? ☐ Yes ☒ No Depth

Was a drive shoe used? ☒ Yes ☐ No

Was well gravel packed? ☐ Yes ☒ No Size of gravel:

Gravel placed from ft. to ft.

Did any strata contain unusable water? ☐ Yes ☒ No

Type of water? depth of strata

Method of sealing strata off

(10) WATER LEVELS:

Static level 60 ft. below land surface Date 3-8-65

Artesian pressure — lbs. per square inch Date

(11) WELL TESTS: Drawdown is amount water level is lowered below static level

Was a pump test made? ☐ Yes ☒ No If yes, by whom?

Yield: gal./min. with ft. drawdown after hrs.

" " " "

" " " "

Bailer test 20 gal./min. with 20 ft. drawdown after 2 hrs.

Artesian flow g.p.m. Date

Temperature of water Was a chemical analysis made? ☐ Yes ☒ No

(12) WELL LOG: Diameter of well below casing

Depth drilled 120 ft. Depth of completed well 120 ft.

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
Brown Clay	0	5
Black Shale	5	34
Black Rock	34	120 ft

Work started 3-5- 1965 Completed 3-8- 1965

Date well drilling machine moved off of well 3-8-65 19

(13) PUMP:

Manufacturer's Name Jacuzzi

Type: Submersible H.P. 1½

Water Well Contractor's Certification:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Miller-Jensen Company (Person, firm or corporation) (Type or print)

Address 2880 Elmira Road, Eugene

Drilling Machine Operator's License No. 307

[Signed] Harry A. Miller (Water Well Contractor) Owner

Contractor's License No. 179 Date 3-9-65 19

(USE ADDITIONAL SHEETS IF NECESSARY)

LANE 16361.tif printed by Graphic Workshop

STATE OF OREGON

WATER WELL REPORT

(as required by ORS 537.765)

RECEIVED
SEP 10 1986
WATER RESOURCES DEPT
SALEM, OREGON

18s/4W-24cb
LANE 17375

Owner's Well Number

(1) OWNER:

Name RICHARD SCOTT
Address 29290 Mc.TAVISCH LN.
City EUGENE State ORE. Zip 97402

(2) TYPE OF WORK:

☒ New Well ☐ Deepen ☐ Recondition ☐ Abandon

(3) DRILL METHOD:

☒ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Other

(4) PROPOSED USE:

☒ Domestic ☐ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other

(5) BORE HOLE CONSTRUCTION:

Depth of Completed Well 560 ft.
Special Standards data of approval

HOLE Diameter	From	To	SEAL Material	From	To	Amount sacks or pounds
10	0	19	cement	0	19	4 sacks

How was seal placed? Method ☐ A ☐ B ☒ C ☐ D ☐ E
☐ Other
Backfill placed from ft. to ft. Material
Gravel placed from ft. to ft. Size of gravel

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	6" xxxx	+1	19	.250	☒	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Final location of shoe(s)

(7) PERFORATIONS/SCREENS:

☐ Perforations Method
☐ Screens Type Material

Perforations From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
						☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour

☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal/min	Pumping level	Drill stem at	Time
3		555	½ hr
			1 hr

Temperature of water Depth Artesian Flow Found
Was a water analysis done? ☐ Yes By whom
Did any strata contain water not suitable for intended use? ☐ Too little
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other
Depth of strata:

(9) LOCATION OF WELL by legal description:

County LANE Latitude ' " Longitude ' "
Township 18 S N or S, Range 4 W E or W, WM.
Section 24 NW ¼ SW ¼
Tax Lot Lot Block Subdivision
Street Address of Well (or nearest address) Same

(10) STATIC WATER LEVEL:

40 ft. below land surface. Date 8-4-86
Artesian pressure lb. per square inch. Date

(11) WELL LOG:

Ground elevation

Material	From	To	WB?	SWL
Top soil	0	2		
Yellow clay	2	10		
Sandstone (brown)	10	12		
Blue-gray sed. rock	12	75	yes	40
Brown sed. rock	75	90		
Gray sed. rock	90	560		
3 gpm. by 63'				

Date started 7-31-86 Completed 8-4-86

(unbonded) Water Well Constructor Certification:

I constructed this well in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.

Signed [signature] Lic. 1335 Date 8-4-86

(bonded) Water Well Constructor Certification:

I accept responsibility for construction of this well and its compliance with all Oregon water well standards. This report is true to the best of my knowledge and belief.

Signed Dell Page Lic. 104 Date 8-4-86

Company DELL PAGE WELL DRILLING INC. Job No. 123-86

0899C 10/85

LANE 17375.tif printed by Graphic Workshop

RECEIVED LANE
OCT - 3 1988 17376 18S/4W/24
WATER RESOURCES DEPT (START CARD) # 6593

STATE OF OREGON
WATER WELL REPORT
(as required by ORS 537.765)

(1) OWNER: Well Number
Name Carl Hansen
Address 2840 Lincoln St.
City Eugene State Or Zip 97401

(2) TYPE OF WORK:
☒ New Well ☐ Deepen ☐ Recondition ☐ Abandon

(3) DRILL METHOD
☒ Rotary Air ☐ Rotary Mud ☐ Cable
☐ Other

(4) PROPOSED USE:
☒ Domestic ☐ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other

(5) BORE HOLE CONSTRUCTION:
Special Construction approval Yes ☐ No ☒ Depth of Completed Well 145 ft.
Explosives used Yes ☐ No ☒ Type Amount

HOLE Diameter	From	To	SEAL Material	From	To	Amount sacks or pounds
10"	0	18	Cement	0	18	5 sacks
6"	18	145				

How was seal placed: Method ☐ A ☐ B ☒ C ☐ D ☐ E
☐ Other
Backfill placed from ft. to ft. Material
Gravel placed from ft. to ft. Size of gravel

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	6"	+1	19	250	☒	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Final location of shoe(s)

(7) PERFORATIONS/SCREENS:
☐ Perforations Method
☐ Screens Type Material

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
						☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour
☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
13	110	145	1 hr.
could fluctuate			

Temperature of water Depth Artesian Flow Found
Was a water analysis done? ☐ Yes By whom
Did any strata contain water not suitable for intended use? ☐ Too little
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other not tested
Depth of strata:

(9) LOCATION OF WELL by legal description:
County Lane Latitude Longitude
Township 18S N or S, Range 4W E or W, WM.
Section 24 ¼ ¼
Tax Lot 404 Lot Block Subdivision
Street Address of Well (or nearest address) 31300 Camas Lane
Eugene, Or.

(10) STATIC WATER LEVEL:
35 ft. below land surface. Date 9-12-88
Artesian pressure lb. per square inch. Date

(11) WATER BEARING ZONES:
Depth at which water was first found 123'

From	To	Estimated Flow Rate	SWL
123'	135'	13 gpm	35'

(12) WELL LOG: Ground elevation

Material	From	To	SWL
Topsoil	0	1	
Brown Clay, Boulders	1	2	
Gray Brown Basalt	2	29	
Gray Green Brown Cong.	29	145	35'

Date started 9-12-88. Completed 9-12-88

(unbonded) Water Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.
Signed Bob Murphy WWC Number 1344
Date 9-12-88

(bonded) Water Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. all work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.
Signed Casey O Jones WWC Number 569
Date 9-12-88

ORIGINAL & FIRST COPY - WATER RESOURCES DEPARTMENT SECOND COPY - CONSTRUCTOR THIRD COPY - CUSTOMER 9302C 2/88

WATER WELL REPORT
STATE OF OREGON

State Well No. 18S/4W-24

SEP 23 1983

State Permit No. LANE 17377

PLEASE TYPE or PRINT IN INK.

(1) OWNER:
Name Jane Vogel
Address 214 Crest Drive
City Eugene, State Or.

(2) TYPE OF WORK (check):
New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary Air ☒ Driven ☐
Rotary Mud ☐ Dug ☐
Cable ☐ Bored ☐

(4) PROPOSED USE (check):
Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐
Thermal ☐ Withdrawal ☐ Reinjection ☐

(5) CASING INSTALLED:
Steel ☒ Threaded ☐ Plastic ☐ Welded ☐
6" Diam. from +1 ft. to 19 ft. Gauge .250
" Diam. from ft. to ft. Gauge

LINER INSTALLED:
" Diam. from ft. to ft. Gauge

(6) PERFORATIONS:
Perforated? ☐ Yes ☒ No
Type of perforator used
Size of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS:
Well screen installed? ☐ Yes ☒ No
Manufacturer's Name
Type Model No.
Diam. Slot Size Set from ft. to ft.
Diam. Slot Size Set from ft. to ft.

(8) WELL TESTS:
Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☒ No If yes, by whom?
Yield: gal/min. with ft. drawdown after hrs.
" " " "
Air test 6+ gal./min. with drill stem at 165 ft. 1 hrs.
Bailer test gal/min. with ft. drawdown after hrs.
Artesian flow g.p.m.
Temperature of water Depth artesian flow encountered ft.

(9) CONSTRUCTION:
Special standards: Yes ☐ No ☒
Well seal—Material used Portland Cement
Well sealed from land surface to 19 ft.
Diameter of well bore to bottom of seal 8 in.
Diameter of well bore below seal 6 in.
Number of sacks of cement used in well seal 4 sacks
How was cement grout placed? Preasure Grouted

Was pump installed? No Type HP Depth ft.
Was a drive shoe used? ☐ Yes ☒ No Plugs Size: location ft.
Did any strata contain unusable water? ☐ Yes ☒ No
Type of Water? depth of strata
Method of sealing strata off
Was well gravel packed? ☐ Yes ☒ No Size of gravel:
Gravel placed from ft. to ft.

(10) LOCATION OF WELL:
County Lane Driller's well number
¼ ¼ Section 24 T. 18S R. 4W W.M.
Tax Lot # Lot Blk Subdivision
Address at well location: Camas Lane off So. Willamette
.8 Mile C.T.Y Limit Eugene, Or. Right Hand Side

(11) WATER LEVEL: Completed well.
Depth at which water was first found 55 ft.
Static level 70 ft. below land surface. Date 9-7-83
Artesian pressure lbs. per square inch. Date

(12) WELL LOG:
Diameter of well below casing 6"
Depth drilled 165 ft. Depth of completed well 165 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
Top Soil	0	1	
Brown Clay, Fractured Basalt	1	7	
Red Cinders	7	10	
Grey Green Conq.	10	31	
Red Cinders	31	34	
Basalt	34	50	
Red Brown Cinders	50	54	
Basalt	54	75	
Red Cinders	75	80	
Grey Brown Basalt	80	137	
Red Brown Cinders	137	147	
Grey Brown Basalt	147	165	

Work started 9-7 19 83 Completed 9-7 19 83
Date well drilling machine moved off of well 9-7 19 83

(unbonded) Water Well Constructor Certification (if applicable):
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] Robert J. Mimmaw Date 9-7, 19 83

Bonded Water Well Constructor Certification:
Bond 45B453863 (number) Issued by: United Pacific Ins. (Surety Company Name)
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name Casey Jones Well Drilling (Person, (first or corporation)) (Type or print)
Address 37145 Immigrant Road Pleasant Hill, Or.
[Signed] Casey L Jones (Water Well Constructor)
Date 9-7, 19 83

NOTICE TO WATER WELL CONSTRUCTOR
The original and first copy of this report are to be filed with the WATER RESOURCES DEPARTMENT, SALEM, OREGON 97310 within 30 days from the date of well completion.

SP-46292-880

LANE 17377.tif printed by Graphic Workshop

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the

STATE ENGINEER, SALEM, OREGON 97310
within 30 days from the date of well completion.

WATER WELL REPORT
STATE OF OREGON
(Please type or print)
(Do not write above this line)

RECEIVED LANE 17378
AUG 9 1976
WATER RESOURCES DEPT.
SALEM, OREGON

State Well No. [illegible]
State Permit No. 185/44124

(1) OWNER:
Name: Ted Larson (R.W.)
Address: South Willamette St. Eugene, Oregon

(2) TYPE OF WORK (check):
New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary ☐ Driven ☐
Cable ☐ Jetted ☐
Dug ☐ Bored ☐

(4) PROPOSED USE (check):
Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) CASING INSTALLED:
None installed
Threaded ☐ Welded ☐
____" Diam. from ____ ft. to ____ ft. Gage ____
____" Diam. from ____ ft. to ____ ft. Gage ____
____" Diam. from ____ ft. to ____ ft. Gage ____

(6) PERFORATIONS:
Perforated? ☐ Yes ☐ No.
Type of perforator used
Size of perforations ____ in. by ____ in.
____ perforations from ____ ft. to ____ ft.
____ perforations from ____ ft. to ____ ft.
____ perforations from ____ ft. to ____ ft.

(7) SCREENS:
Well screen installed? ☐ Yes ☐ No
Manufacturer's Name
Type ____ Model No.
Diam. ____ Slot size ____ Set from ____ ft. to ____ ft.
Diam. ____ Slot size ____ Set from ____ ft. to ____ ft.

(8) WELL TESTS:
Drawdown is amount water level is lowered below static level
Was a pump test made? ☒ Yes ☐ No If yes, by whom? Driller
Yield: 6 gal./min. with 105 ft. drawdown after 1 hrs.
" " " "
" " " "
Bailer test ____ gal./min. with ____ ft. drawdown after ____ hrs.
Artesian flow ____ g.p.m.
Temperature of water ____ Depth artesian flow encountered ____ ft.

(9) CONSTRUCTION:
Well seal—Material used
Well sealed from land surface to ____ ft.
Diameter of well bore to bottom of seal ____ in.
Diameter of well bore below seal ____ in.
Number of sacks of cement used in well seal ____ sacks
Number of sacks of bentonite used in well seal ____ sacks
Brand name of bentonite
Number of pounds of bentonite per 100 gallons of water ____ lbs./100 gals.
Was a drive shoe used? ☐ Yes ☐ No Plugs ____ Size: location ____ ft.
Did any strata contain unusable water? ☐ Yes ☐ No
Type of water? ____ depth of strata
Method of sealing strata off
Was well gravel packed? ☐ Yes ☐ No Size of gravel: ____
Gravel placed from ____ ft. to ____ ft.

(10) LOCATION OF WELL:
County Lane Driller's well number 1891-CP
¼ S.E. ¼ Section 24 T 18 S R 4 W W.M.
Bearing and distance from section or subdivision corner

(11) WATER LEVEL: Completed well
Depth at which water was first found 155 ft.
Static level 50 ft. below land surface. Date 7-23-76
Artesian pressure -- lbs. per square inch. Date --

(12) WELL LOG:
Diameter of well below casing —
Depth drilled 452 ft. Depth of completed well 452 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. *Report each change in position of Static Water Level and indicate principal water-bearing strata.*

MATERIAL	From	To	SWL
Soft blue rock	0	4	
Hard black basalt	4	32	
Red lava rock	32	36	
Hard black basalt	36	64	
Red lava rock	64	67	
Hard black basalt	67	315	50
Blue shale	315	452	50

Well was abandoned and filled with bentonite from 30' to 452' then cement grouted from 0 to 30'.

Work started 7-22 19 76 Completed 7-27 19 76
Date well drilling machine moved off of well 7-27 19 76

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] [signature] (Drilling Machine Operator) Date 8-3 19 76
Drilling Machine Operator's License No. 717

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name Carter's Drilling & Pump Service (Person, firm or corporation) (Type or print)
Address P. O. Box 46 Springfield, Or 97477
[Signed] [signature] (Water Well Contractor)
Contractor's License No. 126 Date 8-3 19 76

(USE ADDITIONAL SHEETS IF NECESSARY)

SP*45656-119

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NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the WATER RESOURCES DEPARTMENT, SALEM, OREGON 97310 within 30 days from the date of well completion.

RECEIVED
AUG 10 1977
WATER RESOURCES DEPT.
SALEM, OREGON

WELL REPORT
STATE OF OREGON
(Please type or print)
(Do not write above this line)

RECEIVED
FEB - 7 1978
WATER RESOURCES DEPT.
SALEM, OREGON

State Well No. ~~45/34~~
State Permit No. 85/4W-24
LANE 17379

(1) OWNER:
Name Peter A. Dobras
Address 20731 Marion Ave
Saratoga, Ca.

(2) TYPE OF WORK (check):
New Well [X] Deepening [ ] Reconditioning [ ] Abandon [ ]
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary [X] Driven [ ]
Cable [ ] Jetted [ ]
Dug [ ] Bored [ ]

(4) PROPOSED USE (check):
Domestic [X] Industrial [ ] Municipal [ ]
Irrigation [ ] Test Well [ ] Other [ ]

(5) CASING INSTALLED:
Threaded [ ] Welded [X]
6" Diam. from 0 ft. to 20 ft. Gage .250
" Diam. from ft. to ft. Gage
" Diam. from ft. to ft. Gage

(6) PERFORATIONS:
Perforated? [ ] Yes [X] No.
Type of perforator used
Size of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS:
Well screen installed? [ ] Yes [X] No
Manufacturer's Name
Type Model No.
Diam. Slot size Set from ft. to ft.
Diam. Slot size Set from ft. to ft.

(8) WELL TESTS:
Drawdown is amount water level is lowered below static level
Was a pump test made? [ ] Yes [X] No If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
" " "
Tested w/air 17½ gpm
Bailer test gal./min. with 490 ft. drawdown after 1 hrs.
Artesian flow g.p.m.
Temperature of water Depth artesian flow encountered ft.

(9) CONSTRUCTION:
Well seal—Material used Cement
Well sealed from land surface to 19 ft.
Diameter of well bore to bottom of seal 10 in.
Diameter of well bore below seal 6 in.
Number of sacks of cement used in well seal 4 sacks
How was cement grout placed? poured from barrel
Was a drive shoe used? [ ] Yes [X] No Plugs Size: location ft.
Did any strata contain unusable water? [ ] Yes [X] No
Type of water? depth of strata
Method of sealing strata off
Was well gravel packed? [ ] Yes [X] No Size of gravel:
Gravel placed from ft. to ft.

(10) LOCATION OF WELL:
County Lane Driller's well number
¼ ¼ Section 18 T. 18S R. 4W W.M.
Bearing and distance from section or subdivision corner

(11) WATER LEVEL: Completed well.
Depth at which water was first found 214 ft.
Static level 30 ft. below land surface. Date 7-6-77
Artesian pressure lbs. per square inch. Date

(12) WELL LOG:
Diameter of well below casing 6"
Depth drilled 520 ft. Depth of completed well 220 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
Top Soil	0	3	
Brown Clay	3	6	
Red basalt	6	12	
Blue basalt	12	45	
Red & blue basalt	45	55	
Blue basalt	55	90	
Red cinders	90	95	
Blue basalt	95	130	
Red cinders	130	160	
Blue basalt	160	220	
Red Claystone	220	225	
Blue Sandy Claystone	225	230	
Blue Claystone	230	360	
Blue sandstone	360	408	
Blue Claystone	408	475	
Blue basalt	475	495	
Blue ~~basalt~~ & blue clayst.	495	520	

Work started 7-1-77 19 Completed 7-6-77 19
Date well drilling machine moved off of well 7-6 19 77

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] Robert A. Cates (Drilling Machine Operator) Date 7/11, 19 77
Drilling Machine Operator's License No. 948

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name Casey Jones well Drilling (Person, firm or corporation) (Type or print)
Address 3715 Emmaryn Road Ph. 1/2
[Signed] Casey L Jones (Water Well Contractor)
Contractor's License No. 559 Date 8-1-77, 19

(USE ADDITIONAL SHEETS IF NECESSARY)

SP*45856-119

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NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the

STATE ENGINEER, SALEM, OREGON 97310
within 30 days from the date of well completion.

WATER WELL REPORT
STATE OF OREGON

(Please type or print)

(Do not write above this line)

RECEIVED
AUG 18 1976
WATER RESOURCES DEPT.
SALEM, OREGON

State Well No. LANE 17320

State Permit No. 18S/4W 24

(1) OWNER:

Name Ted Larsen #2 (R.W.)

Address 2855 Alta Vista Court

Eugene, Oregon

(2) TYPE OF WORK (check):

New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:

Rotary ☒ Driven ☐
Cable ☐ Jetted ☐
Dug ☐ Bored ☐

(4) PROPOSED USE (check):

Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) CASING INSTALLED:

Threaded ☐ Welded ☐

6 " Diam. from 0 ft. to 20 ft. Gage .250

" Diam. from ft. to ft. Gage

" Diam. from ft. to ft. Gage

(6) PERFORATIONS:

Perforated? ☐ Yes ☒ No.

Type of perforator used

Size of perforations in. by in.

perforations from ft. to ft.

perforations from ft. to ft.

perforations from ft. to ft.

(7) SCREENS:

Well screen installed? ☐ Yes ☒ No

Manufacturer's Name

Type Model No.

Diam. Slot size Set from ft. to ft.

Diam. Slot size Set from ft. to ft.

(8) WELL TESTS:

Drawdown is amount water level is lowered below static level

Was a pump test made? ☒ Yes ☐ No If yes, by whom? Driller

Yield: 3/4 gal./min. with 189 ft. drawdown after 1 hrs.

" " " "

" " " "

Bailer test No gal./min. with ft. drawdown after hrs.

Artesian flow g.p.m.

Temperature of water 53° Depth artesian flow encountered ft.

(9) CONSTRUCTION:

Well seal—Material used Portland Cement

Well sealed from land surface to 20 ft.

Diameter of well bore to bottom of seal 9-7/8 in.

Diameter of well bore below seal 6 in.

Number of sacks of cement used in well seal 5 sacks

Number of sacks of bentonite used in well seal --- sacks

Brand name of bentonite ---

Number of pounds of bentonite per 100 gallons of water --- lbs./100 gals.

Was a drive shoe used? ☒ Yes ☐ No Plugs Size: location ft.

Did any strata contain unusable water? ☐ Yes ☒ No

Type of water? depth of strata

Method of sealing strata off

Was well gravel packed? ☐ Yes ☒ No Size of gravel:

Gravel placed from ft. to ft.

(10) LOCATION OF WELL:

County Lane Driller's well number 1926-C.P.

¼ S.E. ¼ Section 24 T. 18-S R. 4-W W.M.

Bearing and distance from section or subdivision corner

(11) WATER LEVEL: Completed well.

Depth at which water was first found 58 ft.

Static level 11 ft. below land surface. Date 8/6/76

Artesian pressure --- lbs. per square inch. Date ---

(12) WELL LOG:

Diameter of well below casing 6

Depth drilled 200 ft. Depth of completed well 200 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
Top Soil	0	3	---
Medium Cobbles	3	5	---
Hard Blue Rock	5	154	58
Blue Rock	154	200	58

Work started 8/6 19 76 Completed 8/9 19 76

Date well drilling machine moved off of well 8/9 19 76

Drilling Machine Operator's Certification:

This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.

[Signed] (Drilling Machine Operator) Date 8/12 19 76

Drilling Machine Operator's License No. 717

Water Well Contractor's Certification:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Name CARTER'S DRILLING & PUMP SERVICE (Person, firm or corporation) (Type or print)

Address P.O. Box 167, Springfield, Oregon 97477

[Signed] (Water Well Contractor)

Contractor's License No. 126 Date 8/12 19 76

(USE ADDITIONAL SHEETS IF NECESSARY)

SP*45826-119

2

Lane 2421

OCT 11 1991

WATER RESOURCES DEPT.
SALEM, OREGON

18S/3W/9 cb

STATE OF OREGON
WATER WELL REPORT
(as required by ORS 537.765)

(START CARD) # 29739

(1) OWNER:
Well Number
Name DEREK JAROS
Address 207 WEST 52ND AVENUE
City EUGENE State OR Zip 97402

(2) TYPE OF WORK:
☒ New Well ☐ Deepen ☐ Recondition ☐ Abandon

(3) DRILL METHOD
☒ Rotary Air ☐ Rotary Mud ☐ Cable
☐ Other

(4) PROPOSED USE:
☒ Domestic ☐ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other

(5) BORE HOLE CONSTRUCTION:
Special Construction approval Yes ☐ No ☒ Depth of Completed Well 510 ft.
Explosives used Yes ☐ No ☒ Type Amount

HOLE Diameter	From	To	SEAL Material	From	To	Amount sacks or pounds
10"	0	98	CEMENT	0	100'	25 SACKS
6'	98'	510'				

How was seal placed: Method ☐ A ☐ B ☒ C ☐ D ☐ E
☐ Other
Backfill placed from ft. to ft. Material
Gravel placed from ft. to ft. Size of gravel

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	6"	+1	99'	.250	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:	4½"	10'	510'		☐	☒	☒	☐
					☐	☐	☐	☐

Final location of shoe(s) NONE USED

(7) PERFORATIONS/SCREENS:
☒ Perforations Method SAW - IN
☐ Screens Type Material

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
190'	510'	1/8X6	350	4½"		☐	☒
						☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour
☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
5		510'	1 hr.

Temperature of water 56° Depth Artesian Flow Found
Was a water analysis done? ☐ Yes By whom
Did any strata contain water not suitable for intended use? ☐ Too little
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other
Depth of strata:

(9) LOCATION OF WELL by legal description:
County LANE Latitude Longitude
Township 18S N or S. Range 03W E or W, WM.
Section 19 NW ¼ SW ¼
Tax Lot 3506 Lot Block Subdivision
Street Address of Well (or nearest address) SO. WILLAMETTE ST.,
EUGENE, OR 97405

(10) STATIC WATER LEVEL:
180 ft. below land surface. Date 10/4/91
Artesian pressure lb. per square inch. Date

(11) WATER BEARING ZONES:
Depth at which water was first found 190'

From	To	Estimated Flow Rate	SWL
190'	191'	5 GPM	180'

(12) WELL LOG:
Ground elevation

Material	From	To	SWL
BROWN CLAY & BOULDERS	0	19'	
BROWN SANDSTONE	19'	27'	
SOFT BLUE CLAYSTONE	27'	43'	
FIRM BROWN CLAYSTONE	43'	96'	
HARD BLUE GRAY BASALT	96'	510'	180'

Date started 9/28/91 Completed 10/4/91

(unbonded) Water Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.

WWC Number
Signed Date

(bonded) Water Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. all work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.

WWC Number 126
Signed James D. Cox Date 10/9/91

ORIGINAL & FIRST COPY - WATER RESOURCES DEPARTMENT SECOND COPY - CONSTRUCTOR THIRD COPY - CUSTOMER 9539C 3/91

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2

STATE OF OREGON LANE 2778
WATER WELL REPORT
(as required by ORS 537.765)

18/3w/19cb

(START CARD) # 35178

(1) OWNER: Well Number
Name ERIC VANCE
Address 31408 CAMAS LN.
City EUGENE State OR Zip 97405

(2) TYPE OF WORK:
☒ New Well ☐ Deepen ☐ Recondition ☐ Abandon

(3) DRILL METHOD:
☒ Rotary Air ☐ Rotary Mud ☐ Cable
☐ Other

(4) PROPOSED USE:
☒ Domestic ☐ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other

(5) BORE HOLE CONSTRUCTION:
Special Construction approval ☐ Yes ☒ No Depth of Completed Well 295 ft.
Explosives used ☐ Yes ☒ No Type Amount

HOLE Diameter	From	To	SEAL Material	From	To	Amount sacks or pounds
10	0	19	CEMENT	0	19	6 SAX
6	19	285				

How was seal placed: Method ☐ A ☐ B ☒ C ☐ D ☐ E
☐ Other
Backfill placed from ft. to ft. Material
Gravel placed from ft. to ft. Size of gravel

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	6	+1	19	250	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Final location of shoe(s)

(7) PERFORATIONS/SCREENS:
☐ Perforations Method
☐ Screens Type Material

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
						☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour
☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
1		295	1 hr.

Temperature of Water 54° Depth Artesian Flow Found
Was a water analysis done? ☐ Yes By whom
Did any strata contain water not suitable for intended use? ☐ Too little
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other
Depth of strata:

(9) LOCATION OF WELL by legal description:
County LANE Latitude Longitude
Township 18S N or S, Range 3W E or W, WM.
Section 19 NW ¼ SW ¼
Tax Lot 405 Lot Block Subdivision
Street Address of Well (or nearest address)
31408 CAMAS LN.

(10) STATIC WATER LEVEL:
90 ft. below land surface. Date 3/20/92
Artesian pressure lb. per square inch. Date

(11) WATER BEARING ZONES:
Depth at which water was first found 165

From	To	Estimated Flow Rate	SWL
165	166	1	90

(12) WELL LOG:
Ground elevation

Material	From	To	SWL
CLAY & BOLDERS	0	4	
BLUE ROCK (BASALT)	4	60	
BLUE ROCK	60	165	
RED SHALE	165	190	
BLUE BASALT	190	210	
RED SHALE	210	240	
BLUE ROCK	240	285	
RED SHALE	285	295	90

Date started 3/18 Completed 3/20/92

(unbonded) Water Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.

WWC Number
Signed Date

(bonded) Water Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.

WWC Number 562
Signed Frank Wilson Date 3/21/92

ORIGINAL & FIRST COPY - WATER RESOURCES DEPARTMENT SECOND COPY - CONSTRUCTOR THIRD COPY - CUSTOMER 9809C 10/91

RECEIVED
SEP 24 1993
WATER RESOURCES DEPT.
SALEM, OREGON

LANE 4166

18S/3W/19cc

STATE OF OREGON
WATER WELL REPORT
(as required by ORS 537.765)

(START CARD) # W57508

(1) OWNER: Well Number 1
Name Bob Bennett
Address 85334 So. Willamette St.
City Eugene State OR Zip 97405.

(2) TYPE OF WORK:
☒ New Well ☐ Deepen ☐ Recondition ☐ Abandon

(3) DRILL METHOD:
☒ Rotary Air ☐ Rotary Mud ☐ Cable
☐ Other

(4) PROPOSED USE:
☒ Domestic ☐ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other

(5) BORE HOLE CONSTRUCTION:
Special Construction approval ☐ Yes ☒ No Depth of Completed Well 475 ft.
Explosives used ☐ Yes ☒ No Type Amount

HOLE Diameter	From	To	SEAL Material	From	To	Amount sacks or pounds
10"	0	18'	Cement	0	18'	6 sacks
6"	18'	475'				

How was seal placed: Method ☐ A ☐ B ☒ C ☐ D ☐ E
☐ Other
Backfill placed from ft. to ft. Material
Gravel placed from ft. to ft. Size of gravel

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	6"	+1½'	18½'	.250	☒	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Final location of shoe(s) 18½'

(7) PERFORATIONS/SCREENS:
☐ Perforations Method
☐ Screens Type Material

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
						☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour
☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
3/4	434'	475'	1 hr.
Could fluctuate			

Temperature of Water 57 Depth Artesian Flow Found
Was a water analysis done? ☐ Yes By whom not tested
Did any strata contain water not suitable for intended use? ☐ Too little
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other
Depth of strata:

(9) LOCATION OF WELL by legal description:
County Lane Latitude Longitude
Township 18S N or S. Range 3W E or W. WM.
Section 19 SW ¼ SW ¼
Tax Lot 3401 Lot Block Subdivision
Street Address of Well (or nearest address) Next to 85334 So. Willamette, Eugene OR.

(10) STATIC WATER LEVEL:
41 ft. below land surface. Date 9-9-93
Artesian pressure lb. per square inch. Date

(11) WATER BEARING ZONES:
Depth at which water was first found 160'

From	To	Estimated Flow Rate	SWL
160'	165'	3/4 gpm	41'

(12) WELL LOG:
Ground elevation

Material	From	To	SWL
Topsoil	0	4'	
Clay	4'	10'	
Brown claystone	10'	50'	
Basalt	50'	85'	
Brown, gray claystone	85'	100'	
Basalt	100'	115'	
Brown claystone	115'	130'	
Basalt	130'	160'	
Brown, gray claystone	160'	175'	41'
Gray sandstone	175'	185'	
Brown claystone	185'	200'	
Gray, green, brown congl.	200'	445'	
Brwon claystone	445'	455'	
	455'	475'	

Date started 9-8-93 Completed 9-9-93

(unbonded) Water Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.
Signed WWC Number 1564 Date 9-9-93

(bonded) Water Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.
Signed Cooley & Jones Inc. WWC Number 154 Date 9-9-93

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STATE OF OREGON JAN 31 1994

WATER WELL REPORT

(as required by ORS 537.765) WATER RESOURCES DEPT. SALEM, OREGON

LANE 4470

18s/3w/19cc

(START CARD) # W60194

(1) OWNER: Well Number

Name Terri Anderson

Address 70 Ridgeline Dr.

City Eugene State OR Zip 97405

(2) TYPE OF WORK:

☒ New Well ☐ Deepen ☐ Recondition ☐ Abandon

(3) DRILL METHOD:

☒ Rotary Air ☐ Rotary Mud ☐ Cable

☐ Other

(4) PROPOSED USE:

☒ Domestic ☐ Community ☐ Industrial ☐ Irrigation

☐ Thermal ☐ Injection ☐ Other

(5) BORE HOLE CONSTRUCTION:

Special Construction approval ☐ Yes ☒ No Depth of Completed Well 130 ft.

Explosives used ☐ Yes ☒ No Type Amount

HOLE Diameter	From	To	SEAL Material	From	To	Amount sacks or pounds
10"	0	78'	Cement	0	78'	29 sacks
6"	78'	130'				

How was seal placed: Method ☐ A ☐ B ☒ C ☐ D ☐ E

☐ Other

Backfill placed from ft. to ft. Material

Gravel placed from ft. to ft. Size of gravel

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	6"	+1'	79'	.250	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:	4½"	-4'	130'	PVC	☐	☒	☒	☐
					☐	☐	☐	☐

Final location of shoe(s) 79'

(7) PERFORATIONS/SCREENS:

☒ Perforations Method SAW

☐ Screens Type Material

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
70'	130'	1/8x2	600	4½"		☐	☒
						☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour

☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
16½	75'	130'	1 hr.
Could flucuate			

Temperature of Water 57° Depth Artesian Flow Found

Was a water analysis done? ☐ Yes By whom not tested

Did any strata contain water not suitable for intended use? ☐ Too little

☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other

Depth of strata:

(9) LOCATION OF WELL by legal description:

County Lane Latitude Longitude

Township 18S N or S. Range 3W E or W. WM.

Section 19 NE ¼ SW ¼

Tax Lot 1511 Lot Block Subdivision

Street Address of Well (or nearest address) Next to 31613 Pruett Rd.

(10) STATIC WATER LEVEL:

55 ft. below land surface. Date 1-4-93

Artesian pressure lb. per square inch. Date

(11) WATER BEARING ZONES:

Depth at which water was first found 108'

From	To	Estimated Flow Rate	SWL
108'	109'	16½ gpm	55'

(12) WELL LOG:

Ground elevation

Material	From	To	SWL
Topsoil	0	2'	
Tan clay	2'	4'	
Clay & Boulders	4'	20'	
Tan clay	20'	35'	
Tan & brown sandstone	35'	55'	
Gray sandstone	55'	68'	
Tan, brown sandstone	68'	82'	
Green sandstone	82'	89'	
Tan & brown sandstone	89'	103'	
Blue sandstone	103'	106'	
Tan & brown sandstone	106'	111'	55'
Blue sandstone	111'	130'	

Date started 12-30-93 Completed 1-4-94

(unbonded) Water Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.

Signed WWC Number 1617 Date 1-4-94

(bonded) Water Well Constructor Certification:

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.

Signed WWC Number 559 Date 1-4-94

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LANE 4634

STATE OF OREGON
WATER WELL REPORT
(as required by ORS 537.765)

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MAY - 9 1994
WATER RESOURCES DEPT.
SALEM, OREGON

18/3W/19cd
(START CARD) # 54839

(1) OWNER: Well Number
Name James W. Savage
Address 31771 Fox Hollow Road
City Eugene State OR Zip 97405

(2) TYPE OF WORK:
☒ New Well ☐ Deepen ☐ Recondition ☐ Abandon

(3) DRILL METHOD:
☒ Rotary Air ☐ Rotary Mud ☐ Cable
☐ Other

(4) PROPOSED USE:
☒ Domestic ☐ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other

(5) BORE HOLE CONSTRUCTION:
Special Construction approval ☐ Yes ☒ No Depth of Completed Well 180 ft.
Explosives used ☐ Yes ☒ No Type Amount

HOLE Diameter	From	To	SEAL Material	From	To	Amount sacks or pounds
10"	0	50	Bentonite	50	0	19 Sacks
6"	50	180				

How was seal placed: Method ☐ A ☐ B ☐ C ☐ D ☐ E
☒ Other Poured
Backfill placed from ft. to ft. Material
Gravel placed from ft. to ft. Size of gravel

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	6"	+1½	60½	250	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:	5"	0	173¼	188	☒	☐	☒	☐
					☐	☐	☐	☐

Final location of shoe(s)

(7) PERFORATIONS/SCREENS:
☒ Perforations Method Factory / Torch
☐ Screens Type Material

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
113¼	173¼	2x⅛	208	5"		☐	☒
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour
☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
15		160	1 hr.

Temperature of Water 55° Depth Artesian Flow Found
Was a water analysis done? ☐ Yes By whom
Did any strata contain water not suitable for intended use? ☐ Too little
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other
Depth of strata:

(9) LOCATION OF WELL by legal description:
County Lane Latitude Longitude
Township 18 N or (S) Range 03 E or (W) WM.
Section 19 SE ¼ SW ¼
Tax Lot Lot Block Subdivision
Street Address of Well (or nearest address) S. Willamette St. Eugene, OR. 97405

(10) STATIC WATER LEVEL:
69 ft. below land surface. Date 5/5/94
Artesian pressure lb. per square inch. Date

(11) WATER BEARING ZONES:
Depth at which water was first found 120'

From	To	Estimated Flow Rate	SWL
120	125	3 GPM	69
160	165	12 GPM	69

(12) WELL LOG:
Ground elevation

Material	From	To	SWL
Brown Topsoil	0	1	
Yellow Clay	1	19	
Brown Clay	19	26	
Gray Clay	26	36	
Gray Claystone	36	50	
Green Claystone	50	53	
Gray Claystone	53	60	
Reddish Brown Claystone	60	120	
Gray Claystone	120	135	69'
Reddish Brown Claystone	135	160	
Gray Claystone	160	180	69'

Date started 4/27/94 Completed 5/5/94

(unbonded) Water Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.

WWC Number
Signed Date

(bonded) Water Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.
WWC Number 1562
Signed Sean Oldham Date 5/5/94

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52645

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AUG - 4 1997
WATER RESOURCES DEPT.
SALEM, OREGON

WELL I.D.# L14150

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765)
Instructions for completing this report are on the last page of this form.

(START CARD) # 099328

(1) OWNER: Well Number
Name Skip P Dahlen
Address P.O. Box 5687
City Eugene State OR Zip 97405

(2) TYPE OF WORK
☒ New Well ☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment

(3) DRILL METHOD:
☐ Rotary Air ☐ Rotary Mud ☒ Cable ☐ Auger
☐ Other

(4) PROPOSED USE:
☒ Domestic ☐ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Livestock ☐ Other

(5) BORE HOLE CONSTRUCTION:
Special Construction approval ☐ Yes ☒ No Depth of Completed Well 262 ft.
Explosives used ☐ Yes ☒ No Type Amount

HOLE Diameter	From	To	SEAL Material	From	To	Sacks or pounds
10"	0	19	Bentonite	0	19	10
6"	19	262				

How was seal placed: Method ☐A ☐B ☐C ☐D ☐E
☒ Other Dry pour
Backfill placed from ft. to ft. Material
Gravel placed from ft. to ft. Size of gravel

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	6"	0+1	19	.25	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Final location of shoe(s) 19'

(7) PERFORATIONS/SCREENS:
☐ Perforations Method
☐ Screens Type Material

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
						☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour

☒ Pump ☒ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
20 GPM	20		1 hr.
30 GPM		Pump 250	

Temperature of water 53° Depth Artesian Flow Found
Was a water analysis done? ☐ Yes By whom
Did any strata contain water not suitable for intended use? ☐ Too little
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other
Depth of strata:

(9) LOCATION OF WELL by legal description:
County Lane Latitude Longitude
Township 18 N or S Range 04 E or W WM
Section 34 NE 1/4 SW 1/4
Tax Lot 300 Lot Block Subdivision
Street Address of Well (or nearest address) South Willamette Rd. 85537 Eugene

(10) STATIC WATER LEVEL:
62' ft. below land surface. Date July 2, 97
Artesian pressure lb. per square inch. Date

(11) WATER BEARING ZONES:
Depth at which water was first found 240'

From	To	Estimated Flow Rate	SWL
240	251	30	62

(12) WELL LOG:
Ground Elevation

Material	From	To	SWL
Top Soil	0	1	
Brown Sandstone Clay	1	7	
Red Basalt	7	98	
Grey Basalt	98	150	
Black Basalt	150	215	
Brown Green Sandstone	215	230	
Black Basalt	230	262	62'

Date started June 19, 1997 Completed July 3, 1997

(unbonded) Water Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.
WWC Number
Signed Date 9/18/97

(bonded) Water Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.
WWC Number 1635
Signed Jerry A Madsen Date 9/18/97

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AUG - 4 1997
WATER RESOURCES DEPT.
SALEM, OREGON

WELL I.D.# L14151

(START CARD) # 099327

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765)

Instructions for completing this report are on the last page of this form.

(1) OWNER: Well Number L14151
Name Skip P Dahlen
Address PO Box 5687
City Eugene State OR Zip 97405

(2) TYPE OF WORK
☒ New Well ☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment

(3) DRILL METHOD:
☐ Rotary Air ☐ Rotary Mud ☒ Cable ☐ Auger
☐ Other

(4) PROPOSED USE:
☒ Domestic ☐ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Livestock ☐ Other

(5) BORE HOLE CONSTRUCTION:
Special Construction approval ☐ Yes ☒ No Depth of Completed Well 440 ft.
Explosives used ☐ Yes ☒ No Type _____ Amount _____

HOLE Diameter	From	To	SEAL Material	From	To	Sacks or pounds
8"	0	20	Bentonite			10
6"	0	440				

How was seal placed: Method ☐A ☐B ☐C ☐D ☐E
☒ Other Poured Dry and tamped
Backfill placed from ____ ft. to ____ ft. Material _____
Gravel placed from ____ ft. to ____ ft. Size of gravel _____

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	6"	0+2	22	.125	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Final location of shoe(s) 22'

(7) PERFORATIONS/SCREENS:
☐ Perforations Method _____
☐ Screens Type _____ Material _____

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
						☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour

☐ Pump ☒ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
1½	440'		1 hr.

Temperature of water 53° Depth Artesian Flow Found _____
Was a water analysis done? ☐ Yes By whom _____
Did any strata contain water not suitable for intended use? ☐ Too little
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other _____
Depth of strata: _____

(9) LOCATION OF WELL by legal description:
County Lane Latitude _____ Longitude _____
Township 15 N or ☒ S Range 04 ☐ E or ☒ W WM.
Section 24 NW 1/4 SW 1/4
Tax Lot 300 Lot _____ Block _____ Subdivision _____
Street Address of Well (or nearest address) 3044 Walamate Rd
85537 Eugene

(10) STATIC WATER LEVEL:
35 ft. below land surface. Date 07/21/97
Artesian pressure _____ lb. per square inch. Date _____

(11) WATER BEARING ZONES:
Depth at which water was first found 250'

From	To	Estimated Flow Rate	SWL
250	440	1½	35'

(12) WELL LOG:
Ground Elevation _____

Material	From	To	SWL
Cobles	0	8	
Red Cinders	8	53	
Black Basalt	53	300	35'
Red Basalt	300	360	35'
Black Basalt	360	411	35'
Red Basalt	411	425	35'
Lose Reddish Clay Stone	425	440	35'

Date started June 25 97 Completed July 22 97

(unbonded) Water Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.
WWC Number 1696
Signed Derek Marcus Date 07/31/97

(bonded) Water Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.
WWC Number 1635
Signed Jerry Madsen Date 7/31/97

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LANE 54194 WELL I.D.# L14162

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NOV 14 1997
WATER RESOURCES DEPT.
SALEM, OREGON
099338

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765)

Instructions for completing this report are on the last page of this form.

(1) OWNER: Well Number
Name Skip Dahlen
Address P.O. Box 5687
City Eugen State Or Zip 97403

(2) TYPE OF WORK
☒ New Well ☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment

(3) DRILL METHOD:
☐ Rotary Air ☐ Rotary Mud ☒ Cable ☐ Auger
☐ Other

(4) PROPOSED USE:
☒ Domestic ☐ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Livestock ☐ Other

(5) BORE HOLE CONSTRUCTION: 330
Special Construction approval ☐ Yes ☒ No Depth of Completed Well 330 ft.
Explosives used ☐ Yes ☒ No Type Amount

HOLE Diameter	From	To	SEAL Material	From	To	Sacks or pounds
10"	0	18	Bemite	0	18	13
6"	18	330				

How was seal placed: Method ☐A ☐B ☐C ☐D ☐E
☒ Other Dry Pour
Backfill placed from ft. to ft. Material
Gravel placed from ft. to ft. Size of gravel

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	6"	0+2	18	25	☒	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Final location of shoe(s) 18'

(7) PERFORATIONS/SCREENS:
☐ Perforations Method
☐ Screens Type Material

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
						☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour
☐ Pump ☒ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
20 PM	330		1 hr.

Temperature of water 53° Depth Artesian Flow Found
Was a water analysis done? ☐ Yes By whom
Did any strata contain water not suitable for intended use? ☐ Too little
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other
Depth of strata:

(9) LOCATION OF WELL by legal description:
County Lane Latitude Longitude
Township 18 N or S Range 04 E or W WM
Section 24 NW 1/4 SW 1/4
Tax Lot 300 Lot Block Subdivision
Street Address of Well (or nearest address) 85937 South Willamette Eugene Or.

(10) STATIC WATER LEVEL:
78 ft. below land surface. Date 10/14/97
Artesian pressure lb. per square inch. Date

(11) WATER BEARING ZONES:
Depth at which water was first found 205'

From	To	Estimated Flow Rate	SWL
205	215	20PM	78

(12) WELL LOG:
Ground Elevation 1200'

Material	From	To	SWL
Top Soil	0	1	
Clay Broke Sandstone	1	6	
Gray Sandstone	6	10	
Red Basalt	10	95	
Black Basalt	95	175	
Red Basalt	175	205	78
Black Basalt	205	295	78
Clay stone	295	320	78
Black Basalt	320	330	78

Date started Sept 22 1997 Completed Oct. 14, 1997

(unbonded) Water Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.
WWC Number
Signed Date

(bonded) Water Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.
WWC Number 1635
Signed Jerry a Mad Date 12/16/97

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APPENDIX B

STATISTICS

Wells in T18S, R3 Section 19 and T18S, R4W Section 24

Well Log	First Water (ft. bgs)	Completed Depth (ft. bgs)	Static Water (ft. bgs)	Yield gpm
LANE 17379	214	220	30	1.5
LANE 52646	250	440	35	2
LANE 17375		560	40	0.5
LANE 52645	240	262	62	30
LANE 1469	130	446	12	2
LANE 17378	155	452	50	6
LANE 17376	123	145	35	13
LANE 17377	55	165	70	6.5
LANE 17380	58	200	11	0.8
LANE 54194	205	330	78	2
LANE 52646	250	440	35	2
LANE 17375		560	40	0.5
LANE 52645	240	262	62	30
LANE 1469	130	446	12	2
LANE 17378	155	452	50	6
LANE 17376	123	145	35	13
LANE 17377	55	165	70	6.5
LANE 17380	58	200	11	0.8
LANE 54194	205	330	78	2
LANE 17379	214	220	30	1.5

Well Log	First Water (ft. bgs)	Depth (ft. bgs)	Static Water (ft. bgs)	Yield gpm
COUNT	18	20	20	20
MAX	250	560	78	30
MIN	55	145	11	0.5
AVERAGE	159	322	42	6
MODE	214	220	35	2
MEDIAN	155	296	37.5	2

All wells in the Vicinity

Well Log	First Water (ft. bgs)	Completed Depth (ft. bgs)	Static Water (ft. bgs)	Yield gpm
LANE 17379	214	220	30	1.5
LANE 52646	250	440	35	2
LANE 17375		560	40	0.5
LANE 52645	240	262	62	30
LANE 1469	130	446	12	2
LANE 17378	155	452	50	6
LANE 17376	123	145	35	13
LANE 17377	55	165	70	6.5
LANE 17380	58	200	11	0.8
LANE 54194	205	330	78	2
LANE 52646	250	440	35	2
LANE 17375		560	40	0.5
LANE 52645	240	262	62	30
LANE 1469	130	446	12	2
LANE 17378	155	452	50	6
LANE 17376	123	145	35	13
LANE 17377	55	165	70	6.5
LANE 17380	58	200	11	0.8
LANE 54194	205	330	78	2
LANE 17379	214	220	30	1.5
LANE 17035	78	155	24	18
LANE 2977	35	205	3	3
LANE 2495	365	380	289	25
LANE 4934	245	290	141	3
LANE 17398		300	300	
LANE 17402	30	230	25	30
LANE 17407	123	175	71	30
LANE 17415	155	260	80	9
LANE 17420	117	150	11	30
LANE 17426		145	25	2
LANE 17430		255	220	1
LANE 17433		205	85	12
LANE 1390	31	400	15	1

Well Log	First Water (ft. bgs)	Completed Depth (ft. bgs)	Static Water (ft. bgs)	Yield gpm
LANE 17024		84	22	7.5
LANE 17028	60			
LANE 17044	104	150	48	7.5
LANE 17048	90	340	15	2
LANE 17374	180	224	17	60
LANE 17364	112	190	80	25
LANE 1475	195	215	153	42
LANE 2363	258	278	142	20
LANE 3214	120	150	90	3
LANE 3870	172	325	155	6
LANE 3872	65	395	61	4
LANE 4936		240	158	15
LANE 37		450	18	1.5
LANE 231	175	500		
LANE 17404	47	90	10	20
LANE 17406	410	413	197	5
LANE 17411	130	275	100	4.6
LANE 17413	172	200	60	43
LANE 17432	51	120	5	30
LANE 24458	57	160	37	5
LANE 58772	180	320	125	1
LANE 17025	215	290	30	15
LANE 17046	60	88	18	35
LANE 17052		502	180	20
LANE 52540		200	6	2
LANE 17366	70	280	52	8
LANE 206	388	390	207	80
LANE 275	68	90	68	30
LANE 17389	200	290	200	
LANE 17391	132	155	110	25
LANE 17400	300	500	100	
LANE 17405	330	375	70	12
LANE 17409	190	275	165	15
LANE				

Well Log	First Water (ft. bgs)	Completed Depth (ft. bgs)	Static Water (ft. bgs)	Yield gpm
17422	420		37	24
LANE 52399	70	255	28	2.5
LANE 58690	112	203	40	30
LANE 58943	207	280	152	5
LANE 17032		120	7.5	8
LANE 17033		155	60	10
LANE 17042		230		1
LANE 17013	270	300	100	7
LANE 4393		420		
LANE 17368	40	615	20	26
LANE 17371		320		
LANE 1471	40	85	58	20
LANE 5688	150	170	40	40
LANE 50041	56	250	37	12
LANE 17436		300	120	
LANE 61689	163	275	108	105
LANE 17382		98	56	8.3
LANE 17027	40	105	25	1.5
LANE 17029	45	400	50	7.5
LANE 17030	30	205	5	2
LANE 17050		50		
LANE 57488	185	385	85	0.1
LANE 1470	32	84	43	5.5
LANE 2245		200		
LANE 17408	359	525	85	6
LANE 17418		160		18
LANE 17437	120	140	60	18
LANE 59680	40	340	8	1
LANE 60866	85	360	35	1
LANE 61606		400		
LANE 17384		460	60	4.5
LANE 4704	470	550	190	15
LANE 16780	142	190	42	9
LANE 17023	350	385	100	7.5

Well Log	First Water (ft. bgs)	Completed Depth (ft. bgs)	Static Water (ft. bgs)	Yield gpm
LANE 17040		150	30	1
LANE 17014	47	155	24	21
LANE 1468	90	165	8	12
LANE 17365		140		
LANE 17369	119	300	20	0.5
LANE 3134	260	295	195	30
LANE 3543	305	324	210	7
LANE 5398	339	350	201	7
LANE 17388	57	80	55	30
LANE 17393	215	455	80	1
LANE 17424	292	305	22	28
LANE 17431		110	60	24
LANE 17434		253		15
LANE 60077	200	220	100	0.3
LANE 17385		450	35	2
LANE 3330	28	50	9	10
LANE 4472	73	120	15	100
LANE 17043		222	40	3
LANE 17049		300	17	4
LANE 17051		105	24	1.7
LANE 58511				
LANE 2963	110	267	27	2.5
LANE 17370	262	906	19	1
LANE 5399		500		
LANE 5542		406	215	3
LANE 17396	150	165	60	75
LANE 17435	380	450	215	3
LANE 52361	135	230	85	60
LANE 52415	272	300	130	50
LANE 17386		200	20	10
LANE 1388	90	110	32	15
LANE 17022	129	275	51	2
LANE 17031	72	127	13	8
LANE				

Well Log	First Water (ft. bgs)	Completed Depth (ft. bgs)	Static Water (ft. bgs)	Yield gpm
17041		97	25	30
LANE 59895	87	110	20	8
LANE 2976	35	65	28	20
LANE 17373	55	415	16	60
LANE 1472	32	40	20	20
LANE 2082		405	145	1
LANE 2091	381	535	47	1.5
LANE 2247	132	185	99	9
LANE 2248	180	500	219	4.5
LANE 2890	72	500	65	2.5
LANE 4077	30	260	10	1
LANE 117	210	460	200	6
LANE 17401	325	345		7
LANE 17403	297	360	290	1
LANE 24425	314	350	47	4
LANE 50664	292	390	170	15
LANE 57310	88	210	80	5
LANE 57485		390	160	65
LANE 58514	55	99	47	20
LANE 60589		810		
LANE 61449	90	127	80	36
LANE 17034		230	80	9
LANE 17020		108	29	42
LANE 17372	147	734	74	1.1
LANE 2034	457	500	178	20
LANE 2163		275		
LANE 5167	175	202	99	1
LANE 232	138	800		
LANE 17394	62	260	56	3
LANE 17399	215	400	155	12
LANE 17414	169	200	119	24
LANE 17428		300		
LANE 17429		220	120	1
LANE 57066	385	469	267	3

Well Log	First Water (ft. bgs)	Completed Depth (ft. bgs)	Static Water (ft. bgs)	Yield gpm
LANE 58444				
LANE 60076	150	180	12	20
LANE 60078	200	200	100	0.3
LANE 60079	240	240	240	0.3
LANE 17383		58	35	10
LANE 17037	210	270	210	
LANE 17045	191	201	41	16
LANE 17047	55	67	17	40
LANE 2975	40	120	28	6.5
LANE 17015	62	330	60	3
LANE 58014		20		
LANE 17367	60	130	42	100
LANE 52404	178	190	76	150
LANE 534		800		
LANE 1474	235	275	144	23
LANE 3973		450	300	
LANE 17410	62	240	20	6
LANE 17416	60	400	50	
LANE 17421	155	260	80	9
LANE 17427		205	30	2
LANE 60201		221	220	0.2
LANE 17387		125	55	6
LANE 4056	44	110	16	12.5
LANE 17021	70	160	20	20
LANE 17026	130	360	28	2
LANE 17036	185	425	90	1.5
LANE 17039	75	100	21	15
LANE 58950	566	600	165	12
LANE 2973	50	125	28	0.5
LANE 24169	40	84	30	2
LANE 17016		70	17	22
LANE 24242	41	84	34	4
LANE 1473	260	450	220	1.1
LANE				

Well Log	First Water (ft. bgs)	Completed Depth (ft. bgs)	Static Water (ft. bgs)	Yield gpm
2891	166	215	62	6
LANE 17397		320	320	
LANE 17412	305	500	130	1.8
LANE 17417	12	125	39	17
LANE 17419	275	305	160	7
LANE 17423	190	200	100	2
LANE 17425	130	155	25	20
LANE 52396	70	350	38	0.3
LANE 60075	140	300	140	0.3
LANE 60733	60	200	20	6
LANE 17381		270	80	100
LANE 1389	80	180	10	14
LANE 55235		22		
LANE 16339		268	240	16
LANE 16340		52	8	33.3
LANE 55333			5	
LANE 58353				
LANE 16364	105	128	98	8.5
LANE 1354	140	165	18	10
LANE 16613		210	105	25
LANE 16624	45	90	40	4
LANE 16640	260	318	250	10
LANE 16666	112	124	45	15
LANE 57687	160	340	70	3
LANE 59681	50	160	25	2
LANE 61608	80	130	25	12
LANE 2249	233	250	168	25
LANE 50761	121	210	32	6
LANE 51084	65	525	32	3.5
LANE 4714	12	15	12	
LANE 16343	22	40	11	60
LANE 51504	110	143	45	10
LANE 55232		18		
LANE 55233		25		

Well Log	First Water (ft. bgs)	Completed Depth (ft. bgs)	Static Water (ft. bgs)	Yield gpm
LANE 16369	70	110	30	35
LANE 59880				
LANE 60085	72	127	69	13
LANE 16606	225			17.5
LANE 16610		163	38	10
LANE 16616	110	150	29	10.5
LANE 16656		32	8	20
LANE 16657		220	45	3.3
LANE 16663		350	98	
LANE 16664		225	80	16.7
LANE 16672		300	80	200
LANE 16596	30	485	25	3.5
LANE 16597	90	125	57	21
LANE 16599		130	129	
LANE 57582	75	140	51	10
LANE 52040		330		
LANE 54728	120	500	125	2
LANE 56845	120	260	60	2
LANE 16345		100	80	17
LANE 24282	100	100	100	15
LANE 16367		400	152	1.5
LANE 59085	78	454	27	20
LANE 59772	275	405	174	0.5
LANE 495	42	325	25	1
LANE 4409	193	210	74	10
LANE 16619	110	260	85	2
LANE 16620	151	250	42	20
LANE 16629	45	180	20	8.5
LANE 16651		220	30	4
LANE 16654		105	30	5.1
LANE 16671		395		
LANE 16676	55	60	19	20
LANE 50278	75	177	63	6
LANE				

Well Log	First Water (ft. bgs)	Completed Depth (ft. bgs)	Static Water (ft. bgs)	Yield gpm
4617		600		
LANE 156	176	325	155	0.2
LANE 51875	160	260	75	2
LANE 3716	10	20	10	
LANE 3769		10	4.8	
LANE 16344		390	80	20
LANE 16337		108	20	20
LANE 60740	145	180	40	20
LANE 1357	170	350	105	60
LANE 1358	55	135	35	15
LANE 2408		336	150	10
LANE 4252	85	515	47	1
LANE 24157	147	300	124	2
LANE 205	212	355	62	3
LANE 16614		245	40	4.5
LANE 16625	85	725	80	
LANE 16631	45	150	14	6.5
LANE 16642	296	305	79	20
LANE 16660	64	165	64	15
LANE 16673	137	350	98	
LANE 51294	35	160		10
LANE 51911		46		
LANE 54729		560	250	1
LANE 2926		6		
LANE 16342	120	150	50	23
LANE 2716	19	25	18.5	
LANE 5634	8	10	7	
LANE 59263	110	610	63	4
LANE 1352	25	127	17	4.5
LANE 4873	80	340	55	6
LANE 16623	30	173	6	6
LANE 16630	200	450	194	
LANE 16639	136	500	30	1
LANE 16646	60	80	17	8

Well Log	First Water (ft. bgs)	Completed Depth (ft. bgs)	Static Water (ft. bgs)	Yield gpm
LANE 16655		175	25	3.5
LANE 3962	55	445	7	1
LANE 3964	410	600	276	0.1
LANE 2004		10	6	
LANE 16338		280	6	120
LANE 1335	55	160	15	2.5
LANE 16362	55	110	30	7.5
LANE 59261	130	203	35	65
LANE 59881	49	407	15	0.3
LANE 61302	62	81	23	2
LANE 1353	233	300		18
LANE 1355	97	219	72	15
LANE 1356	80	95	40	5
LANE 2020	118	495	112	10
LANE 16608		352		
LANE 16618	115	350	92	
LANE 16621	70	220	21	1.5
LANE 16633	87	254	60	1.5
LANE 16644	59	185	23	30
LANE 16653		362	50	2.5
LANE 16665	190	305	155	6
LANE 51583	190	205	68	15
LANE 59529	200	240	80	2
LANE 62083	210	310	200	0.5
LANE 16601		115	25	10
LANE 52717	104	450	80	1
LANE 2925	5	5	5.3	1
LANE 54484	85	95	8	24
LANE 55234		25		
LANE 16336		97	16	20
LANE 16366	162	195	71	24
LANE 52662				
LANE 3180	230	260	107	2.5
LANE				

Well Log	First Water (ft. bgs)	Completed Depth (ft. bgs)	Static Water (ft. bgs)	Yield gpm
4253	60	470	49	12
LANE 220	90	245	80	10
LANE 16604	260	305	80	4
LANE 16609		485		
LANE 16636	49	190	30	15
LANE 16638	370	425	275	3
LANE 16658		128	15	6.7
LANE 16659	286	330	121	2
LANE 16667	125	260	60	11
LANE 16668	75	95	30	15
LANE 16674		300	175	1
LANE 16675	260	285	100	25
LANE 50727	115	315	42	6.5
LANE 16598	110	375	40	6
LANE 55230		22		
LANE 59237		40	15.5	
LANE 60734	85	250	30	7
LANE 60739	65	150	15	12
LANE 16602	100	270	80	1
LANE 16605	90	325	50	3
LANE 16607		125	71	
LANE 16615		302	50	6.5
LANE 16627	105	230	50	3
LANE 16628	45	330	40	4
LANE 16632	293	305	259	60
LANE 16649	130	300	100	1
LANE 16669	105	250	50	3
LANE 5022	73	456	60	5
LANE 16595	65	140	40	40
LANE 16600	35	80	3	50
LANE 51083	45	133	20	7.5
LANE 56847		380	80	0.3
LANE 3717	10	18	10	
LANE 4106	58	64	6	20

Well Log	First Water (ft. bgs)	Completed Depth (ft. bgs)	Static Water (ft. bgs)	Yield gpm
LANE 16334	36	47	8	25
LANE 59006	57	145	49	14
LANE 466		225	25	1
LANE 16603	190	470	170	
LANE 16637	96	450	58	
LANE 16641	301	345	99	1
LANE 16670		74	6	10
LANE 17640		52	12.5	10
LANE 57577	50	95	20	3
LANE 59402	151	400	72	0.5
LANE 1351	178	190	143	9
LANE 3244	315	395	77	2.5
LANE 3963	60	85	25	21
LANE 4616	126	140	6	8
LANE 52718	85	190	30	15
LANE 3714	10	20	10	
LANE 3768	18	20	5.3	
LANE 16341	155	165	40	15
LANE 16335		200	18	7
LANE 16363	62	100	25	9.5
LANE 59911	95	398	42	4
LANE 16611	85	400	42	1.3
LANE 16622	130	240	60	7
LANE 16634		240	180	5
LANE 16635	95	230	45	15
LANE 16652		41	18	2
LANE 16662		110	26	7.5
LANE 3961	355	460	295	0.3
LANE 53037	95	125	85	15
LANE 59086	234	515	20	2
LANE 16612	71	350	28	1
LANE 16617	72	350	50	3
LANE 16645	150	193	9	5
LANE				

Well Log	First Water (ft. bgs)	Completed Depth (ft. bgs)	Static Water (ft. bgs)	Yield gpm
16648	59	200	30	1.5
LANE 16650	92	105	25	10
LANE 16661		248	50	300
LANE 13966	49	85	31	33
LANE 152	159	510	147	4
LANE 52038	310	345	243	10
LANE 53034	33	104	21	43
LANE 57870	172	235	75	5
LANE 57355	485	534	224	5
LANE 57868	238	268	178	21
LANE 59016	180	249	93	90
LANE 59830	61	110	28	8
LANE 59867	182	282	21	1
LANE 59912	235	398	34	5
LANE 60741	65	200	40	4
LANE 57787	230	310	87	3
LANE 57790	70	150	38	8
LANE 57875	50	235	108	7
LANE 57791	65	150	40	20
LANE 59231	275	735	251	1.5
LANE 59840	50	90	18	30
LANE 57793	100	310	10	0.1
LANE 58288	158	395	81	
LANE 57771	40	150	25	5
LANE 59839	44	85	6	30
LANE 57772		600		
LANE 58287	130	350	85	1
LANE 59836	46	85	17	8
LANE 61687		355		
LANE 57792	81	305	86	1
LANE 57874				
LANE 58411	162	257	113	7
LANE 59903	71	110	20	6
LANE 57876	270	430	129	5

Well Log	First Water (ft. bgs)	Completed Depth (ft. bgs)	Static Water (ft. bgs)	Yield gpm
LANE 59738	435	560	270	1.5
LANE 59208	225	615	204	1.5
LANE 59882	22	354	7	2
LANE 55231		22		

Well Log	First Water (ft. bgs)	Completed (ft. bgs)	Static Water (ft. bgs)	Yield gpm
COUNT	324	429	396	374
MAX	566	906	320	300
MIN	5	5	3	0.1
Average	140	259	72	15
MODE	55	200	80	1
MEDIAN	112	240	49.5	7

APPENDIX C

DAHLEN WELL LOGS

Lane 52645

RECEIVED
AUG - 4 1997
WATER RESOURCES DEPT.
SALEM, OREGON

WELL I.D.# L14150

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765)

(START CARD) # 099328

Instructions for completing this report are on the last page of this form.

(1) OWNER: Well Number ____
Name Skip P Dahlen
Address P.O. Box 5687
City Eugene State OR Zip 97405

(2) TYPE OF WORK
☒ New Well ☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment

(3) DRILL METHOD:
☐ Rotary Air ☐ Rotary Mud ☒ Cable ☐ Auger
☐ Other ____

(4) PROPOSED USE:
☒ Domestic ☐ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Livestock ☐ Other ____

(5) BORE HOLE CONSTRUCTION:
Special Construction approval ☐ Yes ☒ No Depth of Completed Well 262 ft.
Explosives used ☐ Yes ☒ No Type ____ Amount ____

HOLE

Diameter	From	To	Material	From	To	Sacks or pounds
10"	0	19	Bentonite	0	19	10
6"	19	262				

SEAL

How was seal placed: Method ☐A ☐B ☐C ☐D ☐E
☒ Other Dry pour
Backfill placed from ____ ft. to ____ ft. Material ____
Gravel placed from ____ ft. to ____ ft. Size of gravel ____

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	6"	0+1	19	.25	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Final location of shoe(s) 19'

(7) PERFORATIONS/SCREENS:
☐ Perforations Method ____
☐ Screens Type ____ Material ____

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
						☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour

☒ Pump ☒ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
20 GPM	20		1 hr
30 GPM		Pump 250	

Temperature of water 53° Depth Artesian Flow Found ____
Was a water analysis done? ☐ Yes By whom ____
Did any strata contain water not suitable for intended use? ☐ Too little
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other ____
Depth of strata: ____

(9) LOCATION OF WELL by legal description:
County Lane Latitude ____ Longitude ____
Township 18 N or S Range 04 E or W WM.
Section 24 NE 1/4 SW 1/4
Tax Lot 300 Lot ____ Block ____ Subdivision ____
Street Address of Well (or nearest address) South Willamette Rd. 85537 Eugene

(10) STATIC WATER LEVEL:
62' ft. below land surface. Date July 2, 97
Artesian pressure ____ lb. per square inch. Date ____

(11) WATER BEARING ZONES:
Depth at which water was first found 240'

From	To	Estimated Flow Rate	SWL
240	251	30	62

(12) WELL LOG:
Ground Elevation ____

Material	From	To	SWL
Top Soil	0	1	
Brown Sandstone Clay	1	7	
Red Basalt	7	[illegible]	
Gray Basalt	88	150	
Black Basalt	150	215	
Brown Green Sandstone	215	230	
Black Basalt	230	262	62'

Date started June 19, 1997 Completed July 3, 1997

(unbonded) Water Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.
WWC Number ____
Signed ____ Date 9/18/97

(bonded) Water Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.
WWC Number 1635
Signed Jerry A Mahn Date 9/18/97

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lane 52646

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WATER RESOURCES DEPT.
SALEM, OREGON

WELL I.D.# L14151

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765)
Instructions for completing this report are on the last page of this form.

(START CARD) # 099327

(1) OWNER: Well Number L14151
Name Skip P Dahlen
Address PO Box 5687
City Eugene State OR Zip 97405

(2) TYPE OF WORK
[X] New Well [ ] Deepening [ ] Alteration (repair/recondition) [ ] Abandonment

(3) DRILL METHOD:
[ ] Rotary Air [ ] Rotary Mud [X] Cable [ ] Auger
[ ] Other

(4) PROPOSED USE:
[X] Domestic [ ] Community [ ] Industrial [ ] Irrigation
[ ] Thermal [ ] Injection [ ] Livestock [ ] Other

(5) BORE HOLE CONSTRUCTION:
Special Construction approval [ ] Yes [X] No Depth of Completed Well 440 ft.
Explosives used [ ] Yes [X] No Type _____ Amount _____

HOLE Diameter	From	To	SEAL Material	From	To	Sacks or pounds
8"	0	20	Bentonite			To
6"	0	440				

How was seal placed: Method [ ] A [ ] B [ ] C [ ] D [ ] E
[X] Other Poured Dry Grad temper
Backfill placed from ____ ft. to ____ ft. Material _____
Gravel placed from ____ ft. to ____ ft. Size of gravel _____

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	6"	0+2	22	.125	[X]	[ ]	[X]	[ ]
					[ ]	[ ]	[ ]	[ ]
					[ ]	[ ]	[ ]	[ ]
					[ ]	[ ]	[ ]	[ ]
Liner:					[ ]	[ ]	[ ]	[ ]
					[ ]	[ ]	[ ]	[ ]

Final location of shoe(s) 22'

(7) PERFORATIONS/SCREENS:
[ ] Perforations Method _____
[ ] Screens Type _____ Material _____

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
						[ ]	[ ]
						[ ]	[ ]
						[ ]	[ ]
						[ ]	[ ]
						[ ]	[ ]

(8) WELL TESTS: Minimum testing time is 1 hour

[ ] Pump [X] Bailer [ ] Air [ ] Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
1/2	440'		1 hr.

Temperature of water 53° Depth Artesian Flow Found _____
Was a water analysis done? [ ] Yes By whom _____
Did any strata contain water not suitable for intended use? [ ] Too little
[ ] Salty [ ] Muddy [ ] Odor [ ] Colored [ ] Other _____
Depth of strata: _____

(9) LOCATION OF WELL by legal description:
County Lane Latitude _____ Longitude _____
Township 15 N or [S] Range 04 E or [W] WM.
Section 24 NW 1/4 SW 1/4
Tax Lot 300 Lot _____ Block _____ Subdivision _____
Street Address of Well (or nearest address) 3600 Wilamette Rd
85537 Eugene

(10) STATIC WATER LEVEL:
35 ft. below land surface. Date 07/21/97
Artesian pressure _____ lb. per square inch. Date _____

(11) WATER BEARING ZONES:
Depth at which water was first found 250'

From	To	Estimated Flow Rate	SWL
250	440	1 1/2	35'

(12) WELL LOG:
Ground Elevation _____

Material	From	To	SWL
Cobles	0	8	
Red Cinders	8	53	
Black Basalt	53	300	35'
Red Basalt	300	360	35'
Black Basalt	360	411	35'
Red Basalt	411	425	35'
Lone Reddish Clay Stone	425	440	35'

Date started June 25/97 Completed July 22/97

(unbonded) Water Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.
WWC Number 1696
Signed Derek Marsen Date 07/31/97

(bonded) Water Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.
WWC Number 1635
Signed Jerry Madsen Date 7/31/97

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LANE 52646.tif printed by Graphic Workshop

LANE 54194 WELL I.D.# L14162

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WATER RESOURCES DEPT
SALEM, OREGON
099338

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765)

Instructions for completing this report are on the last page of this form.

(1) OWNER: Well Number

Name Skip Dahlen

Address P.O. Box 5687

City Eugen State Or Zip 97405

(2) TYPE OF WORK

☒ New Well ☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment

(3) DRILL METHOD:

☐ Rotary Air ☐ Rotary Mud ☒ Cable ☐ Auger

☐ Other

(4) PROPOSED USE:

☒ Domestic ☐ Community ☐ Industrial ☐ Irrigation

☐ Thermal ☐ Injection ☐ Livestock ☐ Other

(5) BORE HOLE CONSTRUCTION: JW50

Special Construction approval ☐ Yes ☒ No Depth of Completed Well 330 ft.

Explosives used ☐ Yes ☒ No Type Amount

HOLE Diameter	From	To	SEAL Material	From	To	Sacks or pounds
10"	0	18	Bemnite	0	18	13
6"	18	330				

How was seal placed: Method ☐A ☐B ☐C ☐D ☐E

☒ Other Dry Pour

Backfill placed from ft. to ft. Material

Gravel placed from ft. to ft. Size of gravel

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	6"	0+2	18	25	☒	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Final location of shoe(s) 18'

(7) PERFORATIONS/SCREENS:

☐ Perforations Method

☐ Screens Type Material

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
						☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour

☐ Pump ☒ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
2 GPM	330		1 hr.

Temperature of water 53° Depth Artesian Flow Found

Was a water analysis done? ☐ Yes By whom

Did any strata contain water not suitable for intended use? ☐ Too little

☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other

Depth of strata:

(9) LOCATION OF WELL by legal description:

County Lane Latitude Longitude

Township 18 ☐N or ☒S Range 04 ☐E or ☒W WM.

Section 24 NW 1/4 SW 1/4

Tax Lot 300 Lot Block Subdivision

Street Address of Well (or nearest address) 85037 South Willamette Eugene Or.

(10) STATIC WATER LEVEL:

78 ft. below land surface. Date 10/14/97

Artesian pressure lb. per square inch. Date

(11) WATER BEARING ZONES:

Depth at which water was first found 205'

From	To	Estimated Flow Rate	SWL
205	215	2GPM	78

(12) WELL LOG:

Ground Elevation 1200'

Material	From	To	SWL
Top Soil	0	1	
Clay Broke Sandstone	1	6	
Gray Sandstone	6	10	
Red Basalt	10	95	
Black Basalt	95	175	
Red Basalt	175	205	78
Black Basalt	205	295	78
Clay stone	295	320	78
Black Basalt	320	330	78

Date started Oct. 13 1997 Completed Oct. 14, 1997

(unbonded) Water Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.

WWC Number

Signed Date

(bonded) Water Well Constructor Certification:

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.

WWC Number 1635

Signed Jerry A Mack Date 11/16/97

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APPENDIX D

BOWER WELL LOG

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765)

LANE 58367 34938

START CARD # 127380

Instructions for completing this report are on the last page of this form.

(1) OWNER: Well Number #1
Name C.A.Bowers
Address 31479 Camas Lane
City Eugene, State OR Zip 97405

(2) TYPE OF WORK
☒ New Well ☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment

(3) DRILL METHOD:
☒ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Auger
☐ Other

(4) PROPOSED USE:
☒ Domestic ☐ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Livestock ☐ Other

(5) BORE HOLE CONSTRUCTION:
Special Construction approval ☐ Yes ☒ No Depth of Completed Well 347 ft.
Explosives used ☐ Yes ☒ No Type ____ Amount ____

HOLE Diameter	From	To	SEAL Material	From	To	Sacks or pounds
10"	0	18	cement	0	18	6 sacks
6"	18	347				

How was seal placed: Method ☐ A ☐ B ☒ C ☐ D ☐ E
☐ Other
Backfill placed from ____ ft. to ____ ft. Material ____
Gravel placed from ____ ft. to ____ ft. Size of gravel ____

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	6"	+2	18	250	☒	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Final location of shoe(s) ____

(7) PERFORATIONS/SCREENS:
☐ Perforations Method ____
☐ Screens Type ____ Material ____

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
						☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour
☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
12½	222	347	1 hr.

Temperature of water 57 Depth Artesian Flow Found ____
Was a water analysis done? ☐ Yes By whom ____
Did any strata contain water not suitable for intended use? ☐ Too little
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other ____
Depth of strata: ____

(9) LOCATION OF WELL by legal description:
County Lane Latitude ____ Longitude ____
Township 18S N or S Range 3W E or W. WM.
Section 19 NW 1/4 SW 1/4
Tax Lot 1301 Lot ____ Block ____ Subdivision ____
Street Address of Well (or nearest address) same

(10) STATIC WATER LEVEL:
125 ft. below land surface. Date 7-5-00
Artesian pressure ____ lb. per square inch. Date ____

(11) WATER BEARING ZONES:
Depth at which water was first found 207 ft.

From	To	Estimated Flow Rate	SWL
207	209	1	125
270	274	1½	125
331	333	10	125

(12) WELL LOG:
Ground Elevation ____

Material	From	To	SWL
topsoil	0	4	
gray brown conglom. hard	4	347	125

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WATER RESOURCES DEPT.
SALEM, OREGON

Date started 7-3-00 Completed 7-5-00

(unbonded) Water Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.
WWC Number 1722
Signed ____ Date 7-5-00

(bonded) Water Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.
WWC Number 1541
Signed ____ Date 7-5-00

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APPENDIX E

BOWER AQUIFER TEST

MEMORANDUM

lane county

TO George Currin

FROM Ralph Christensen

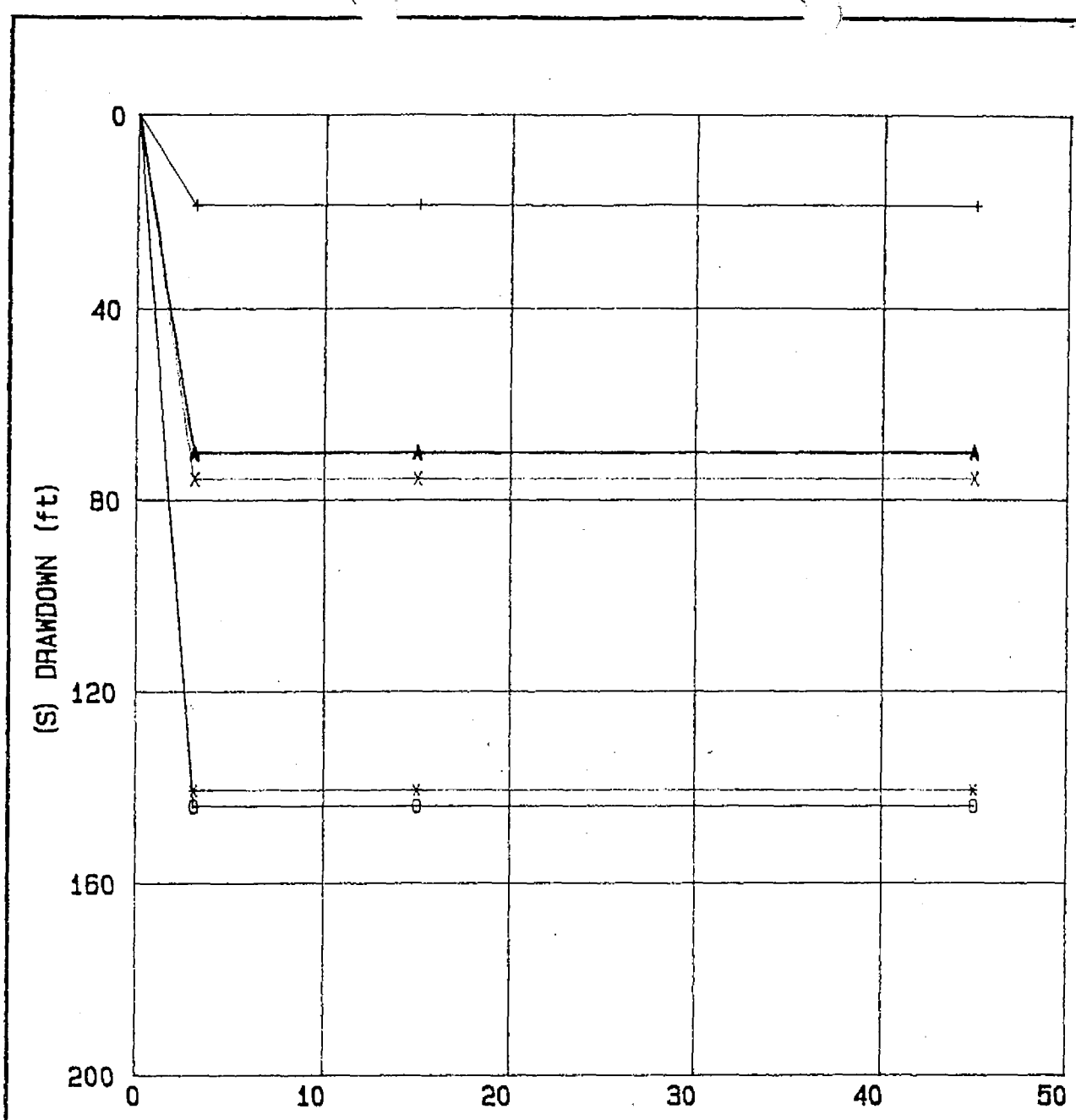
SUBJECT Chet Bower Partition PA 2230-83 DATE 9/4/85

The aquifer test performed by Mr. Bowers indicates a transmissivity of between 55 and 69 gpd/ft. in an aquifer 100 ft. thick. The observation well, which taps an aquifer beneath the pumped aquifer, showed no response during the test. It thus appears that at least two separate, or poorly connected, aquifers are available for use in this area. The two wells are estimated to be about 200 ft. apart.

The transmissivity of 55 gpd/ft. is equal to a permeability of .55 gpd/square ft.

In a 400 ft. thick aquifer section the transmissivity would be 220 gpd/ft. Thus the overall transmissivity of at least 70 gpd/ft. in a 400 ft. thick aquifer, as required, has been met. This partition may be finalled and approved with respect to water availability.

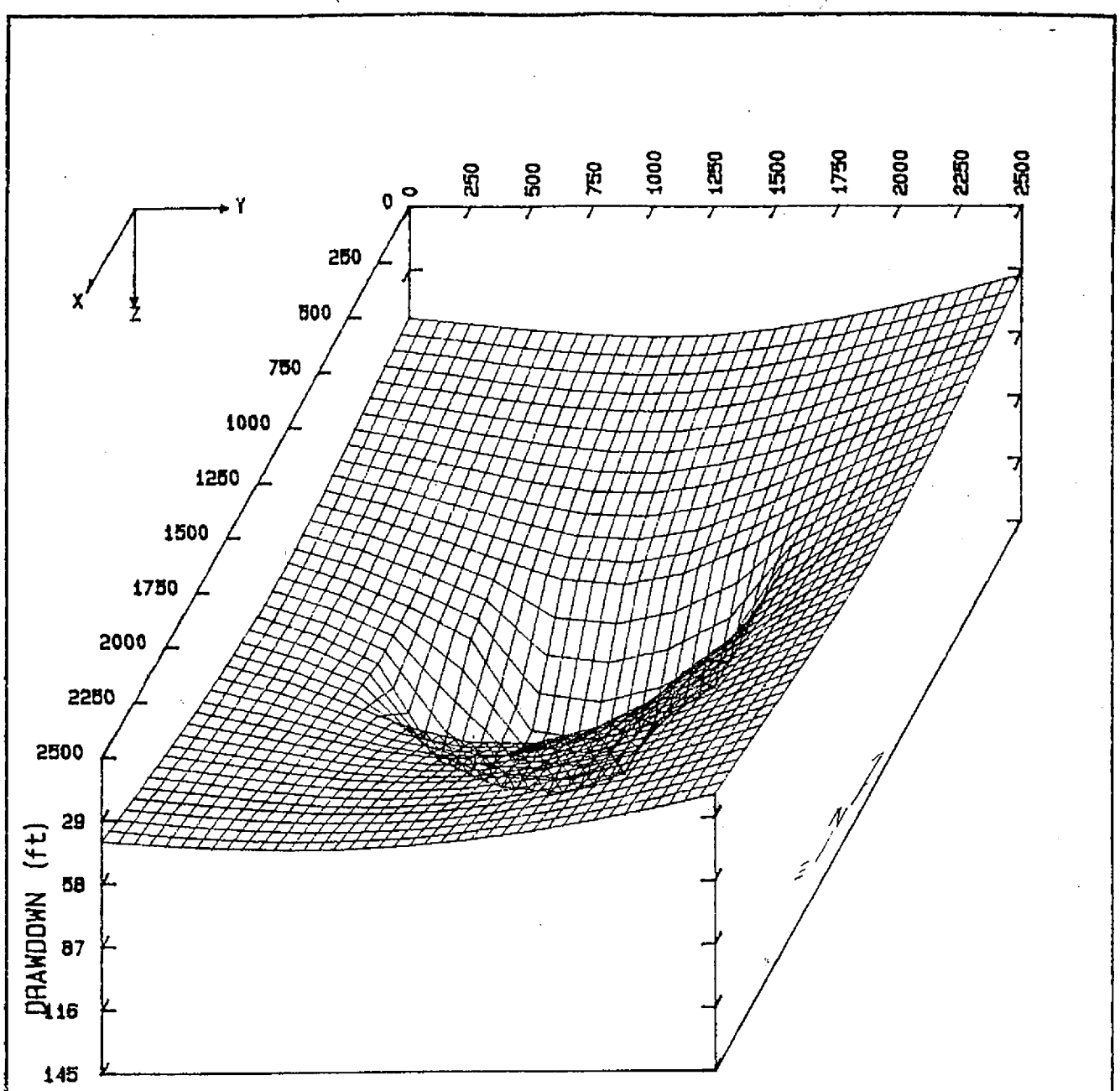
RC/jbw



SYMBOL	X-COORDINATE	Y-COORDINATE
*	1250	1000
0	1000	1250
X	1500	1750
+	2500	2500
A	500	500

NOTE: PRIMED (') POINTS INDICATE WATER LEVEL HAS DROPPED BELOW BOTTOM OF AQUIFER

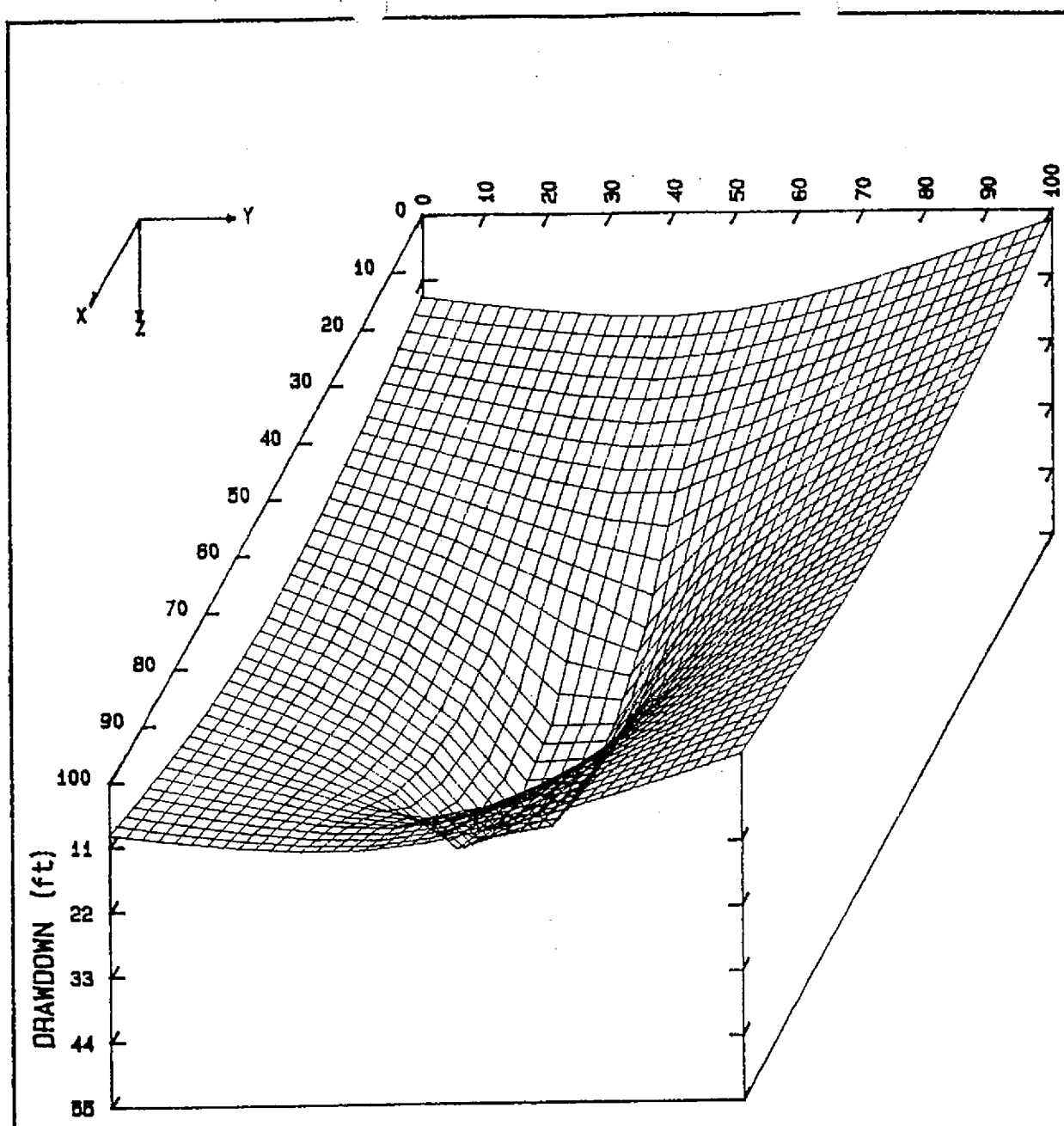
PROJECT: CHET BOWERS FILE: 1 LOCATION: SPENCE BUTTE	DRAWDOWN GRAPH
LANE COUNTY MANAGEMENT	FIGURE 1



GROUNDWATER LEVEL AFTER 45 YEARS OF PUMPING

NOTE: SCALE OF X AND Y AXES DIFFERS FROM THAT OF Z AXIS

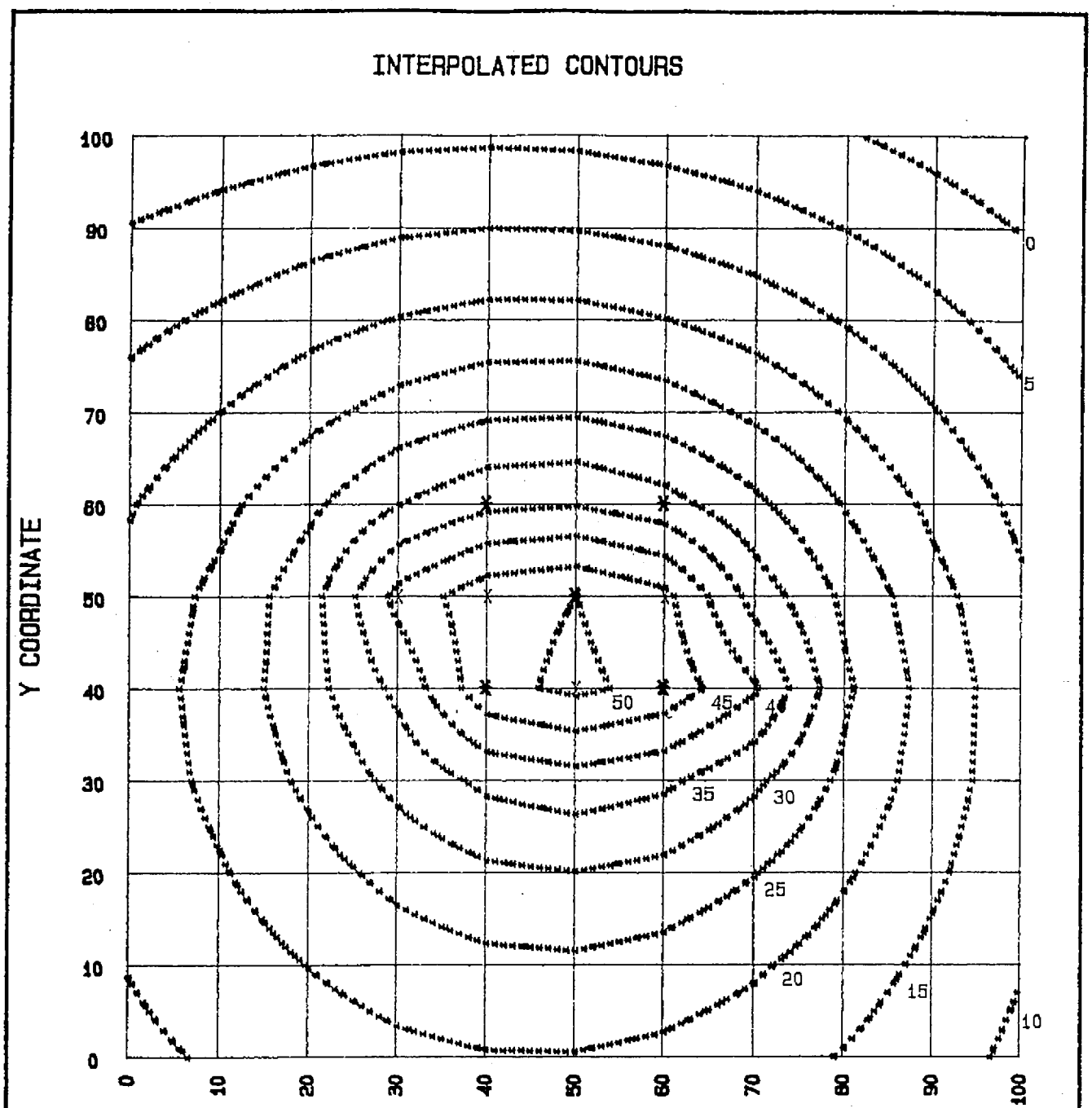
PROJECT: CHET BOWERS FILE: 1 LOCATION: SPENCE BUTTE	GROUNDWATER LEVEL SHOWING EFFECTS OF PUMPING
LANE COUNTY MANAGEMENT	FIGURE 2



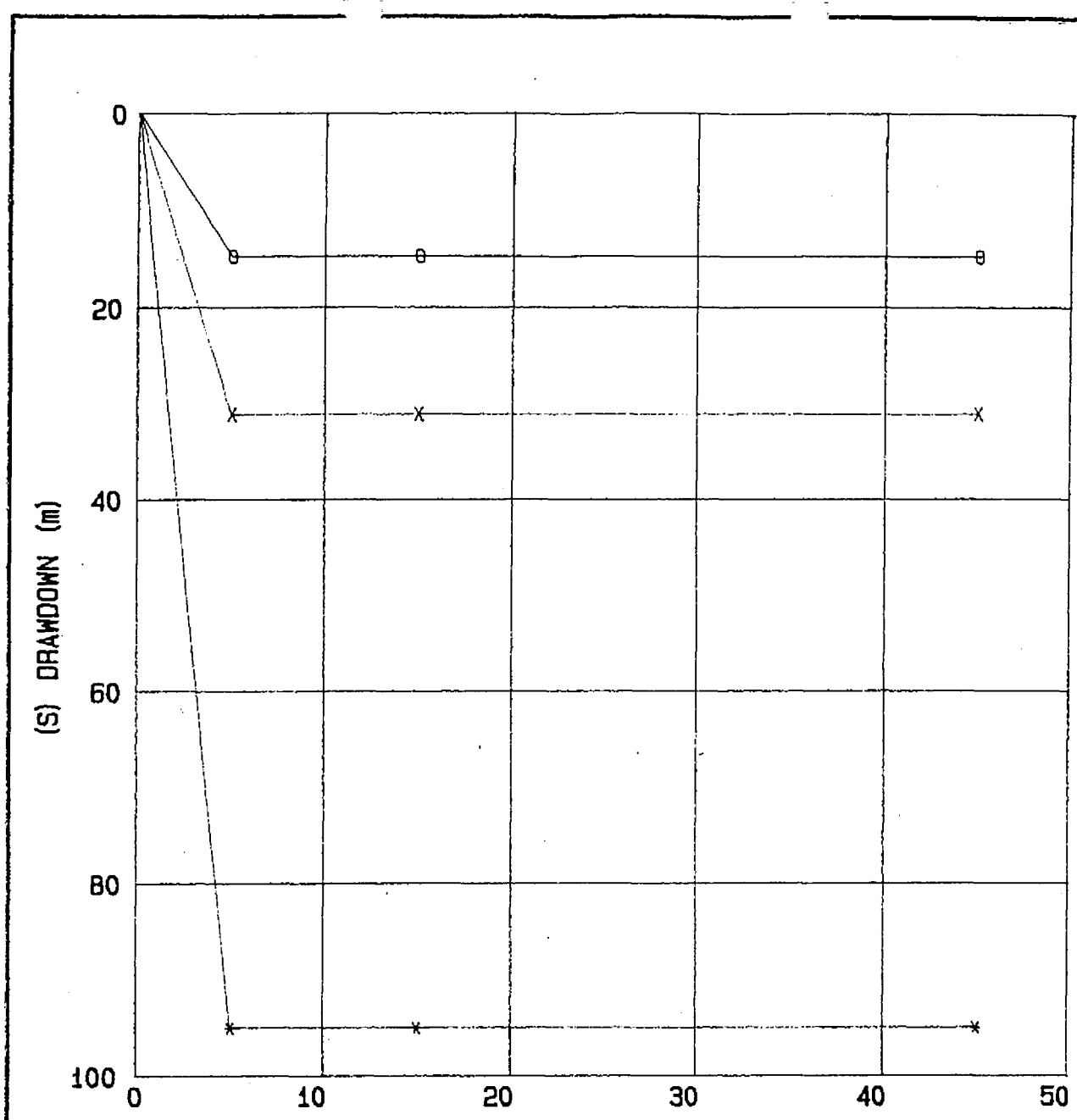
GROUNDWATER LEVEL AFTER 25 YEARS OF PUMPING

NOTE: SCALE OF X AND Y AXES DIFFERS FROM THAT OF Z AXIS

PROJECT: CHET BOWERS FILE: 1 LOCATION: SPENCER BUTTE	GROUNDWATER LEVEL SHOWING EFFECTS OF PUMPING
LANE COUNTY MANAGEMENT	FIGURE 3



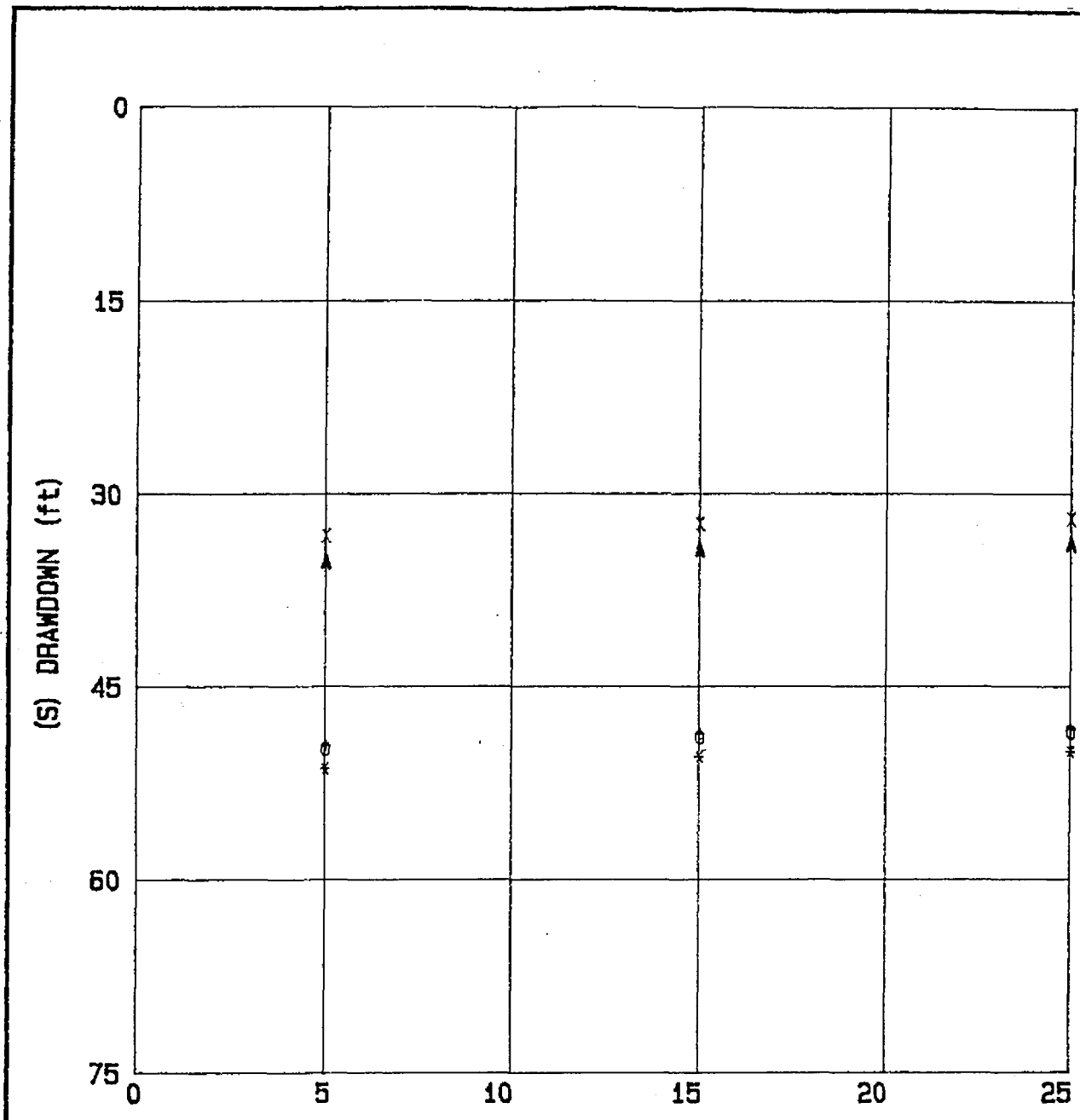
PROJECT: CHET BOWERS FILE: 1 LOCATION: SPENCER BUTTE	WATER LEVEL CONTOURS AFTER 25 YEARS OF PUMPING
LANE COUNTY MANAGEMENT	FIGURE 1



SYMBOL	X-COORDINATE	Y-COORDINATE
*	50	50
0	90	90
X	70	70
+		
A		

NOTE: PRIMED (') POINTS INDICATE WATER LEVEL HAS DROPPED BELOW BOTTOM OF AQUIFER

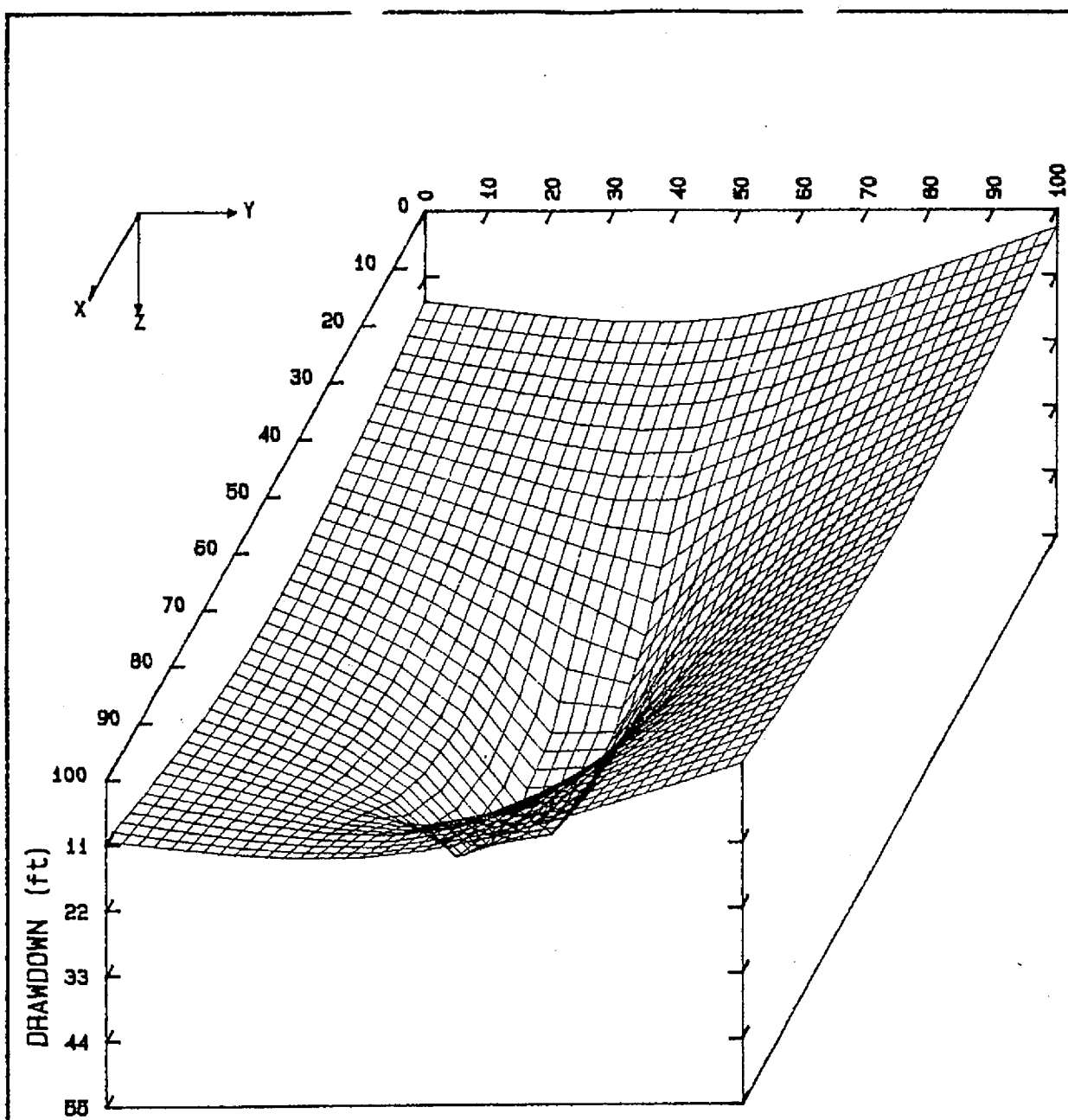
PROJECT: FILE: LOCATION:	DRAWDOWN GRAPH
LANE COUNTY MANAGEMENT	FIGURE 1.



SYMBOL	X-COORDINATE	Y-COORDINATE
*	50	50
O	40	40
X	60	60
+	60	40
A	40	60

NOTE: PRIMED (') POINTS INDICATE WATER LEVEL HAS DROPPED BELOW BOTTOM OF AQUIFER

PROJECT: CHET BOWERS FILE: 1 LOCATION: SPENCER BUTTE	DRAWDOWN GRAPH
LANE COUNTY MANAGEMENT	FIGURE 1

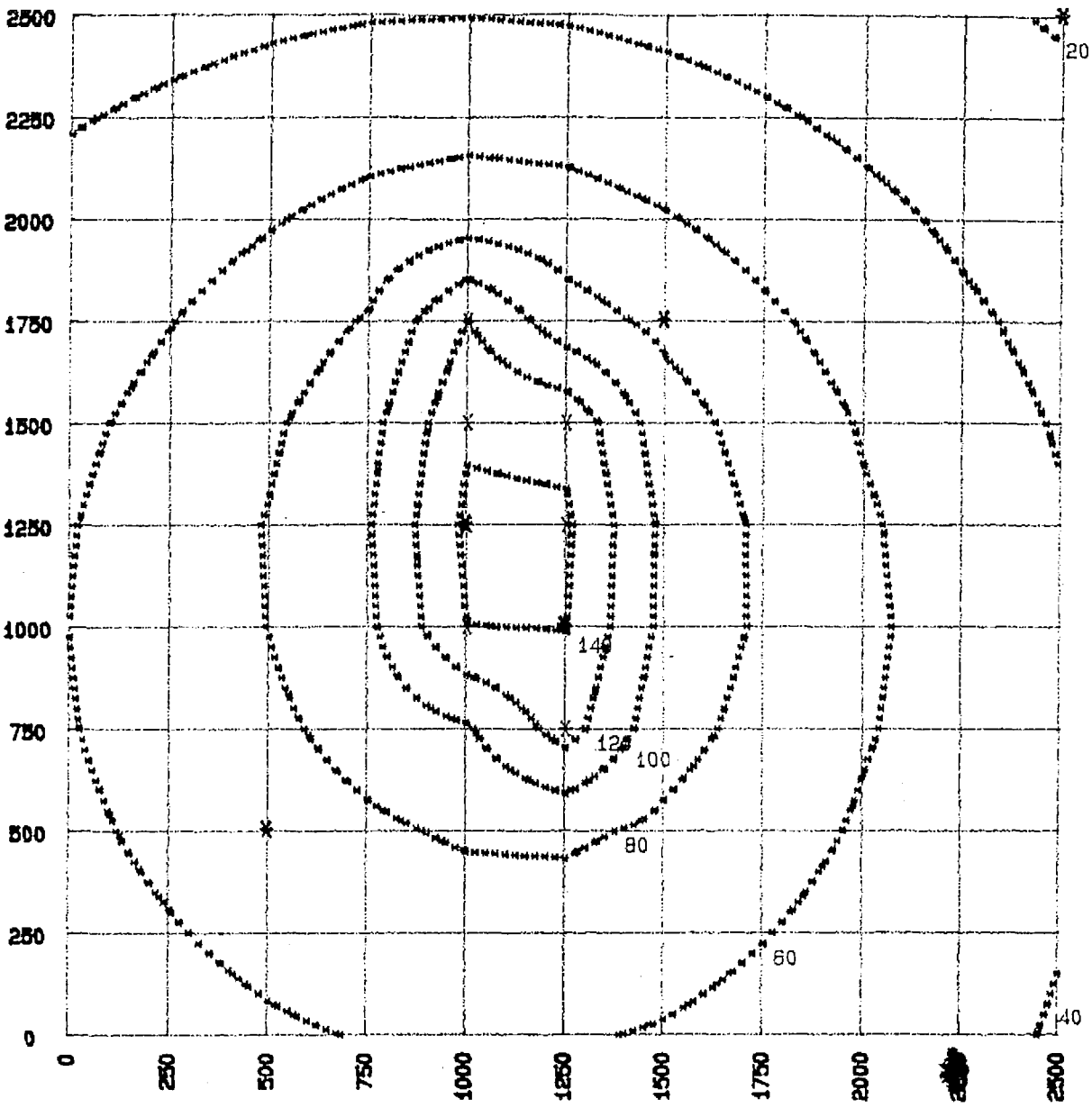


GROUNDWATER LEVEL AFTER 5 YEARS OF PUMPING

NOTE: SCALE OF X AND Y AXES DIFFERS FROM THAT OF Z AXIS

PROJECT: CHET BOWERS FILE: 1 LOCATION: SPENCER BUTTE	GROUNDWATER LEVEL SHOWING EFFECTS OF PUMPING
LANE COUNTY MANAGEMENT	FIGURE 2

INTERPOLATED CONTOURS



X COORDINATE DISTANCE (ft)

LEGEND:
* PRODUCTION WELL
O OBSERVATION WELL
X RECHARGE IMAGE WELL
+ BARRIER IMAGE WELL
A OTHER
* NODE SHOWN ON GRAPH

1.56
WATER TABLE CONTOUR

PROJECT: CHET BOWERS FILE: 1 LOCATION: SPENCE BUTTE	WATER LEVEL CONTOURS AFTER 45 YEARS OF PUMPING
LANE COUNTY MANAGEMENT	FIGURE 3

CHESTER BOWERS PARTITION

ATTACHMENT 4 PG. 1

WELL LOGS MAP 18-03-19

NAME	GPM	DEPTH	DRAW/HR.
Grossman	35	128'	38'/1.5
Romania	50	175	173/1
Shoemaker	5	300	225/1
Valentine	5	200	140/1
Teague	4.5	300	261/1
Ruiter	5.5	430	260/4
Teague	5	360	322/1
Robbins	6	260	200/1
Modesitt	NONE	—	—
Teague	9.5	105	77/1
Pruett	9	155	112/1
Shoemaker	.7	345	162/1
Ruiter	5.5	430	260/2
Robbins	5	225	166/1
Johnson	.5	315	55/1
Johnson	30	215	35/1
Johnson	20	120	20/2

BOWERS PARTITION

ATTACHMENT 4 Pg. 2

WELL LOGS MAP 18-03-30

NAME	GPM	DEPTH	DRAW / HR.
Hunter	18	300'	295'/1
Jackson	6	173	173/1
Petit	3	230	180/1
Tupper	.5	725	645/1
Tupper	4	90	50/1
Seavey	4	330	290/1
King	8.5	180	160/1
Seubert	.5	450	450/1
King	6.5	150	136/1
Sheets	10	165	115/2
Carpenter	10	318	68/2
Minshall	.5	350	242/2
Henningsguard	6	305	190/4
Minshall	NONE	395	—
Moser	1	500	466/2
Seber	25	285	180/1
Jackson	8/hr.	300	—
Ward	.75	450	392/1
Steinmuller	7.5	110	100/1
Rankin	5	248	240/1
Mooney	15	165	101/1
Ball	6	128	128/1
Hisey	3	220	155/1
Jones	20	32	10/1

BOWERS PARTITION

ATTACHMENT 4 PG. 3

WELL LOGS MAP 18-03-30

NAME	GPM	DEPTH	DRAW/HR.
Newell	20	60	45/1
Collins	5.5	105	45/1
Collins	2.5	360	110/1
Kinney	10	41	15/2
Holdrice	4	220	190/1
Zdroy	1	350	245/1
Fergerson	1	300	200/1
Petit	10	105	80/1
Olsrud	1.5	200	170/1
Morritt	8	80	63/1
Rodman	30	185	162/1
Ward	5	95	55/1
Carpenter	20	305	236/1
Rainey	1	345	26/1
Wood	3	425	150/1
Henningsguard	15	190	126/1
Mc Cornack	15	230	100/1
Ball	1.5	254	194/1
Andrews	60	305	46/1
King	15	124	67/1
Steinmuller	16	225	180/1
Marquess	11	260	200/1
Koch	15	95	65/1
Lewis	15	135	100/1
King	3	250	55/1

BOWERS PARTITION

ATTACHMENT 4 Pg. 4

WELL LOGS MAP 18-03-30

NAME	GPM	DEPTH	DRAW/HR.
Flodeck	10	74'	60/1
Jackson	1	300	100/8

SUMMARY OF WELLS, SECTIONS 19 AND 30

TOTAL 69 WELLS

RANGE 0-60 GPM

AVERAGE 9.6 GPM/WELL

MEDIAN 6 GPM

	#	%
DRY	2	3%
1-5 GPM	32	46%
6-10 GPM	16	23%
11+ GPM	19	28%
	69	100%

Aug. 28, 1985

WELL TESTING RECORD

Sheet 1 of ___

☑ Pumping Well No. #1

☐ Observation Well No. _____

Test Conducted from 11:05 A.M. to 1:00 A.M. (including recovery)

Well Location 18-03-19/1301

Ground Surface Elevation _____

Measuring Point Top of sanitary seal lip

Elevation of Measuring Point _____

Project _____

Job No. _____

Measuring Instruments:

Discharge Rate 5 gal per minute - flow value

Water Level 61.2'

Inspector/Engineer/Geologist _____

Date / Time	Static Period		Pumping Period					Recovery Period				Comments
	TIME PRIOR TO START OF PUMPING (min)	STATIC WATER ELEVATION (feet)	TIME SINCE START OF PUMPING (min)	WATER ELEVATION (feet)	MEASURED DRAWDOWN (feet)	MEASURED DISCHARGE RATE (gpm)	CUMULATIVE DISCHARGE (gal)	TIME SINCE END PUMPING (min)	WATER ELEVATION (feet)	RESIDUAL DRAWDOWN (feet)	MEASURED RECOVERY (feet)	
11:05 AM	.00	61.2										
	.30	61.7										
	1.00	61.8										
	1.30	61.10										
	2.00	62.00										
	2.30	62.1										
	3.00	62.3										
	3.30	62.5										
	4.00	62.8										
	4.30	63.00										
	5.00	63.4										
	10.00	63.11										
	15.00	64.5										
	20.00	65.00										
	25.00	65.6										
	30.00	65.11										
	35.00	66.1										

WELL TESTING RECORD

Sheet 2 of _

☑ Pumping Well No. #1

☐ Observation Well No. _____

Test Conducted from _____ to _____

Well Location _____

Ground Surface Elevation _____

Measuring Point _____

Elevation of Measuring Point _____

Project _____

Job No. _____

Measuring Instruments:

Discharge Rate _____

Water Level _____

Inspector/Engineer/Geologist _____

Date / Time	Static Period		Pumping Period					Recovery Period				Comments
	TIME PRIOR TO START OF PUMPING (min)	STATIC WATER ELEVATION (feet)	TIME SINCE START OF PUMPING (min)	WATER ELEVATION (feet)	MEASURED DRAWDOWN (feet)	MEASURED DISCHARGE RATE (gpm)	CUMULATIVE DISCHARGE (gal)	TIME SINCE END PUMPING (min)	WATER ELEVATION (feet)	RESIDUAL DRAWDOWN (feet)	MEASURED RECOVERY (feet)	
			40.00	66.11								
			45.00	67.3								
			50.00	67.8								
			55.00	68.0								
			60.00	68.6								
			65.00	68.10								
			80.00	69.8								
			95	70.6								
			110	71.4								
			125	72.2								
			140	72.10								
			165	73.7								
			180	74.4								
			195	74.11								
			255	77.1								
			315	79.1								
			375	80.7								

WELL TESTING RECORD

☑ Pumping Well No. #1

☐ Observation Well No. _____

Test Conducted from _____ to _____

Well Location _____

Ground Surface Elevation _____

Measuring Point _____

Elevation of Measuring Point _____

Project _____

Job No. _____

Measuring Instruments:

Discharge Rate _____

Water Level _____

Inspector/Engineer/Geologist _____

Date / Time	Static Period		Pumping Period					Recovery Period				Comments
	TIME PRIOR TO START OF PUMPING (min)	STATIC WATER ELEVATION (feet)	TIME SINCE START OF PUMPING (min)	WATER ELEVATION (feet)	MEASURED DRAWDOWN (feet)	MEASURED DISCHARGE RATE (gpm)	CUMULATIVE DISCHARGE (gal)	TIME SINCE END PUMPING (min)	WATER ELEVATION (feet)	RESIDUAL DRAWDOWN (feet)	MEASURED RECOVERY (feet)	
			435	82			545	8:00 pm	84.4			
			495	83.2			545	1.00	82.10			
		8:00 pm	545	84.4			[illegible]	2.00	82.10			
							[illegible]9	3:00	82.10			
							549	4.00	82.10			
							550	5.00	82.10			
							555	10.00	82.8			
							560	15.00	82.6			
							[illegible]5	20.00	82.4			
							570	25	82.2			
							575	30	82.1			
							580	35	82.0			
							585	40	81.10			
							590	45	81.9			
							595	50	81.8			
							600	55	81.7			
							60[illegible]	60	8[illegible]			

WELL TESTING RECORD

☑ Pumping Well No. #1

☐ Observation Well No. _____

Test Conducted from _____ to _____

Well Location _____

Ground Surface Elevation _____

Measuring Point _____

Elevation of Measuring Point _____

Project _____

Job No. _____

Measuring Instruments:

Discharge Rate _____

Water Level _____

Inspector/Engineer/Geologist _____

Date / Time	Static Period		Pumping Period					Recovery Period				Comments
	TIME PRIOR TO START OF PUMPING (min)	STATIC WATER ELEVATION (feet)	TIME SINCE START OF PUMPING (min)	WATER ELEVATION (feet)	MEASURED DRAWDOWN (feet)	MEASURED DISCHARGE RATE (gpm)	CUMULATIVE DISCHARGE (gal)	TIME SINCE END PUMPING (min)	WATER ELEVATION (feet)	RESIDUAL DRAWDOWN (feet)	MEASURED RECOVERY (feet)	
							665	120	80.8			
								180	80.0			
								240	79.3			
								300	78.9			
								660	79.3			

WELL TESTING RECORD

Sheet 1 of ___

☐ Pumping Well No. _____

☑ Observation Well No. # 1

Project _____

Job No. _____

Test Conducted from _____ to _____

Measuring Instruments:

Well Location _____

Discharge Rate 5 gal - constant flow valve

Ground Surface Elevation _____

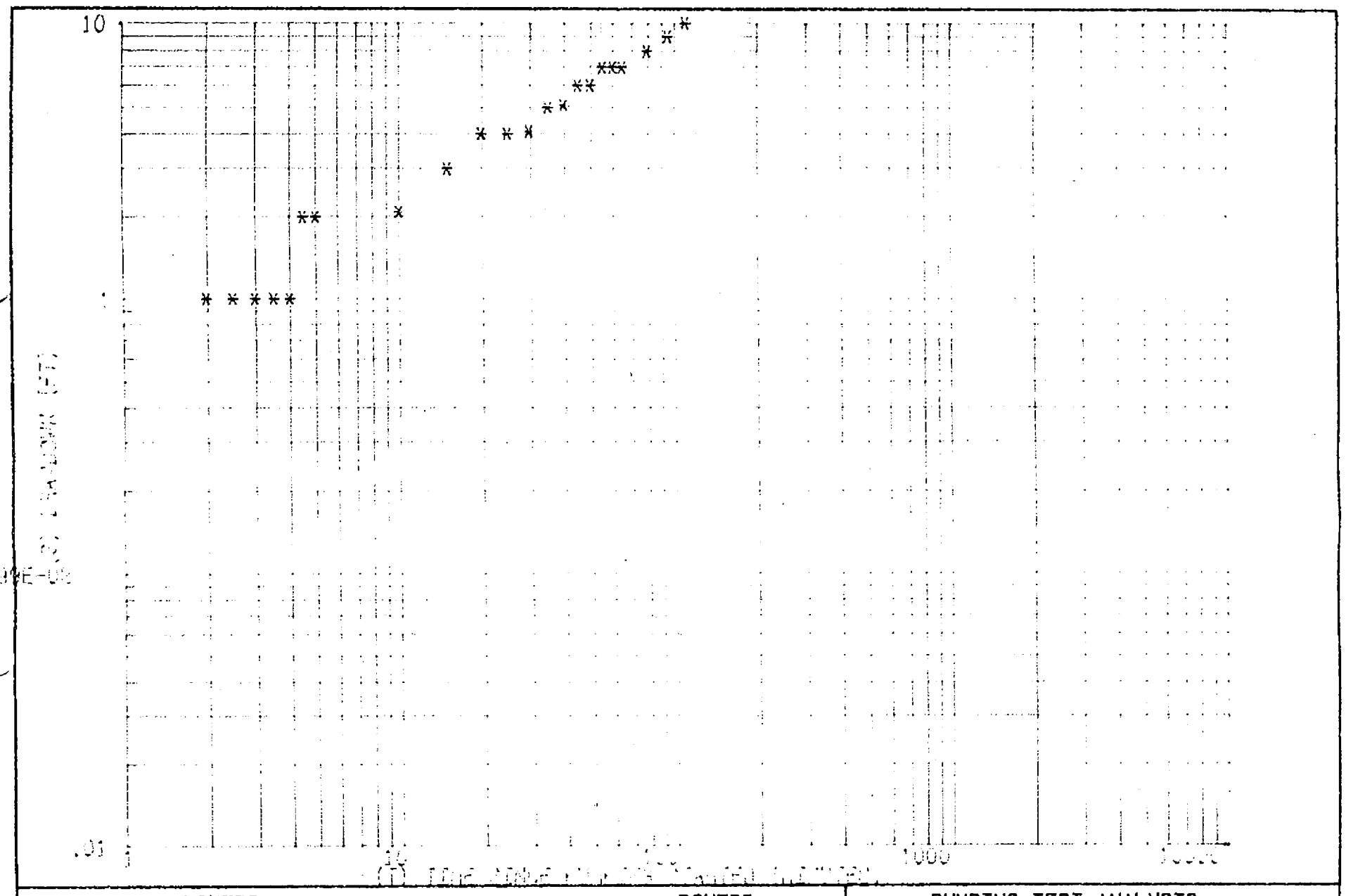
Water Level 121.6"

Measuring Point top Sanitary seal lip

Elevation of Measuring Point _____

Inspector/Engineer/Geologist _____

Date / Time	Static Period		Pumping Period					Recovery Period				Comments
	TIME PRIOR TO START OF PUMPING (min)	STATIC WATER ELEVATION (feet)	TIME SINCE START OF PUMPING (min)	WATER ELEVATION (feet)	MEASURED DRAWDOWN (feet)	MEASURED DISCHARGE RATE (gpm)	CUMULATIVE DISCHARGE (gal)	TIME SINCE END PUMPING (min)	WATER ELEVATION (feet)	RESIDUAL DRAWDOWN (feet)	MEASURED RECOVERY (feet)	
a.m.												
11.05	.00	121.6"	10.00	121.4"				8:00 p.m.				
	.30		170.00	121.4				65 min	121			
			210.00	121.3				125	121			
			265.	121.2				185	121			
			325	121.2								
			385	121.2								
			445	121.2								



PROJECT	BOWERS	FILE	BOWERS	PUMPING TEST ANALYSIS
LOCATION	1803190001301	WELL No.	1	TYPE CURVE SOLUTION
				FIGURE 2

Aug. 29

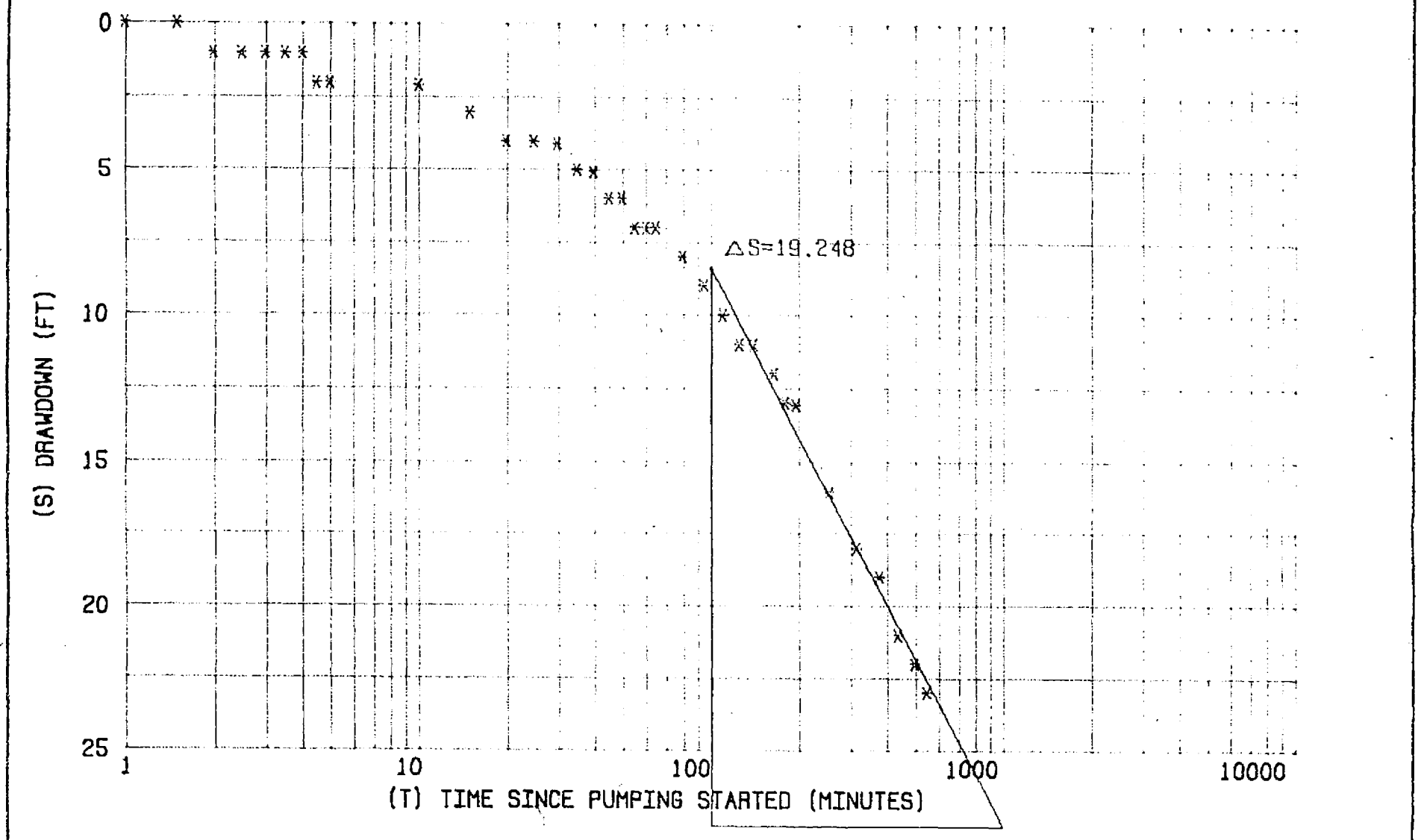
Ralph –

Here is the data on the well Test. I pumped until 8:00 p.m. and recorded the recovery until 1:00 A.M. I checked recovery again at 7:30 this morning.

I assume that this material can simply be added TO the original application I submitted some months ago. If I have TO fill out a new application please let me know at either 686-5064 (office) or 485-3462 (home).

Chet Bowers

PUMPING TEST ANALYSIS STRAIGHT LINE APPROXIMATION METHOD



PROJECT: BOWERS FILE: BOWERS LOCATION: 1803190001301	WELL NO.: 1 Q= 5 USGPM S.W.L.= 61.2	ΔS= 19.248 FT T= 69 USGPD/FT S=

FIGURE 1

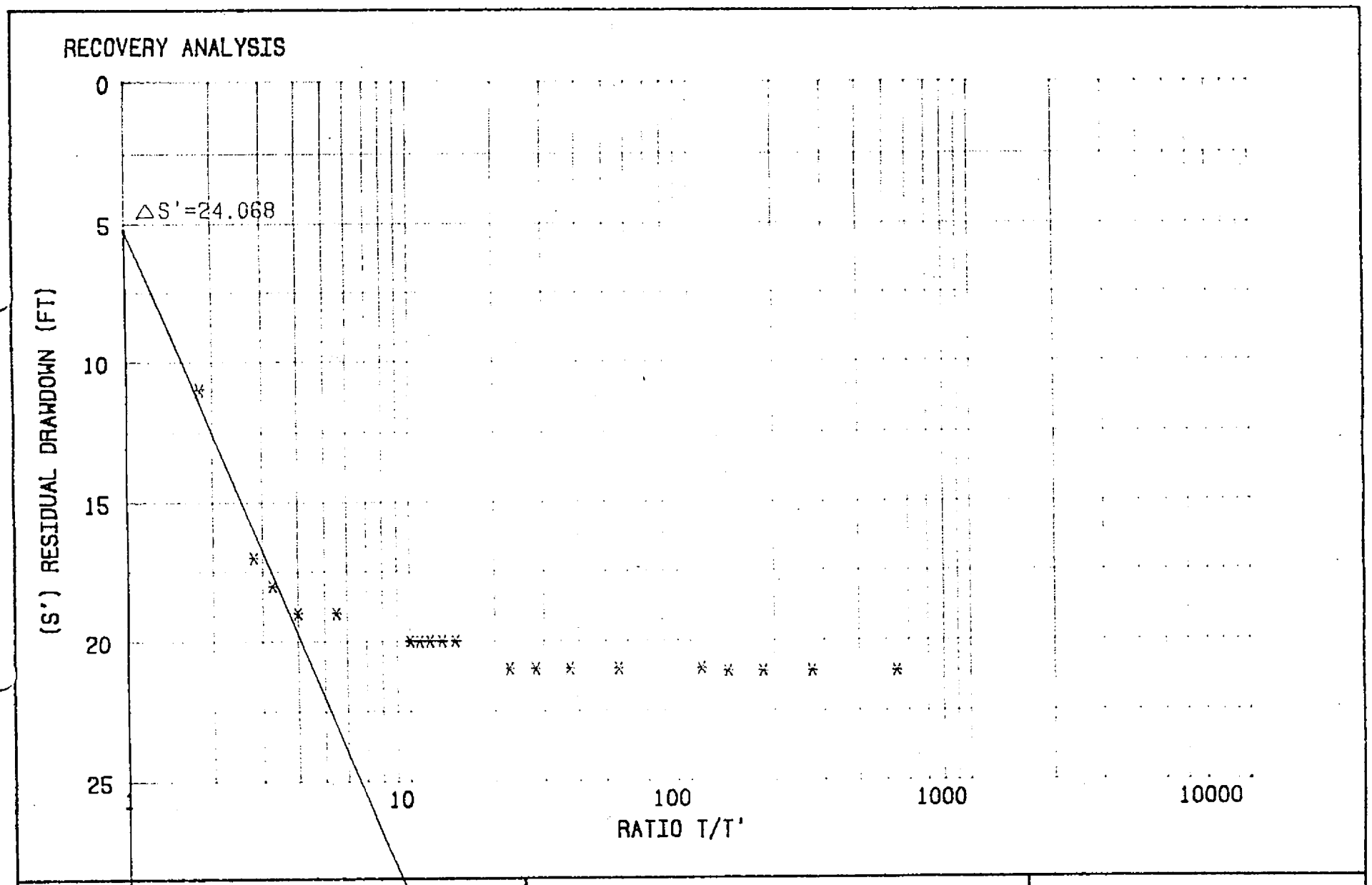

RECOVERY ANALYSIS
0
5
10
15
20
25
(S') RESIDUAL DRAWDOWN (FT)
△S'=24.068
10
100
1000
10000
RATIO T/T'
PROJECT: BOWERS
FILE: BOWERS
LOCATION: 1803190001301
WELL NO.: 1
Q= 5 USGPM
S.W.L.= 61.2
△S'=24.068 FT
T= 55 USGPD/FT
S=

FIGURE 3

PUMP TEST - DRAWDOWN DATA

PROJECT: BOWERS
LOCATION: 18031900001301
DATUM POINT:
PUMPING RATE: 5 USGPM
AQUIFER THICKNESS: 100
CONDITIONS: CONFINED

FILE NO.: BOWERS
WELL NO.: 1
ELEV. OF DATUM POINT: 1100
STATIC WATER LEVEL: 61.2
R = ----- FROM
SCREEN INTERVAL: 30 TO 160

TIME			ELAPSED TIME	WATER LEVEL	DRAWDOWN
DY	HR	MN	t (MIN)	(ft)	s (ft)
28	11	5	0.00	61.000	0.000
28	11	6	0.50	61.000	0.000
28	11	6	1.00	61.000	0.000
28	11	7	1.50	61.000	0.000
28	11	7	2.00	62.000	1.000
28	11	8	2.50	62.000	1.000
28	11	8	3.00	62.000	1.000
28	11	9	3.50	62.000	1.000
28	11	10	4.50	63.000	2.000
28	11	10	5.00	63.000	2.000
28	11	15	10.00	63.083	2.083
28	11	20	15.00	64.000	3.000
28	11	25	20.00	65.000	4.000
28	11	30	25.00	65.000	4.000
28	11	35	30.00	65.083	4.083
28	11	40	35.00	66.000	5.000
28	11	45	40.00	66.083	5.083
28	11	50	45.00	67.000	6.000
28	11	55	50.00	67.000	6.000
28	12	0	55.00	68.000	7.000
28	12	5	60.00	68.000	7.000
28	12	10	65.00	68.000	7.000
28	12	25	80.00	69.000	8.000
28	12	40	95.00	70.000	9.000
28	12	55	110.00	71.000	10.000
28	13	10	125.00	72.000	11.000
28	13	25	140.00	72.000	11.000
28	13	50	165.00	73.000	12.000
28	14	5	180.00	74.000	13.000

LANE COUNTY MANAGEMENT

PUMP TEST - DRAWDOWN DATA

PROJECT: BOWERS
LOCATION: 1803190001301
DATUM POINT:
PUMPING RATE: 5 USGPM
AQUIFER THICKNESS: 100
CONDITIONS: CONFINED

FILE NO.: BOWERS
WELL NO.: 1
ELEV. OF DATUM POINT: 1100
STATIC WATER LEVEL: 61.2
R = ----- FROM
SCREEN INTERVAL: 30 TO 160

TIME			ELAPSED TIME	WATER LEVEL	DRAWDOWN
DY	HR	MN	t (MIN)	(ft)	s (ft)
28	14	20	195.00	74.083	13.083
28	15	20	255.00	77.083	16.083
28	16	20	315.00	79.000	18.000
28	17	20	375.00	80.000	19.000
28	18	20	435.00	82.000	21.000
28	19	20	495.00	83.000	22.000
28	20	10	545.00	84.000	23.000

LANE COUNTY MANAGEMENT

PUMP TEST - RECOVERY DATA

PROJECT: BOWERS
LOCATION: 1803190001301
DATUM POINT:
PUMPING RATE: 5 USGPM
AQUIFER THICKNESS: 100
CONDITIONS: CONFINED

FILE NO.: BOWERS
WELL NO.: 1
ELEV. OF DATUM POINT: 1100
STATIC WATER LEVEL: 61.2
R = ----- FROM
SCREEN INTERVAL: 30 TO 160

TIME			PUMPING STARTED	PUMPING ENDED	RATIO	WATER LEVEL	RESIDUAL DRAWDOWN
DY	HR	MN	t (MIN)	t' (MIN)	t/t'	(ft)	(ft)
28	20	10	545.00	0.00	0.00	84.000	23.000
28	20	11	546.00	1.00	546.00	82.100	21.100
28	20	12	547.00	2.00	273.50	82.100	21.100
28	20	13	548.00	3.00	182.67	82.100	21.100
28	20	14	549.00	4.00	137.25	82.100	21.100
28	20	15	550.00	5.00	110.00	82.000	21.000
28	20	20	555.00	10.00	55.50	82.000	21.000
28	20	25	560.00	15.00	37.33	82.000	21.000
28	20	30	565.00	20.00	28.25	82.000	21.000
28	20	35	570.00	25.00	22.80	82.000	21.000
28	20	50	585.00	40.00	14.63	81.000	20.000
28	20	55	590.00	45.00	13.11	81.000	20.000
28	21	0	595.00	50.00	11.90	81.000	20.000
28	21	5	600.00	55.00	10.91	81.000	20.000
28	21	10	605.00	60.00	10.08	81.000	20.000
28	22	10	665.00	120.00	5.54	80.000	19.000
28	23	10	725.00	180.00	4.03	80.000	19.000
29	0	10	785.00	240.00	3.27	79.000	18.000
29	1	10	845.00	300.00	2.82	78.000	17.000
29	7	10	1205.00	660.00	1.83	72.000	11.000

LANE COUNTY MANAGEMENT

PUMPING TEST COEFFICIENTS

PROJECT: BOWERS FILE NO.: BOWERS
LOCATION: 1803190001301

WELL # 1

DRAWDOWN:

delta s = 21.71525 FT T = 60.78677 USGPD/FT S = 0

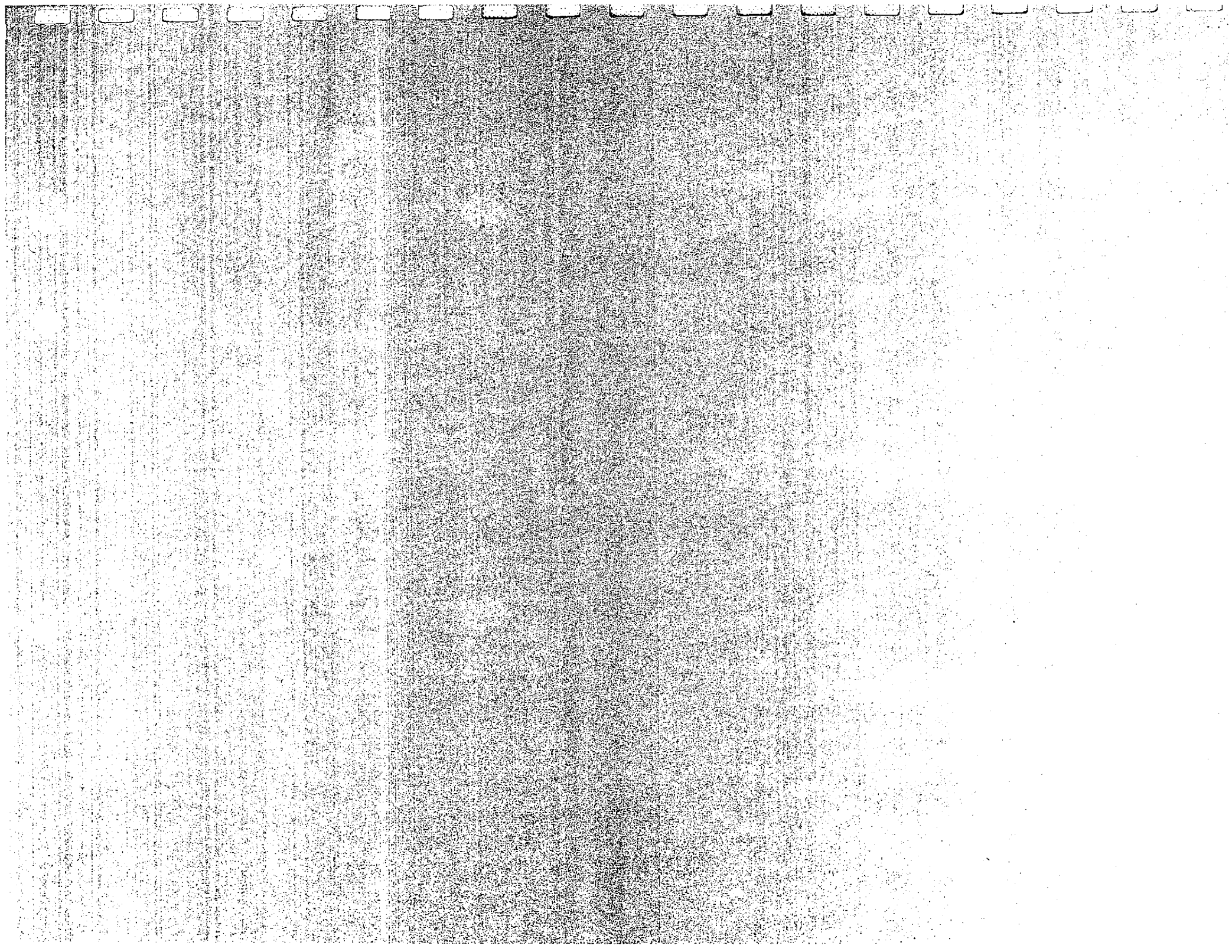
RECOVERY:

delta s = 24.06801 FT T = 54.84458 USGPD/FT S = 0

LANE COUNTY MANAGEMENT

ATTACHMENT 2

DISSCUSSION ON LOCAL WATER SUPPLY AND AQUIFER ANALYSIS



EGR & Associates, Inc.

2535B Prairie Road
Eugene, Oregon 97402
(541) 688-8322
Fax (541) 688-8087

FILE COPY

December 19, 2003

Mr. Steve Cornacchia, esq.
Herschner, Hunter, LLP
180 E. 11th Ave.
Eugene, OR 97401

RE: Karen Dahlen property
water supply

Dear Mr. Cornacchia:

As you requested, I have reviewed the letters and other written testimony supplied by area residents regarding water supply and my aquifer analysis, which concluded there was sufficient water supply for the proposed development. Specifically, problems these residents have had with their water supply and wells that have reportedly failed over time. There are only 3 modes of failure for wells: 1) the equipment in the well fails so the homeowner can no longer extract water from the well; 2) the well bore itself becomes damaged in some way which prevents or restricts water from the aquifer entering the well, and finally; 3) the aquifer into which the well is drilled is mined of water (dewatered or significantly "dried up"). It is my conclusion and opinion, based upon my earlier analysis and the attached tables and charts, that there is sufficient water for this proposed development and little chance of significant adverse impact between neighboring wells.

Fortunately, there is very effective and simple ways to test which of the above modes of failure is prevalent in any given area. But first a few facts, and definitions are important:

1. An AQUIFER is any geologic unit from which usable quantities of water can be removed. Usable quantities is defined by the user:
    a. Since a dwelling, on average only uses about 450 gallons per day (gpd) or less (excluding irrigation, most dwellings will use less than 250 gpd), then the flow for a domestic well need only average about 1/3 gallon per minute (gpm) for every 24 your period.
    b. Irrigation requires far more water than household use, so an aquifer that may readily support homes will not support irrigation.
2. Static water level is the level to which water will rise in a well when no pumping or disturbance to the water in the well is occurring. Pumping level is the water level when the pump is running and it constantly changes over time and in response to different pumping rates.
3. Yield, or well flow, is the maximum amount of water which can be extracted from a well.

4. Pumping rate is the amount of water per unit time which is being removed from a well. Usually expressed in gallons per minute(gpm) but can be expressed in gallons per day (gpd). It can for limited periods of time exceed the well yield.
5. Today's homes with multiple bathrooms and washing machines commonly will have instantaneous water demands that exceed 5 gpm and often exceed 10 gpm. Thus, the instantaneous demand (5 to >10 gpm) is far greater than the average demand (~1/3 gpm).
6. Aquifers have two basic characteristics which dictate their usability: 1) how quickly water moves through the aquifer, and 2) how much water is stored in them.
7. Aquifers come in all types: large flow with little storage (basalts), low flow with lots of storage (silt and clay dominated aquifers), large flow and large storage (open large gravels), and low flow with low storage (fractured rock aquifers).
8. The bedrock areas of Lane County, like this area, are fractured rock aquifers.
9. All groundwater in bedrock in Lane County moves and is stored in cracks and fractures in the rock. There is no such thing as an underground river or lake in this part of Lane County.

So how do we test what caused a well to fail? First we test whether the well had equipment failure. When people report their wells "go dry" and it is an equipment related problem they simply replace the equipment. But if either the well is damaged or the aquifer goes dry then people re-drill the old well or drill another well. Of the 199 wells drilled in the area 29 are known to be replacement wells (second well on the same property), re-drills, or deepenings of existing wells. Since nobody drills unless necessary, we can safely assume that a second well on a property was to replace a previous well that no longer is working, and not from simple equipment failures.

The attached table, listing those properties with verifiably more than one well drilled on the property, shows the wells with duplicate names and locations but excludes wells drilled within a few days of each other, monitoring wells, and wells where static water was not reported (dry holes). That table demonstrates that second wells generally have static water levels above the static water level of the previous well as often as they have the static water level below the previous well. This indicates the water table is not falling in any consistent manner.

Secondly, testing for either well bore damage or the aquifer going dry is the same test since the two methods are generally mutually exclusive. For example, if the aquifer as a whole is significantly being depleted of water from storage, or is being "dried up", then the static water level for new wells must over time fall; we would also expect to see newly drilled wells showing diminished initial yields over time; the depth at which water was first found would increase over time; and over time the depth of newly drilled wells would increase as people seek water deeper and deeper. If these characteristics are NOT seen, then we know the aquifer is still relatively full of water and the issue must be at the well bore or local to the wells themselves.

A series of charts is provided which shows static water levels, yields, depths to first water, and well completion depths plotted over time. From the static water level chart, two things are readily apparent: 1) static water levels are highly variable, and 2) over time neither the variability nor the range of those static water levels below ground surface have significantly changed or shown general declines. Thus, I conclude that since static water levels are not falling over time, the aquifer is not being depleted. Similarly, and in support of that conclusion, the charts for yield, depth at which water is first found, and the depth of completed wells all show the same characteristics of variability, and a consistency within that variability that clearly indicates the aquifer is not being depleted.

If the problem is not the aquifer, then what is the problem at the well bore that causes well failure. First a well is a mechanical system (with no moving parts, but lots of moving water). All wells require maintenance, occasional repair, and eventually, replacement. What then is the damage that causes wells to go dry or loose production. First, wells can collapse due to spalling, sloughing, and processes of weathering. The material from the wall of the well can accumulate around the pump, or within the well bore, and plug the well. Wells in bedrock areas are often lined to reduce the impact of this action. The most likely cause of severe well problems in Lane County, however, is the accumulation of iron oxides at the well bore.

Iron is dissolved in varying amounts in all groundwater found in the bedrock areas of Lane County. As the aquifer water approaches the well bore it rapidly speeds up and looses pressure. The action of drawing the water level down in the well also pulls outside air into the well thus introducing oxygen into the well. These two changes cause the iron to chemically precipitate in a form that is very insoluble. The greater the pressure change and draw down the greater the chemical precipitation potential. Since the small cracks that supply water are limited in size and number, a relatively modest amount of precipitation can begin to seal off those cracks. As more and more cracks are sealed, the water flows faster through the remaining cracks thus, accelerating the plugging of the well.

How is this action prevented? It cannot be stopped, but it can be slowed significantly. By installing pumps that only pump a fraction of the well's potential yield limits draw down, and thus slows the entrance velocity of the water and oxygen introduction into the well bore. Usually this requires installing a storage tank, and pumping the well for much longer periods at low production. Then the storage tank is pumped for all the much higher flow rates for instantaneous demand necessary to run the dwelling. It also means that irrigation of any significant amount must be avoided.

As an example, a well that produces 7 gallons per minute should only be pumped at about 2 to 4 gallons per minute maximum (less than the instantaneous demand of the household!). A storage tank would be used. The result is a well that might normally need to be replaced in anything between 10 to 40 years may last for 40 to 100 years. Reducing water use is not a protection for the aquifer or the neighbors water supply, it is protective of the well itself and the water supply it provides.

Therefore I conclude that based upon my earlier analysis, and reviewing the data and statistic which were gleaned from these tables and charts, my analysis strongly supports that there is sufficient water supply for the proposed development, with little probability that adverse impacts will occur between neighboring wells.

If I can be of any further assistance in clarifying this matter please let me know.

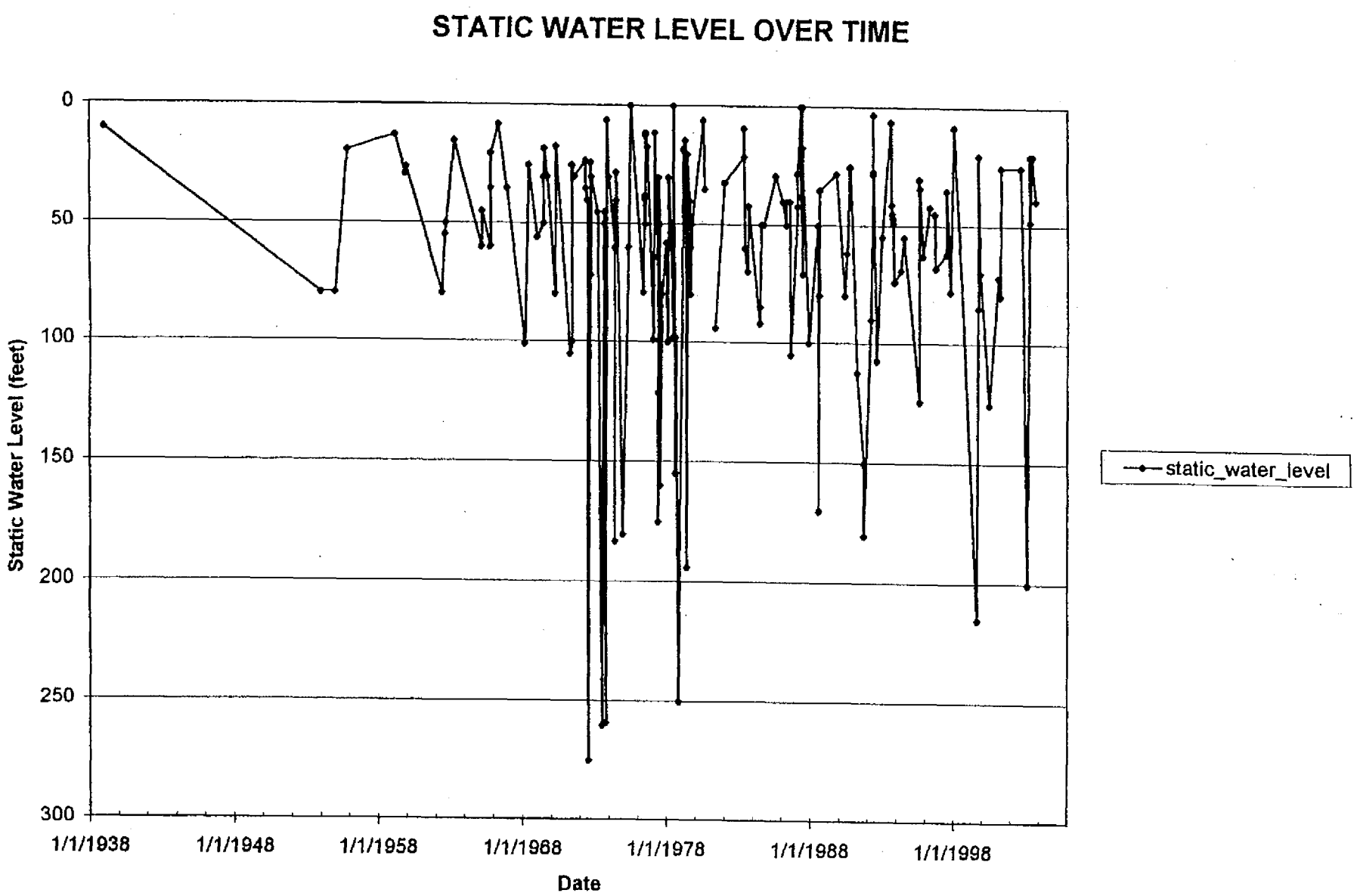
Sincerely,

Ralph Christensen
Senior Geologist
EGR & Associates, Inc.

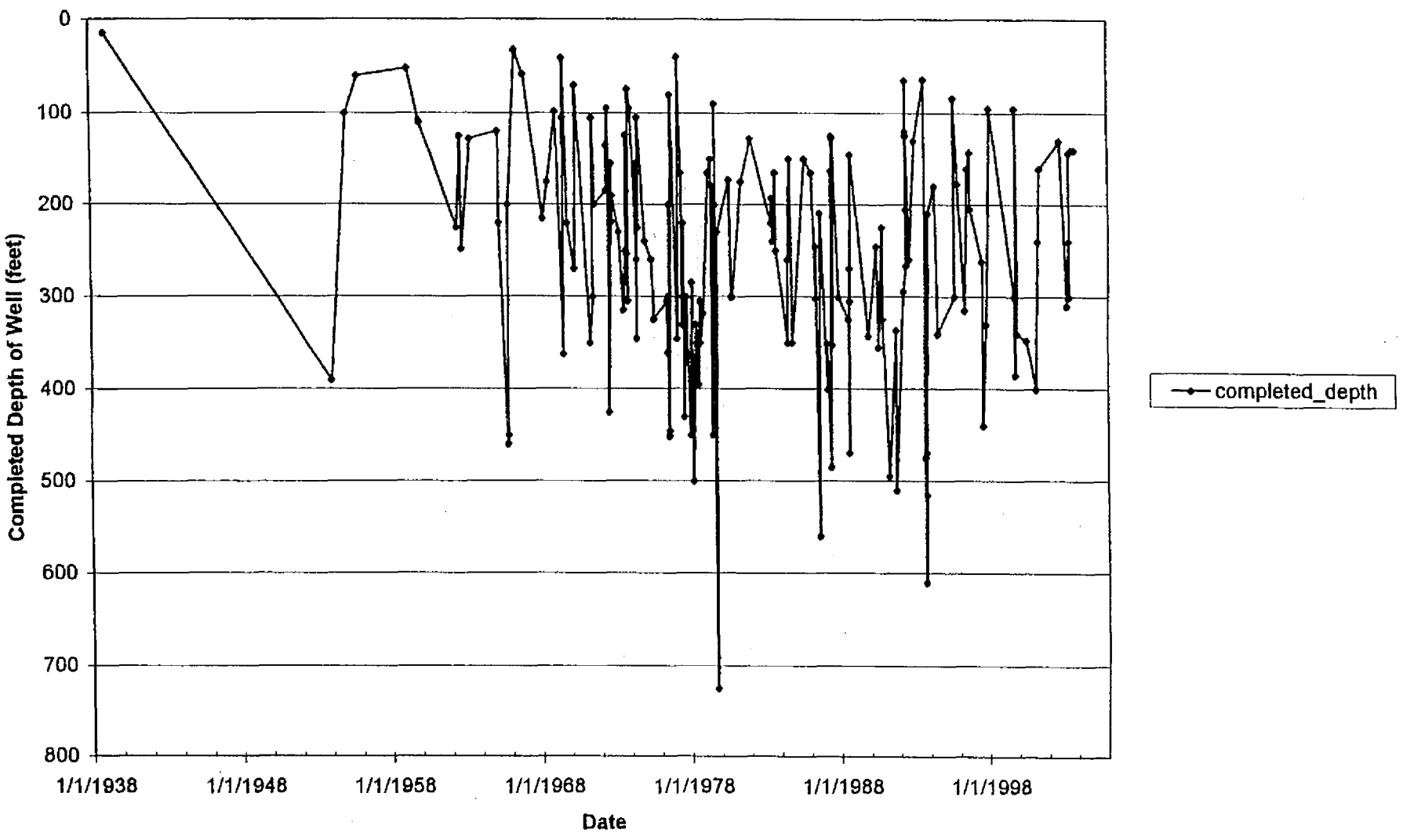


TABLE 1 - Multiple wells identified on single property

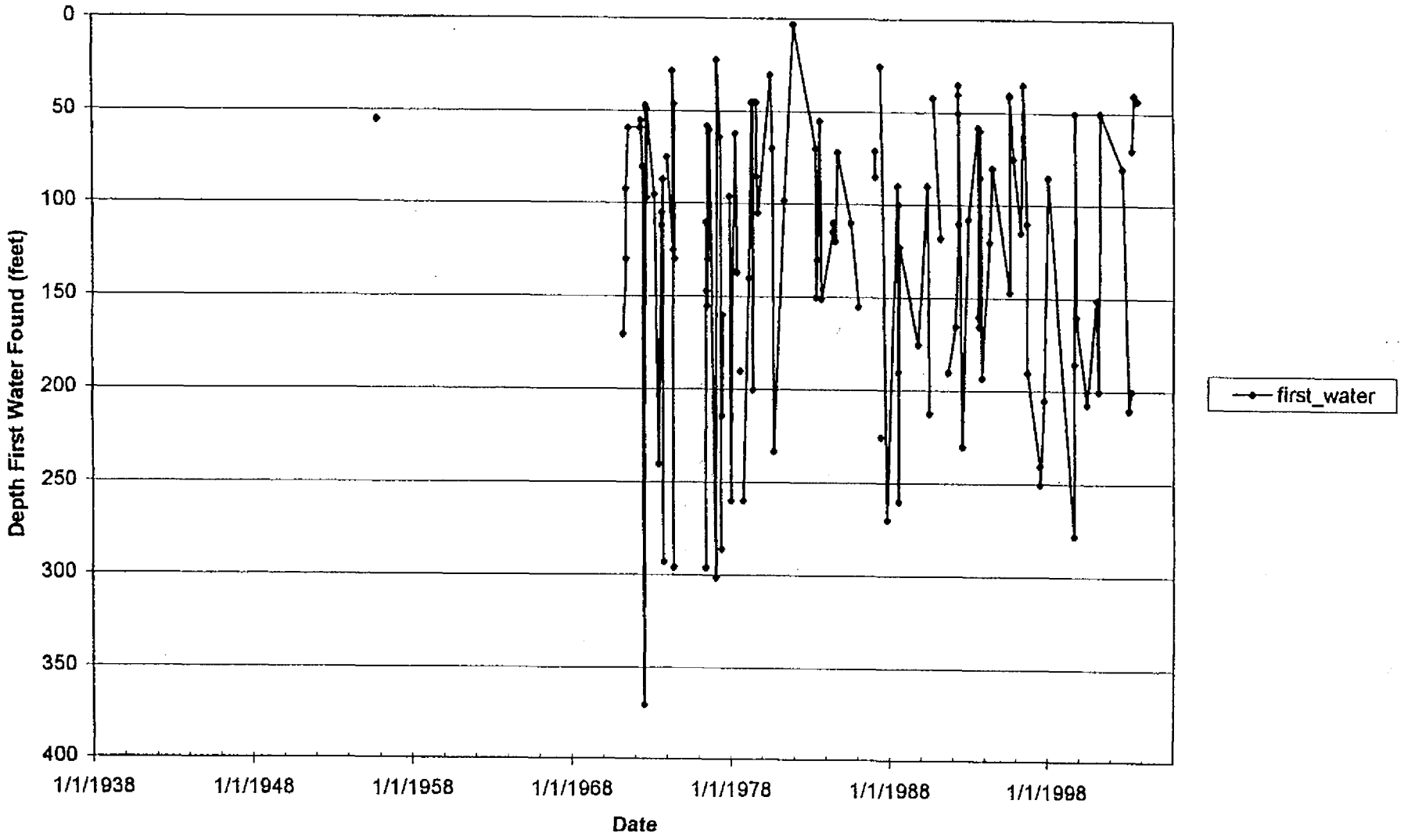
well log id	twp	twp char	rng	rng char	sec	qtr 40	qtr 160	tax_lot	name_last	name_first	first water	completed depth	complete date	street	type of log	static water level	yield	aller	deep	new	dom	irrig	Total # at dup. wells	Wells # drilled deeper	New 2nd wells #
2978	18	S	4	W	13	NE	NW	1407	MCKENZIE	BARRY	35	85	6/3/1992	1089 BROOKSI	W	28	20			X	X				
2977	18	S	4	W	13	NE	NW	1407	MCKENZIE	BARRY	35	205	6/4/1992	1089 BROOKSI	W	3	3			X	X		16	5	11
24189	18	S	4	W	13	NW	SW	1407	MCKENZIE	BARRY	40	84	5/25/1995	1088 BLANTON	W	30	2			X	X		SWL Lower		
24242	18	S	4	W	13	NW	SW	140700000	MCKENZIE	BARRY	41	84	5/26/1995		W	34	4			X	X				
18344	18	S	3	W	18	SW	NE		EUGENE MEMORIAL GARDENS, INC		0	380	12/31/1953		W	80	20			X		X	2		2
18345	18	S	3	W	18	SW	NE		EUGENE MEMORIAL GARDENS, INC		0	100	12/31/1954		W	80	17			X		X	SWL Same		
18381	18	S	3	W	19	NW	SW		JOHNSON	BOB A	0	120	3/8/1965		W	80	20			X	X				
18380	18	S	3	W	19	NW	SW		JOHNSON	BEN A	0	215	3/1/1968		W	101	30		X		X		11	1	10
18358	18	S	3	W	19		SW		ROBBINS	HARRY	130	225	7/17/1974		W	40	5			X	X		SWL Higher		
18352	18	S	3	W	19		SW		ROBBINS	HARRY	0	260	5/28/1975		W	60	6		X		X				
1334	18	S	3	W	19				SHOEMAKER	R L	298	345	6/12/1974	535 KINGSWOO	W	163	7			X	X				
18348	18	S	3	W	19		SW	350700000	SHOEMAKER	RICHARD	70	300	9/12/1980		W	35	5			X	X				
18354	18	S	3	W	19				TEAGUE	TOM	48	105	7/18/1974		W	28	9.5			X	X				
18350	18	S	3	W	19				TEAGUE	TOM	147	380	7/2/1976		W	36	5		X						
18351	18	S	3	W	19				TEAGUE	TOM	110	300	7/6/1976		W	39	4.5			X	X				
17382	18	S	4	W	25				BUDMAN	L W		98	1/13/1969		W	58	8.3		X		X				
17383	18	S	4	W	25				HUDMAN	L W		58	12/15/1966		W	35	10			X	X				
18858	18	S	3	W	30				BALL	JOHN		126	4/28/1963		W	15	6.7			X	X				
18833	18	S	3	W	30				BALL	JOHN	87	254	10/20/1973		W	60	1.5			X	X				
18842	18	S	3	W	30				CARPENTER	SCOTT	298	305	8/9/1978		W	79	20			X	X				
18840	18	S	3	W	30				CARPENTER	SCOTT	260	318	11/3/1978		W	250	10			X	X				
18810	18	S	3	W	30	NE	SE		GROAT	JIM		183	5/25/1987		W	38	10			X	X				
82328	18	S	3	W	30	NE	SE	1800	GROAT	JIM	200	240	4/25/2003	85150 SPENCE	W	20	2			X	X				
82508	18	S	3	W	30			2800	GROAT	JIM	40	140	7/7/2003	85150 SPENCE	W	20	6			X	X				
4409	18	S	3	W	30	SE	NE	304	HAGAN	MIKE	193	210	11/18/1993	GLENFIDDICH	W	74	10			X	X				
51583	18	S	3	W	30	SE	NE	305	HAGAN	MIKE	190	205	9/28/1996	GLENFIDDICH	W	65	15			X	X				
1355	18	S	3	W	30				HENNINGSGAARD	LARRY	97	210	10/12/1972	1413 SANTA R	W	72	15			X	X				
18685	18	S	3	W	30	SW	NE		HENNINGSGAARD	L B	190	305	8/23/1978		W	155	8			X	X				
18872	18	S	3	W	30	SE	SE		JACKSON	BOB		300	9/22/1977		W	80	200	X			X				
18823	18	S	3	W	30		SE		JACKSON	BOB	30	173	8/9/1980		W	6	6			X	X				
18831	18	S	3	W	30				KING	CURTIS	45	150	5/15/1979		W	14	6.5			X	X				
18829	18	S	3	W	30				KING	CURTIS	45	180	8/27/1979		W	20	8.5			X	X				
81608	18	S	3	W	30	SW	SW	305	KING	CURTIS	80	130	8/23/2002	31610 GLENFID	W	25	12			X	X				
18669	18	S	3	W	30		NW		KING	KYLE	105	250	8/13/1973		W	50	3			X	X				
18668	18	S	3	W	30		NW		KING	KYLE	112	124	8/18/1973		W	45	15			X	X				
18815	18	S	3	W	30				KING	KYLE	0	302	5/14/1986		W	50	6.5			X	X				
18814	18	S	3	W	30				KING	KYLE	0	245	5/19/1986		W	40	4.5			X	X				
82682	18	S	3	W	30	NW	SW	801	KING	KYLE	43	140	8/24/2003	85192 S WILLA	W	39	15			X	X				
18852	18	S	3	W	30				KINNEY	JOSEPH WALTER	0	41	7/17/1969		W	18	2			X	X				
18838	18	S	3	W	30				KINNEY	J W	49	190	10/27/1972		W	30	15			X	X				
18821	18	S	3	W	30	SE	SE		KINNEY	WALT	70	220	8/5/1983		W	21	1.5			X	X				
1358	18	S	3	W	30	SE	NW		LEWIS	GEO	55	135	8/8/1972	RR 4 BOX 119F	W	35	15			X	X				
3180	18	S	3	W	30	SW	NW		LEWIS	GEORGE	230	260	8/18/1982	85213 SO WILL	W	107	2.5		X		X				
18835	18	S	3	W	30				MCCORNACK	GEORGIA	95	230	4/3/1973		W	45	15			X	X				
18834	18	S	3	W	30				MCCORNACK	MRS ROD	0	240	12/27/1974		W	160	5	X			X				
18873	18	S	3	W	30		SW		MINSHALL	ROBERT	137	350	8/14/1978		W	98				X	X				
18883	18	S	3	W	30		SW		MINSHALL	ROBERT	0	350	8/8/1978		W	98		X			X				
18860	18	S	3	W	30				MOONEY	MR RICHARD	84	185	8/1/1977		W	84	15			X	X				
18813	18	S	3	W	30				MOONEY	RICHARD	0	210	8/28/1986		W	105	25			X	X				
18881	18	S	3	W	30				RANKIN	LEWIS	0	248	9/17/1982		W	50	300			X	X				
24157	18	S	3	W	30	SW	NW	400	RANKIN	LEWIS	147	300	8/24/1995	85283 S WILLA	W	124	2			X	X				
18830	18	S	3	W	30				BEUBERT	MR CHRIS	200	450	8/8/1979		W	194				X	X				
18818	18	S	3	W	30				BEUBERT	CHRISTOPHER	110	280	7/8/1984		W	85	2			X	X				
1354	18	S	3	W	30	NE	SW		SHEETS	JOHN	140	185	3/18/1979	820 1ST ST	W	18	10			X	X				
18822	18	S	3	W	30	NW	SE		SHEETS	JOHN	130	240	8/28/1983		W	60	7			X	X				
18862	18	S	3	W	30				STEINMULLER	J M	0	110	12/18/1959		W	28	7.5			X	X				
18864	18	S	3	W	30				STEINMULLER	G M	0	225	5/30/1962		W	60	18.7		X		X				
1359	18	S	3	W	30				WARD	GARY	80	95	7/12/1972	325 DELLWOO	W	40	5			X	X				
18837	18	S	3	W	30				WARD	GARY	98	450	12/30/1977		W	58				X	X				
18838	18	S	3	W	30				WOOD	ERSKIN	370	425	7/28/1972		W	275	3			X	X				
2408	18	S	3	W	30	SE	SE	2100	WOOD	ERSKIN		338	10/2/1991	85107 SPENCE	W	150	10			X	X				
87667	18	S	3	W	30			2100	WOOD	ERSKIN	180	340	11/3/1999	85107 SPENCE	W	70	3			X	X				


STATIC WATER LEVEL OVER TIME
0
50
100
150
200
250
300
Static Water Level (feet)
1/1/1938
1/1/1948
1/1/1958
1/1/1968
1/1/1978
1/1/1988
1/1/1998
Date
static_water_level

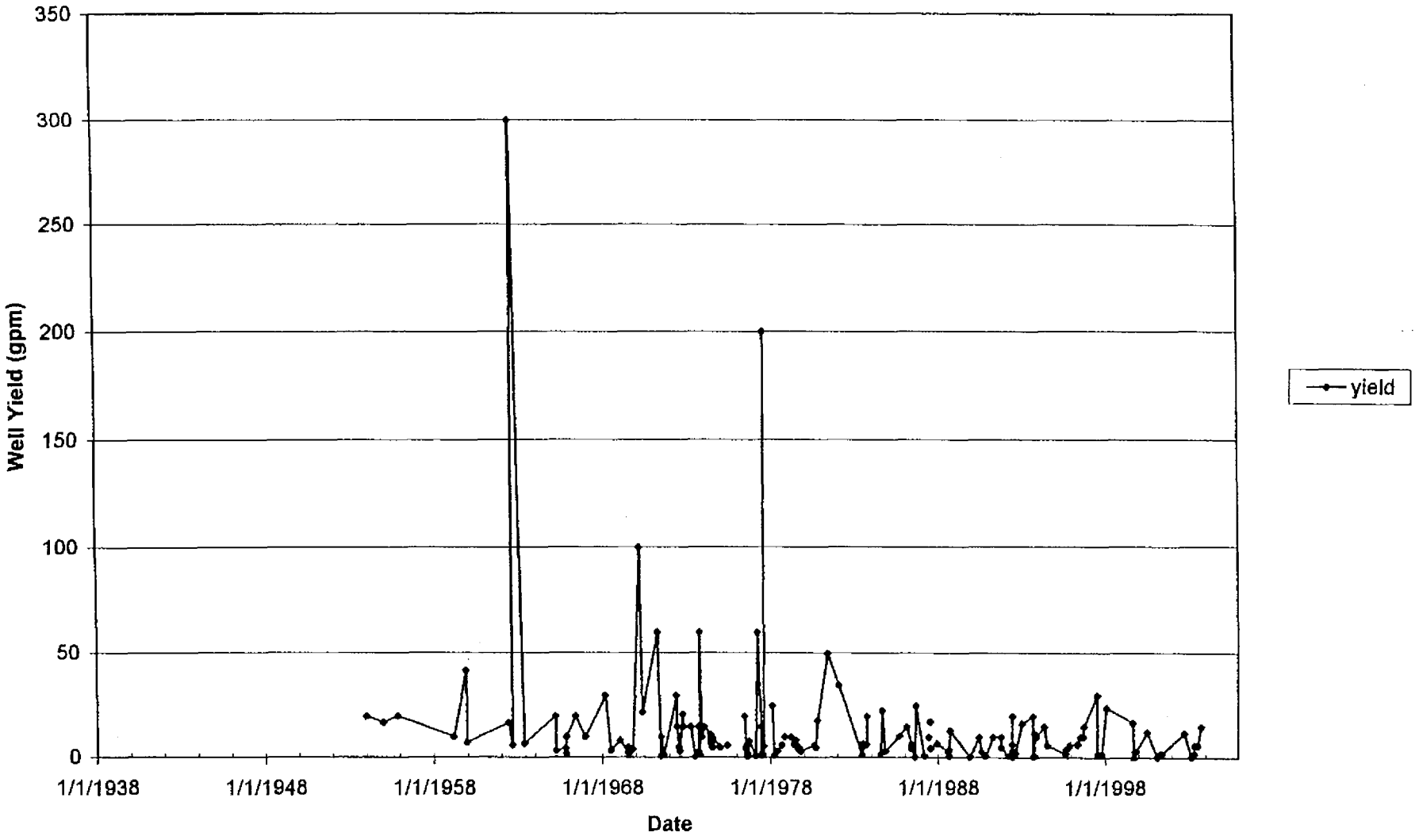
DEPTH OF WELLS OVER TIME



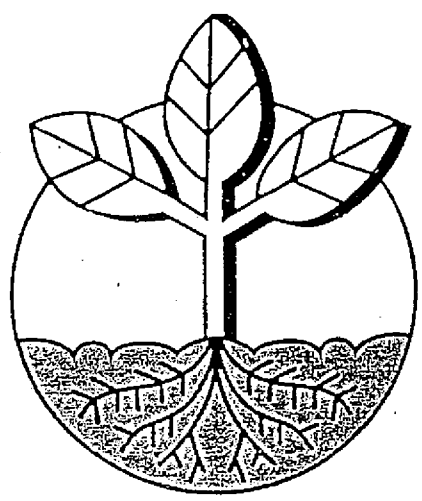
DEPTH TO FIRST WATER OVER TIME



WELL YIELD OVER TIME



Lane County
Soil Ratings for Forestry and Agriculture



Lane County

Lane County
Land Management Division

August 1997

Prepared by
Lane Council of Governments

EXHIBIT 2

Lane County
Soil Ratings for Forestry and Agriculture

Lane County
Land Management Division

August 1997

Prepared by
Lane Council of Governments

Lane County Soil Ratings for Forestry and Agriculture

The Lane County Land Management Division, with technical assistance from Lane Council of Governments, compiled this data to assist the public in preparing land use applications. The Natural Resources Conservation Service (NRCS) reviewed the data and methodology.

Map Symbol	Lane County Soil Map Unit	Douglas Fir Site Index	Cu. Ft./ Acre/ Year	Agricultural Capability Class	High Value Farmland
01A	Abiqua silty clay loam, 0 - 3% slopes	135	203	1	X
01B	Abiqua silty clay loam, 3 - 5% slopes	135	203	2	X
02E	Astoria silt loam, 5 - 30% slopes	130	193	6	
03E	Astoria Variant silt loam, 3 - 30% slopes	none		6	
03G	Astoria Variant silt loam, 30 - 60% slopes	none		6	
04G	Atring-Rock outcrop complex, 30 - 60% slopes	***	81	6	
05	Awbrig silty clay loam	none		4	X
06	Awbrig-Urban land complex	none		4	
07B	Bandon sandy loam, 0 - 7% slopes	105	145	3	
07C	Bandon sandy loam, 7 - 12% slopes	105	145	3	
07F	Bandon sandy loam, 12 - 50% slopes	105	145	6	
08	Bashaw clay	none		4	X
09	Bashaw-Urban land complex	none		4	
10	Beaches	none		8	
11C	Bellpine silty clay loam, 3 - 12% slopes	115	163	3	X
11D	Bellpine silty clay loam, 12 - 20% slopes	115	163	3	X
11E	Bellpine silty clay loam, 20 - 30% slopes	115	163	4	X
11F	Bellpine silty clay loam, 30 - 50% slopes	115	163	6	
12E	Bellpine cobbly silty clay loam, 2 - 30% slopes	115	163	4	
13F	Blachly clay loam, 30 - 50% slopes	119	173	6	
13G	Blachly clay loam, 50 - 70% slopes	119	173	7	
14E	Blachly silty clay loam, 3 - 30% slopes	125	184	6	
14F	Blachly silty clay loam, 30 - 50% slopes	125	184	6	
15E	Blachly-McCully clay loam, 3 - 30% slopes	***	172	6	
16D	Bohannon gravelly loam, 3 - 25% slopes	118	171	6	
16F	Bohannon gravelly loam, 25 - 50% slopes	118	171	6	
16H	Bohannon gravelly loam, 50 - 90% slopes	118	171	7	
17	Brallier muck, drained	none		4	
18	Brallier Variant muck	none		5	
19	Brenner silty clay loam	none		3	X
20B	Briedwell cobbly loam, 0 - 7% slopes	103	141	3	X
21B	Bullards-Ferrelo loams, 0 - 7% slopes	***	84	3	
21C	Bullards-Ferrelo loams, 7 - 12% slopes	***	84	3	
21E	Bullards-Ferrelo loams, 12 - 30% slopes	***	76	4	
21G	Bullards-Ferrelo loams, 30 - 60% slopes	***	76	6	

Lane County Soil Ratings for Forestry and Agriculture

Map Symbol	Lane County Soil Map Unit	Douglas Fir Site Index	Cu. Ft./ Acre/ Year	Agricultural Capability Class	High Value Farmland
22	Camas gravelly sandy loam, occasionally flooded	none		4	
23	Camas-Urban land complex	none		4	
24	Chapman loam	none		1	X
25	Chapman-Urban land complex	none		1	X
26	Chehalis silty clay loam, occasionally flooded	none		2	X
27	Chehalis-Urban land complex	none		2	X
28C	Chehulpum silt loam, 3 - 12% slopes	none		6 *	
28E	Chehulpum silt loam, 12 - 40% slopes	none		6	
29	Cloquato silt loam	none		2	X
30	Cloquato-Urban land complex	none		2	X
31	Coburg silty clay loam	none		2	X
32	Coburg-Urban land complex	none		2	X
33	Conser silty clay loam	none		3	X
34	Courtney gravelly silty clay loam	none		4	X
35D	Cruiser gravelly clay loam, 3 - 25% slopes	140**	145	6	
35F	Cruiser gravelly clay loam, 25 - 50% slopes	140**	145	6	
35G	Cruiser gravelly clay loam, 35 - 70% slopes	140**	145	7	
36D	Cumley silty clay loam, 2 - 20% slopes	114	162	6	
37C	Cupola cobbly loam, 3 - 12% slopes	100	136	6	
37E	Cupola cobbly loam, 12 - 30% slopes	100	136	6	
38	Dayton silt loam, clay substratum	none		4	X
39E	Digger gravelly loam, 10 - 30% slopes	102	140	6	
39F	Digger gravelly loam, 30 - 50% slopes	102	140	6	
40H	Digger-Rock outcrop complex, 50 - 85% slopes	***	114	7	
41C	Dixonville silty clay loam, 3 - 12% slopes	109	152	3	
41E	Dixonville silty clay loam, 12 - 30% slopes	109	152	4	
41F	Dixonville silty clay loam, 30 - 50% slopes	109	152	6	
42E	Dixonville-Hazelair-Urban land complex, 12 - 35% slopes	***	89	4	
43C	Dixonville-Philomath-Hazelair complex, 3 - 12% slopes	***	54	3	
43E	Dixonville-Philomath-Hazelair complex, 12 - 35% slopes	***	63	4	
44	Dune land	none		8	
45C	Dupee silt loam, 3 - 20% slopes	none		3	
46	Eilertsen silt loam	133	199	2	X
47E	Fendall silt loam, 3 - 30% slopes	125	184	6	
48	Fluvents, nearly level	none		--	
49E	Formader loam, 3 - 30% slopes	121	176	6	
49G	Formader loam, 30 - 60% slopes	121	176	6	
50G	Formader-Hembre-Klickitat complex, 50 - 80% slopes	***	176	7	

Lane County Soil Ratings for Forestry and Agriculture

Map Symbol	Lane County Soil Map Unit	Douglas Fir Site Index	Cu. Ft./ Acre/ Year	Agricultural Capability Class	High Value Farmland
51B	Haflinger-Jimbo complex, 0 - 5% slopes	***	165	6	X
52B	Hazelair silty clay loam, 2 - 7% slopes	none		3	
52D	Hazelair silty clay loam, 7 - 20% slopes	none		4	
53	Heceta fine sand	none		4	
54D	Hembre silt loam, 5 - 25% slopes	127	188	6	
54G	Hembre silt loam, 25-60% slopes	127	188	6	
55E	Hembre-Klickitat complex, 3 - 30% slopes	***	177	6	
55G	Hembre-Klickitat complex, 30 - 60% slopes	***	176	6	
56	Holcomb silty clay loam	none		3	X[1]
57D	Holderman extremely cobbly loam, 5 - 25% slopes	119**	113	6	
57F	Holderman extremely cobbly loam, 25 - 50% slopes	119**	113	6	
57G	Holderman extremely cobbly loam, 50 - 75% slopes	119**	113	7	
58D	Honeygrove silty clay loam, 3 - 25% slopes	122	178	6	
58F	Honeygrove silty clay loam, 25 - 50% slopes	122	178	6	
59E	Hullt loam, 2 - 30% slopes	121	176	3	X
59G	Hullt loam, 30 - 60% slopes	121	176	6	
60D	Hummington gravelly loam, 5 - 25% slopes	131**	131	6	
60F	Hummington gravelly loam, 25 - 50% slopes	131**	131	6	
60G	Hummington gravelly loam, 50 - 75% slopes	131**	131	7	
61	Jimbo silt loam	121	176	1	X
62B	Jimbo-Haflinger complex, 0 - 5% slopes	***	171	1	X
63C	Jory silty clay loam, 2 - 12% slopes	122	178	2	X
63D	Jory silty clay loam, 12 - 20% slopes	122	178	3	X
63E	Jory silty clay loam, 20 - 30% slopes	122	178	4	X
64D	Keel cobbly clay loam, 3 - 25% slopes	132**	133	6	
64F	Keel cobbly clay loam, 25 - 45% slopes	132**	133	6	
64G	Keel cobbly clay loam, 45 - 75% slopes	132**	133	7	
65G	Kilchis stony loam, 30 - 60% slopes	90	116	6	
65H	Kilchis stony loam, 60 - 90% slopes	90	116	7	
66D	Kinney cobbly loam, 3 - 20% slopes	122	178	6	
67F	Kinney cobbly loam, 20 - 50% north slopes	122	178	6	
67G	Kinney cobbly loam, 50 - 70% north slopes	122	178	7	
68F	Kinney cobbly loam, 20 - 50% south slopes	122	178	6	
68G	Kinney cobbly loam, 50 - 70% south slopes	122	178	7	
69E	Kinney cobbly loam, slump, 3 - 30% slopes	122	178	6	
70E	Klickitat stony loam, 3 - 30% slopes	112	158	6	
71F	Klickitat stony loam, 30 - 50% north slopes	112	158	6	
71G	Klickitat stony loam, 50 - 75% north slopes	112	158	7	

Lane County Soil Ratings for Forestry and Agriculture

Map Symbol	Lane County Soil Map Unit	Douglas Fir Site Index	Cu. Ft./ Acre/ Year	Agricultural Capability Class	High Value Farmland
72F	Klickitat stony loam, 30 - 50% south slopes	112	158	6	
72G	Klickitat stony loam, 50 - 75% south slopes	112	158	7	
73	Linslaw loam	none		3	X[1]
74B	Lint silt loam, 0 - 7% slopes	117	169	3	
74C	Lint silt loam, 7 - 12% slopes	117	169	3	
74D	Lint silt loam, 12 - 20% slopes	117	169	3	
74E	Lint silt loam, 20 - 40% slopes	117	169	4	
75	Malabon silty clay loam	none		1	X
76	Malabon-Urban land complex	none		1	X
77B	Marcola cobbly silty clay loam, 2 - 7% slopes	none		4	
78	McAlpin silty clay loam	none		2	X
79	McBee silty clay loam	none		3	X[2]
80F	McCully clay loam, 30 - 35% slopes	118	171	6	
80G	McCully clay loam, 50 - 70% slopes	118	171	7	
81D	McDuff clay loam, 3 - 25% slopes	112	158	6	
81F	McDuff clay loam, 25 - 50% slopes	112	158	6	
81G	McDuff clay loam, 50 - 70% slopes	112	158	7	
82C	Meda loam, 2 - 12% slopes	none		3	X
83B	Minniece silty clay loam, 0 - 8% slopes	none		6	
84D	Mulkey loam, 5 - 25% slopes	none		6	
85	Natroy silty clay loam	none		4	X
86	Natroy silty clay	none		4	X
87	Natroy-Urban land complex	none		4	X
88	Nehalem silt loam	none		2	X
89C	Nekia silty clay loam, 2 - 12% slopes	113	160	3	X
89D	Nekia silty clay loam, 12 - 20% slopes	113	160	3	X
89E	Nekia silty clay loam, 20 - 30% slopes	113	160	4	
89F	Nekia silty clay loam, 30 - 50% slopes	113	160	6	
90	Nekoma silt loam	none		3	
91D	Neskowin silt loam, 12 - 20% slopes	none		6	
91E	Neskowin silt loam, 20 - 40% slopes	none		6	
92G	Neskowin-Salander silt loams, 40 - 60% slopes	none		6	
93	Nestucca silt loam	none		3	
94C	Netarts fine sand, 3 - 12% slopes	none		6	
94E	Netarts fine sand, 12 - 30% slopes	none		6	
95	Newberg fine sandy loam	none		2	X
96	Newberg loam	none		2	X

Lane County Soil Ratings for Forestry and Agriculture

Map Symbol	Lane County Soil Map Unit	Douglas Fir Site Index	Cu. Ft./ Acre/ Year	Agricultural Capability Class	High Value Farmland
97	Newberg-Urban land complex	none		2	X
98	Noti loam	none		4	X
99H	Ochrepts & Umbrepts, very steep	none		--	
100	Oxley gravelly silt loam	none		3	
101	Oxley-Urban land complex	none		3	
102C	Panther silty clay loam, 2 - 12% slopes	none		6	
103C	Panther-Urban land complex, 2 - 12% slopes	none		6	
104E	Peavine silty clay loam, 3 - 30% slopes	125	184	6	
104G	Peavine silty clay loam, 30 - 60% slopes	125	184	6	
105A	Pengra silt loam, 1 - 4% slopes	none		3	X[1]
106A	Pengra-Urban land complex, 1 - 4% slopes	none		3	
107C	Philomath silty clay, 3 - 12% slopes	none		6	
108C	Philomath cobbly silty clay, 3 - 12% slopes	none		6	
108F	Philomath cobbly silty clay, 12 - 45% slopes	none		6	
109F	Philomath-Urban land complex, 12 - 45% slopes	none		6	
110	Pits	none		8	
111D	Preacher loam, 0 - 25% slopes	128	190	6	
111F	Preacher loam, 25 - 50% slopes	128	190	6	
112G	Preacher-Bohannon-Slickrock complex, 50 - 75% slopes	***	188	7	
113C	Ritner cobbly silty clay loam, 2 - 12% slopes	107	149	4	
113E	Ritner cobbly silty clay loam, 12 - 30% slopes	107	149	6	
113G	Ritner cobbly silty clay loam, 30 - 60% slopes	107	149	7	
114	Riverwash	none		8	
115H	Rock outcrop-Kilchis complex, 30 - 90% slopes	***	27	8	
116G	Rock outcrop-Witzel complex, 10 - 70% slopes	***	none	8	
117E	Salander silt loam, 12 - 30% slopes	125	184	6	
118	Salem gravelly silt loam	none		2	X
119	Salem-Urban land complex	none		2	X
120B	Salkum silt loam, 2 - 6% slopes	116	167	2	X
121B	Salkum silty clay loam, 2 - 8% slopes	116	167	2	X
121C	Salkum silty clay loam, 8 - 16% slopes	116	167	3	X
122	Saturn clay loam	123	180	3	
123	Sifton gravelly loam	124	182	3	X
124D	Slickrock gravelly loam, 3 - 25% slopes	137	209	6	
124F	Slickrock gravelly loam, 25 - 50% slopes	137	209	6	
125C	Steiwer loam, 3 - 12% slopes	none		3	
125D	Steiwer loam, 12 - 20% slopes	none		4*	

Lane County Soil Ratings for Forestry and Agriculture

Map Symbol	Lane County Soil Map Unit	Douglas Fir Site Index	Cu. Ft./ Acre/ Year	Agricultural Capability Class	High Value Farmland
125F	Steiwer loam, 20 - 50% slopes	none		6	
126F	Tahkenitch loam, 20 - 45% slopes	124	182	6	
126G	Tahkenitch loam, 45 - 75% slopes	124	182	7	
127C	Urban land-Hazelair-Dixonville complex, 3 - 12% slopes	***	68	8	
128B	Veneta loam, 0 - 7% slopes	108	150	2	X
129B	Veneta Variant silt loam, 0 - 7% slopes	124	182	2	X
130	Waldo silty clay loam	none		3	
131C	Waldport fine sand, 0 - 12% slopes	none		6	
131E	Waldport fine sand, 12 - 30% slopes	none		7	
131G	Waldport fine sand, 30 - 70% slopes	none		7	
132E	Waldport fine sand, thin surface, 0 - 30% slopes	none		7	
133C	Waldport-Urban land complex, 0 - 12% slopes	none		6	
134	Wapato silty clay loam	none		3	X[3]
135C	Willakenzie clay loam, 2 - 12% slopes	110	154	3	X
135D	Willakenzie clay loam, 12 - 20% slopes	110	154	3	X
135E	Willakenzie clay loam, 20 - 30% slopes	110	154	4	X
135F	Willakenzie clay loam, 30 - 50% slopes	110	154	6	
136	Willanch fine sandy loam	none		3	
137F	Winberry very gravelly loam, 10 - 45% slopes	none		7	
138E	Witzel very cobbly loam, 3 - 30% slopes	none		6	
138G	Witzel very cobbly loam, 30 - 75% slopes	none		6	
139	Woodburn silt loam	none		2	X
140	Yaquina loamy fine sand	none		4	
141	Yaquina-Urban land complex	none		4	
142G	Yellowstone-Rock outcrop, 10 - 60% slopes	none		7	

*	Indicates soils which have an irrigated capability class which is different from the non-irrigated capability class.
**	Indicates productivity calculated using 100-year Douglas fir data.
***	Indicates soil complexes with multiple site indices, refer to the CuFt/Acre/Year column for a composite volume rating for the complex.
"none"	Indicates soil map units that lack site index information on Douglas fir. The soil map unit may have the capability to produce Douglas fir, but this productivity may be very low to very high. No site index has been collected by the NRCS due to lack of suitable sites or lack of time and or funds.
X[1]	Only drained areas are high value farmland.
X[2]	Only areas protected from flooding or not frequently flooded during the growing season are high value farmland.
X[3]	Only drained areas that are either protected from flooding or not frequently flooded during the growing season are high value farmland.

SOURCE AND DESCRIPTION OF THE DATA

Map Symbol

Data Source

USDA-Soil Conservation Service, September 1987. *Soil Survey of Lane County Area, Oregon.*

Soil Map Unit

Data Source

USDA-Soil Conservation Service, September 1987. *Soil Survey of Lane County Area, Oregon.*

Site Index

Data Source

USDA-Natural Resources Conservation Service, August 1997 printout from the National Soils Information System (NASIS). *Soils Database for Lane County, Woodland Management and Productivity* table.

Description

These site indices indicate the average height, in feet, that dominant and codominant Douglas fir trees attain in 50 years. The site index applies to fully stocked, even-aged, unmanaged stands. This table lists only site indices for Douglas fir and does not list site indices for soil complexes. The Description under Cubic Feet/Acre/Year explains the composite volume rating in this table for soil complexes.

Cubic feet/acre/year

Data Source

USDA-Soil Conservation Service, June 1986. *Technical Note No. 2 Revised, Culmination of Mean Annual Increment for Commercial Forest Trees of Oregon.*

Description

Converting site index to cubic feet/acre/year expresses productivity as a volume of wood fiber produced. For map units that are predominantly one soil type, it is straightforward to use the tables in Technical Note No. 2 to look up the cubic feet/acre/year that a soil could potentially produce based on the site index in the State Soils Database. Calculating a volume rating for a complex is more problematic. The NRCS reports site index data for each component of a soil complex but does not calculate a composite volume for the entire complex. A complex is a soil map unit which has two or more kinds of soil in such an intricate pattern or so small in area that the soils cannot be delineated separately at the scale of mapping.

The methodology used in this table to calculate forest productivity volume ratings for soil complexes involves applying a weighted average to each component of the complex and then normalizing to base it on 100% excluding the inclusions. The following example illustrates this calculation for a soil complex which has a site index for only one of the two components.

43 C	*Dixonville-Philomath-Hazelair complex 3-12%*				
Component	*Actual %*	*Normalized %**	*Site Index*	*CuFt/ Ac/Yr*	*Normalized % x Cu.F.t/Ac./Year*
Dixonville	30%	35%	97	130	46
Philomath	30%	35%	-	-	-
Hazelair	25%	29%			
Total	85%	100%			46

* $\text{Normalized \%} = \dfrac{\%\ of\ Individual\ Component}{100 - (\%\ Inclusions + \%\ Urban\ Land)}$

Agricultural Capability Class

Data Source

USDA-Natural Resources Conservation Service, August 1997 printout from the National Soils Information System (NASIS). *Soils Database for Lane County, Land Capability and Yields Per Acre of Crops and Pasture* table.

Description

Land capability class, often called agricultural capability class, generally shows the suitability of soils for most kinds of field crops. The Soil Survey describes capability class: "The soils are grouped according to their limitations for field crops, the risk of damage if they are used for field crops, and the way they respond to management." There are eight capability classes, I through VIII (sometimes written as 1 through 8), indicating progressively greater limitations for use as cropland. The land capability classification is discussed in USDA Agriculture Handbook No. 210, issued September 1961 and reprinted January 1973.

The NRCS reports both irrigated and non-irrigated capability classes. In Lane County, because of adequate rainfall, the ratings are the same for irrigated and non-irrigated except for all but two map units (28C, Chehulpum silt loam, 3-12%, and 125D, Steiwer loam, 3-12%). This table lists the non-irrigated capability class. For soil complexes, this table lists only the capability class of the most predominant soil in the complex (which is the first soil in the name of the map unit).

High Value Soils

Data Source

Land Conservation and Development Commission, adopted February 18, 1994. *Oregon Administrative Rules, Chapter 660, Division 33* (OAR 660-33).

Description

The Agricultural Land Rule (OAR 660-33) defines "high value farmland" as land in a tract composed predominantly of soils that are prime, unique, Class I or II, and other soils as specified in the rule. These other soils include the wet clay soils on valley terraces that are generally used for grass seed production, and moderately sloping soils on low foothills.

NRCS is the agency responsible for classifying soils as prime, unique, or land capability class I through VIII (1 through 8). The names 'prime' and 'unique' are what they imply. Prime soils are the best soils from a national perspective—easy to farm, suitable for a wide variety of crops, producing the highest yields. NRCS designates unique soils in conjunction with the state and county so as to recognize soils suited for growing a specialty crop of state or local importance, e.g., the soils on the southern Oregon coast used for growing cranberries and the organic soils in the Willamette Valley used for growing onions. Lane County has not requested the designation of any unique soils. Class I and II are land capability classes—the soils in them have the fewest limitations for crop growth. Refer to the description of Agricultural Capability Class (immediately above) for more information.

Note: The Soil Conservation Service and Natural Resources Conservation Service are the same USDA agency. A name change to Natural Resources Conservation Service was approved in 1994.

DOUGLAS FIR EMPIRICAL YIELD TABLE

TABLE 5

SITE 100

Total Age	Normal Basal Area	Mean Diameter	CVTS	CV4	SV6(32')	C/SCR Ratio
20	17	8.53	85	85	335	.254
26	70	9.33	1,324	1,236	2,561	.483
30	97	9.85	2,130	1,913	4,601	.416
40	146	11.14	4,071	3,703	11,450	.323
41	150	11.27	4,259	3,886	12,248	.317
50	181	12.39	5,909	5,541	19,972	.277
60	209	13.59	7,643	7,325	29,247	.250
70	232	14.71	9,273	8,982	38,528	.233
80	252	15.75	10,799	10,468	47,294	.221
90	269	16.69	12,222	11,750	55,131	.213
100	284	17.53	13,541	12,805	61,760	.207
110	297	18.24	14,756	13,624	66,922	.204
120	310	18.81	15,867	14,190	70,448	.201
130	321	19.24	16,875	14,502	72,234	.201

SITE 107 | 23,005

SITE 109 | 23,872

TABLE 6

SITE 110

Total Age	Normal Basal Area	Mean Diameter	CVTS	CV4	SV6(32')	C/SCR Ratio
20	30	8.74	327	327	666	.491
26	83	9.63	1,688	1,494	3,299	.453
30	109	10.23	2,574	2,253	5,812	.388
40	158	11.69	4,717	4,275	14,125	.303
41	162	11.83	4,926	4,482	15,074	.297
50	194	13.11	6,757	6,345	24,305 *	.261
60	222	14.47	8,693	8,344	35,244	.237
70	245	15.76	10,525	10,200	46,141	.221
80	264	16.97	12,253	11,863	56,425	.210
90	281	18.09	13,878	13,304	65,675	.203
100	296	19.09	15,398	14,503	73,549	.197
110	310	19.97	16,815	15,448	79,836	.193
120	322	20.72	18,129	16,126	84,358	.191
130	333	21.31	19,338	16,528	86,957	.190

TABLE 7

SITE 120

Total Age	Normal Basal Area	Mean Diameter	CVTS	CV4	SV6(32')	C/SCR Ratio
20	51	9.11	819	770	1,355	.568
26	101	10.10	2,294	1,961	4,810	.408
30	126	10.77	3,257	2,821	7,992	.353
40	173	12.39	5,592	5,093	18,116	.281
41	177	12.55	5,820	5,324	19,255	.277
50	208	13.98	7,823	7,389	30,132	.245
60	235	15.50	9,951	9,588	42,783	.224
70	258	16.96	11,974	11,611	55,265	.210
80	277	18.33	13,894	13,424	66,954	.200
90	294	19.60	15,710	14,992	77,437	.194
100	309	20.76	17,423	16,297	86,410	.189
110	322	21.80	19,031	17,334	93,643	.185
120	334	22.70	20,536	18,091	98,946	.183
130	345	23.45	21,937	18,561	102,187	.182

EXHIBIT 3

LOG PRICES - 3rd Quarter 1983

WEST OREGON, SANTIAM, LANE, FOREST GROVE, TILLAMOOK AND ASTORIA UNITS

Douglas-Fir

#1P	$505
#2P	425
#3P	340
SM	285
#2S	255
#3S	215
#4S	200
SC	140
Utility	75
CR	240

Hemlock

P	$375
SM	260
#2S	220
#3S	190
#4S	175
Utility	65
CR	190

Spruce

SM	$255
#2S	230
#3S	180
#4S	160
Utility	45

W. R. Cedar

#1S	$390
#2S	380
#3S	310
#4S	230
CR	330
Wormy	135

Alder

Sawlogs CR	$190
Pulp	125

EXHIBIT 4

EXHIBIT "I"

Marc E. Setchko
CONSULTING FORESTER

870 Fox Glenn Avenue
Eugene, Oregon 97405
Phone: (541) 344-0473
FAX: (541) 344-7791

February 23, 2004

Lane County Planning Commission

RE: Lane County File #PA 03-5657, Dahlen; Response to Goal One Coalition Letter dated February 5, 2004

Members of the Planning Commission:

In conjunction with my Forest Productivity Analysis, completed in December, 2003, I have enclosed the following written response to a letter written by Jim Just of Goal One Coalition. I have addressed each issue as presented in the letter, most of which I have already addressed in my analysis. I am answering these questions as a qualified, Society of American Foresters Certified Professional Forester (#2953), with 27 years of experience including 17 years as a consultant, with Bachelor of Science (Cal Poly, SLO) and Master of Forestry (Oregon State) Degrees. As a consultant I have extensive experience in drawing up forest management plans, handling the administration of these plans and the merchandising of logs to maximize the return to my clients.

Following are responses to questions raised in Goal One Letter:

Mr. Just states that my report does not assert that NRCS data are not available for soils on the subject parcel, and does not assert or show that NRCS data are inaccurate. Therefore no alternative method for determining productivity, including income potential, can be used.

I did not make either of these assertions in my report; Jim Belknap did all of the cu.ft./ac./yr. calculations using only the data from the 1997 Lane County Soil Ratings for Forestry and Agriculture. No alternative methodology was used.

Mr. Just then presents a table of his own to show the parcel in question is capable of producing 155.40 cf/ac/yr. I have compiled six separate tables for comparison, all using SCS/NRCS data (the NRCS is the new name for the SCS; same entity). I have also included ponderosa pine figures for the soil types Jim Just provides site index figures for; even though he provides no exhibits showing where these site indexes come from. Before introducing these tables some clarification on data used by Jim Just must be presented.

1) KMX as a "merchantable" species (see ORS 197.247(1)(b)(C)). KMX is a hybrid cross between knobcone pine and Monterey pine. It would grow well on this site. However, knobcone pine is small and slow growing, it is valuable as a ground cover to shelter more valuable trees after a forest fire. It has no commercial value. Monterey pine is a taller tree used as ornamentals or for windbreaks. It has no commercial value. The cross between the two is used primarily to grow trees on marginal sites where trees are desired for ornamental, aesthetic or other reasons. There is no current commercial market for this species.

2) Hybrid poplar as a "merchantable" species. There currently is no market for poplar. In the past there was a market for the chips; that has ceased to exist. The other argument which could be raised is that you can buy "poplar" boards at several locations in the area. The poplar being sold is called yellow poplar and comes from the tulip tree grown in the southeast portion of the country. Poplar would also not grow on the site in question due to moisture constraints.

3) After stating that an alternative method (to NRCS data and/or Dept. of Forestry methodology) for determining productivity cannot be used, Mr. Just presents estimates of cf/ac/yr data with no supporting tables or exhibits.

4) Mr. Just has compiled his table from multiple sources, including figures from the 1990 Office of State Forester Memorandum, General File 7-1-1. He has used these figures after stating in an earlier rebuttal letter to Lane County (see Lane County File #PA 02-5838, Ogle), that this file does not exist.

Using 1997 Lane County Soil Ratings for Forestry and Agriculture (NRCS Data).

Soil Unit	Acres	Species	Site Index	Cf/Ac/Yr	Total Cu.Ft. Productivity
28C	79.842	DF	NA	none	0
41C	12.157	DF	109	152	1,847.864
43C	10.161	DF	NA	54	548.694
43E	28.514	DF	NA	63	1,796.382
52D	13.864	DF	NA	none	0
78	15.009	DF	NA	none	0
102C	34.574	DF	NA	none	0
105A	11.637	DF	NA	none	0
108C	9.746	DF	NA	none	0
113C	0.371	DF	107	149	55.279
125C	9.042	DF	NA	none	0
125D	3.950	DF	NA	none	0
135E	27.358	DF	110	154	4,213.132
138E	27.256	DF	NA	none	0
138G	37.011	DF	NA	none	0
	320.492				8,461.351

Total - 8,461.351 cu.ft. ÷ 320.492 ac. = 26.401 cf./ac./yr.

Using Lane County "Green Sheet" Soil Ratings (SCS Data).

Soil Unit	Acres	Species	Site Index	Cf/Ac/Yr	Total Cu.Ft. Productivity
28C	79.842	DF	NA	40	3,193.680
41C	12.157	DF	97	130	1,580.410
43C	10.161	DF	NA	45	457.245
43E	28.514	DF	NA	45	1,283.130
52D	13.864	DF	NA	40	554.560
78	15.009	DF	125	184	2,761.656
102C	34.574	DF	NA	45	1,555.830
105A	11.637	DF	NA	45	523.665
108C	9.746	DF	NA	45	438.570
113C	0.371	DF	102	140	51.940
125C	9.042	DF	NA	30	271.260
125D	3.950	DF	NA	30	118.500
135E	27.358	DF	110	154	4,213.132
138E	27.256	DF	NA	70	1,907.920
138G	37.011	DF	NA	70	2,590.770
	320.492				21,502.268

Total - 21,502.268 cu.ft. ÷ 320.492 ac. = 67.091 cf./ac./yr.

Using Office of State Forester Forest Soil Ratings Memorandum (SCS Data).

Soil Unit	Acres	Species	Site Index	Cf/Ac/Yr	Total Cu.Ft. Productivity
28C	79.842	DF	NA	40	3,193.680
41C	12.157	DF	120	115	1,398.055
43C	10.161	DF	NA	45	457.245
43E	28.514	DF	NA	45	1,283.130
52D	13.864	DF	NA	40	554.560
78	15.009	DF	159	169	2,536.521
102C	34.574	DF	NA	45	1,555.830
105A	11.637	DF	NA	45	523.665
108C	9.746	DF	NA	45	438.570
113C	0.371	DF	131	131	48.601
125C	9.042	DF	NA	30	271.260
125D	3.950	DF	NA	30	118.500
135E	27.358	DF	160	170	4,650.860
138E	27.256	DF	90	70	1,907.920
138G	37.011	DF	90	70	2,590.770
	320.492				21,529.167

Total - 21,529.167 cu.ft. ÷ 320.492 ac. = 67.175 cf./ac./yr.

Selecting the highest productivity figures from the three tables presented.

Soil Unit	Acres	Species	Site Index	Cf/Ac/Yr	Total Cu.Ft. Productivity
28C	79.842	DF	NA	40	3,193.680
41C	12.157	DF	109	152	1,847.864
43C	10.161	DF	NA	54	548.694
43E	28.514	DF	NA	63	1,796.382
52D	13.864	DF	NA	40	554.560
78	15.009	DF	125	184	2,761.656
102C	34.574	DF	NA	45	1,555.830
105A	11.637	DF	NA	45	523.665
108C	9.746	DF	NA	45	438.570
113C	0.371	DF	107	149	55.279
125C	9.042	DF	NA	30	271.260
125D	3.950	DF	NA	30	118.500
135E	27.358	DF	160	170	4,650.860
138E	27.256	DF	90	70	1,907.920
138G	37.011	DF	90	70	2,590.770
	320.492				22,815.490

Total - 22,815.490 cu.ft. ÷ 320.492 ac. = 71.189 cf./ac./yr.

Selecting the highest productivity figures from all tables, then including ponderosa pine figures (with no exhibits to show where this figures came from) as presented by Mr. Just.

Soil Unit	Acres	Species	Site Index	Cf/Ac/Yr	Total Cu.Ft. Productivity
28C	79.842	DF	NA	40	3,193.680
41C	12.157	DF	109	152	1,847.864
43C	10.161	DF	NA	54	548.694
43E	28.514	DF	NA	63	1,796.382
52D	13.864	PP	92	113	1,566.632
78	15.009	DF	125	184	2,761.656
102C	34.574	DF	NA	45	1,555.830
105A	11.637	DF	NA	45	523.665
108C	9.746	PP	104	141	1,374.186
113C	0.371	DF	107	149	55.279
125C	9.042	DF	NA	30	271.260
125D	3.950	DF	NA	30	118.500
135E	27.358	DF	160	170	4,650.860
138E	27.256	DF	90	70	1,907.920
138G	37.011	DF	90	70	2,590.770
	320.492				24,763.178

Total - 24,763.178 cu.ft. ÷ 320.492 ac. = 77.266 cf./ac./yr.

Selecting the highest productivity figures from all tables, then including ponderosa pine figures from the Office of State Forester Forest Soil Ratings Memorandum (SCS Data).

Soil Unit	Acres	Species	Site Index	Cf/Ac/Yr	Total Cu.Ft. Productivity
28C	79.842	DF	NA	40	3,193.680
41C	12.157	DF	109	152	1,847.864
43C	10.161	DF	NA	54	548.694
43E	28.514	DF	NA	63	1,796.382
52D	13.864	PP	92	88	1,220.032
78	15.009	DF	125	184	2,761.656
102C	34.574	DF	NA	45	1,555.830
105A	11.637	DF	NA	45	523.665
108C	9.746	PP	104	110	1,072.060
113C	0.371	DF	107	149	55.279
125C	9.042	DF	NA	30	271.260
125D	3.950	DF	NA	30	118.500
135E	27.358	DF	160	170	4,650.860
138E	27.256	DF	90	70	1,907.920
138G	37.011	DF	90	70	2,590.770
	320.492				24,114.452

Total - 24,114.452 cu.ft. ÷ 320.492 ac. = 75.242 cf./ac./yr.

All of these tables presented show the subject property produces less than 85 cu. ft./ac./yr. of "merchantable" timber volume. This has been determined by Lane County, and the State of Oregon, to be the measuring parameter for marginal soils.

Mr. Just states that my analysis uses data other than NRCS data to assess the productivity and income potential of the subject property. He then states that the methodology used does not provide equivalent data and is not approved the Department of Forestry.

The NRCS does not publish volume per acre tables for timber species. I have used industry accepted volume tables, compiled from extensive collected data and published by government, private industry and/or university/state college entities. From these tables I have calculated productivity; for income potential I have used 1983 log prices as presented by the Oregon State Dept. of Forestry. I have used 1983 prices because Lane County requires these prices to be used for analysis of productivity and income.

Mr. Just states that the methodology used for my analysis did not identify site clumps or site trees on the non-NRCS rated soils. The areas in question were clearcut within the last 15 years and at the present time there are no site trees left to measure. He further states that no attempt was made to measure productivity or to calculate site indexes for the soils. I cannot do this because I am not a soil scientist. Mr. Just states that 104 acres were excluded from consideration altogether. There are no trees growing on these acres at the present time and no stumps to indicate that trees ever grew on these acres. The majority of this property has been grassland and/or oak savannah for decades. Mr. Just states that the number of conifers per acre were estimated; I took tenth acre plots on the ground and counted stumps. The number of trees per acre were calculated from these plots and compared to the number of trees per acre that are in a fully stocked stand. From this ratio the volume in a partially stocked stand was calculated.

Mr. Just states that my analysis considers productivity for Douglas-fir only. I have used Douglas-fir because that is the most valuable species; the only other species even close in value is red alder and red cedar, neither tree will grow on this site. As for the other species mentioned by Mr. Just, specifically black cottonwood, Oregon ash, Oregon white oak, red alder, bigleaf maple and hybrid poplar. There is no market for cottonwood, ash and poplar. Alder will not grow on this site. Oak is extremely slow growing, with the "merchantable" yield per acre very low. Bigleaf maple has a low value and low "merchantable" yield per acre. Merchantable conifers mentioned by Mr. Just include ponderosa pine, grand fir, western red cedar, western hemlock and KMX. Ponderosa pine has been included in my cu.ft./ac./yr. tables; for an income calculation it would be worth substantially less than Douglas-fir. Grand fir and hemlock are also worth substantially less than Douglas-fir; therefore, they were not used for the income test. Cedar will not grow on this site; however, if it could be grown, the growth is so slow that at 50 years the volume per acre would be substantially less than the volume per acre produced by Douglas-fir. The final tree, KMX, as stated earlier, is not a merchantable species. A final point brought up by Mr. Just concerning "merchantibility". He states that a tree is merchantable if it can be used for firewood. Firewood is worth little when compared to boards, sheeting, etc., and no company buys firewood on the open market. Companies will sell it as a by product, but no company buys it with a purchase order similar to purchase orders used for buying merchantable logs.

Mr. Just states that "reasonable management practices" would include selecting species best suited to the particular soils and site conditions found on the subject property, including non-native species. I would agree with this statement; however, all other species will yield considerably less money. Mr. Just again mentions poplar. First, poplar is not currently a "merchantable" species. Second, the growth rates shown require far more moisture than occurs on the site in question; the sited (from the Journal of Forestry) plantations are much further north in an area of higher rainfall and the high end of the cubic foot production figures are from irrigated plantations.

Mr. Just states that it is well established that lack of a soil productivity rating does not mean that a soil has no capability for forest production. I do not dispute this and am not sure what this has to do with my analysis.

Mr. Just presents site indexes and productivity for the McAlpin soils and Willamette valley ponderosa pine. I have included these figures in the tables presented.

On page 6 of the Goal One Coalition letter Mr. Just again brings up the subject of "reasonable forest management practices over the growth cycle" and states that other species should be planted. The analysis which I have presented does not consider the "best management practices"; it is looking at what is the maximum potential productivity and income could be. Therefore, I have used Douglas-fir, the highest value species. Mr. Just then brings up, again, the subject of planting ponderosa pine, KMX and poplar, as well as Douglas-fir, on the site. As discussed earlier in my response, KMX and poplar are not "merchantable" species and I have included ponderosa pine in my cubic foot productivity calculations. To substitute ponderosa pine in my income calculations would only lower the final dollar amount shown. In fact, the dollar amount would be significantly reduced.

In Goal One's final conclusions Mr. Just states I have not used acceptable methodology, that I have not used NRCS data and that I have not used current timber prices. I have used SCS/NRCS data for all the soils on the parcel and have followed all of the criteria and methodology as required by Lane County. I have not used current prices because I am not supposed to under the Marginal Lands guidelines. Mr. Just further states that the "income" test cannot be completed without using multiple forest tree species being cultivated on the property; using any species other than Douglas-fir will only reduce the dollar amount calculated for the income test.

I hope this answers all of the questions brought up by Mr. Just of Goal One coalition. I have also included copies of all three soil ratings publications which are used in my analysis.

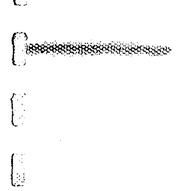
Sincerely,

Marc E Settle

DRAWDOWN

PROJECT: CHET BOWERS FILE #: 1
LOCATION: SPENCER BUTTE

CROSS SECTION. THE AQUIFER IS NONLEAKY CONFINED.



PERMEABILITY (usgpd/ft2): .35 STORAGE COEFFICIENT: .000005

WELL DATA

X-COORDINATE (ft)	Y-COORDINATE (ft)	PUMPING RATE (usgpm)
50	200	10.000000
200	50	-5.000000
40	40	1.750000
50	40	1.750000
60	40	1.750000
70	40	1.750000
30	50	1.750000
40	50	1.750000
50	50	1.750000

50	200	10.000000
200	50	-5.000000
40	40	1.750000
50	40	1.750000
60	40	1.750000
70	40	1.750000
30	50	1.750000
40	50	1.750000
50	50	1.750000
60	50	1.750000

LANE COUNTY MANAGEMENT

DRAWDOWN

COMPUTED DRAWDOWN (ft) AFTER 5 years OF PUMPING.
THE COMBINED CAPACITY OF 10 WELL(S) IS-1 usgpm.

Y-COORD	0	10	20	30	40	50	60	70	80	90
100 -	2.96	3.93	4.78	5.39	5.61	5.33	4.52	3.24	1.60	-0.27
90 -	6.51	8.06	9.54	10.70	11.29	11.11	10.11	8.37	6.13	3.62
80 -	9.98	12.27	14.59	16.59	17.77	17.76	16.44	14.01	10.92	7.59
70 -	13.23	16.41	19.95	23.31	25.50	25.78	23.91	20.31	15.93	11.50
60 -	15.99	20.11	25.36	31.26	35.25	36.05	33.23	27.33	20.91	15.10
50 -	17.90	22.63	29.42	43.00	49.60	51.33	47.66	34.30	25.17	17.88
40 -	18.75	23.35	29.51	37.55	49.82	52.41	49.58	41.87	27.15	19.19
30 -	18.60	22.55	27.30	32.68	37.53	39.28	37.39	32.28	25.21	18.73
20 -	17.75	20.91	24.37	27.77	30.35	31.19	29.83	26.50	21.95	17.16
10 -	16.50	18.95	21.41	23.59	25.07	25.40	24.34	22.02	18.82	15.22
0 -	15.08	16.94	18.69	20.13	20.99	21.04	20.17	18.44	16.05	13.27

X-COORD

100 -	-2.25
90 -	1.03
80 -	4.27
70 -	7.35
60 -	10.06
50 -	12.11
40 -	13.23
30 -	13.34

Y-COORD X-COORD

****** - WATER LEVEL HAS DROPPED BELOW BOTTOM OF AQUIFER.

LANE COUNTY MANAGEMENT

DRAWDOWN

COMPUTED DRAWDOWN (ft) AFTER 15 years OF PUMPING.
THE COMBINED CAPACITY OF 10 WELL(S) IS-1 usgpm.

Y-COORD	0	10	20	30	40	50	60	70	80	90
100 -	2.06	3.03	3.88	4.49	4.71	4.43	3.62	2.34	0.70	-1.17
90 -	5.61	7.17	8.64	9.80	10.39	10.22	9.21	7.47	5.23	2.72
80 -	9.09	11.37	13.69	15.69	16.89	16.86	15.64	13.11	10.02	6.67
70 -	12.74	15.91	19.27	22.47	24.56	25.16	24.06	21.41	17.81	13.60
60 -	15.80	19.51	24.07	28.77	32.14	33.15	32.22	29.45	24.27	18.98
50 -	17.01	21.73	28.52	36.10	42.10	48.70	50.44	46.76	33.41	24.25	18.29
40 -	17.85	22.45	28.61	36.65	48.92	51.51	48.68	40.97	26.25	19.29
30 -	17.70	21.65	26.41	31.78	36.63	38.38	36.49	31.38	24.31	17.83
20 -	16.85	20.01	23.47	26.87	29.46	30.29	28.93	25.60	21.05	16.26
10 -	15.60	18.05	20.51	22.70	24.17	24.50	23.44	21.12	17.92	14.32
0 -	14.18	16.04	17.79	19.23	20.09	20.14	19.27	17.54	15.15	12.37

Y-COORD X-COORD

LANE COUNTY MANAGEMENT HAS DROPPED BELOW BOTTOM OF AQUIFER.

DRAWDOWN

COMPUTED DRAWDOWN (ft) AFTER 25 years OF PUMPING.
THE COMBINED CAPACITY OF 10 WELL(S) IS 1 usgpm.

Y-COORD	0	10	20	30	40	50	60	70	80	90
100 -	1.64	2.61	3.47	4.07	4.29	4.01	3.20	1.92	0.28	-1.59
90 -	5.19	6.75	8.22	9.38	9.98	9.80	8.79	7.06	4.81	2.31
80 -	8.67	10.95	13.28	15.27	16.46	16.44	15.12	12.70	9.61	6.27
70 -	11.92	15.09	18.63	21.99	24.19	24.46	22.59	19.00	14.61	10.18
60 -	14.67	18.79	24.05	29.95	33.94	34.74	31.91	26.01	19.59	13.78
50 -	16.59	21.32	28.10	41.68	48.28	50.02	46.35	32.99	23.95	16.57
40 -	17.43	22.04	28.20	36.23	48.51	51.09	48.26	40.55	25.83	17.87
30 -	17.28	21.24	25.99	31.36	36.21	37.97	36.07	30.96	23.89	17.42
20 -	16.43	19.60	23.05	26.45	29.04	29.87	28.52	25.18	20.54	15.85
10 -	15.18	17.63	20.09	22.28	23.76	24.08	23.03	20.70	17.50	13.90
0 -	13.76	15.62	17.38	18.81	19.67	19.72	18.86	17.13	14.73	11.95

Y-COORD — X-COORD

Y-COORD	100
100 -	-3.56
90 -	-0.28
80 -	2.95
70 -	6.03
60 -	8.74
50 -	10.80
40 -	11.92
30 -	12.03
20 -	11.36
10 -	10.27
0 -	9.01

Y-COORD — X-COORD

****** - WATER LEVEL HAS DROPPED BELOW BOTTOM OF AQUIFER.

LANE COUNTY MANAGEMENT

Bowers

Y- ORD X-COORD

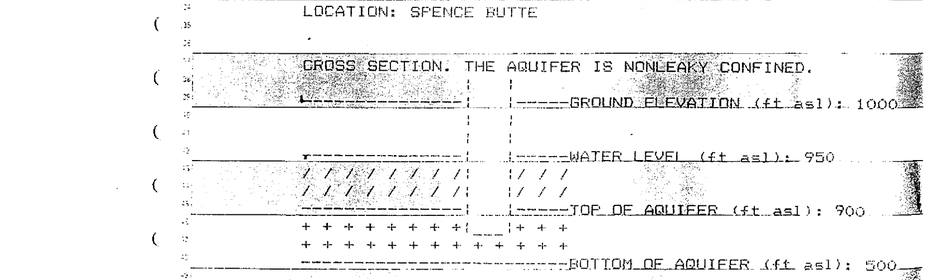
****** - WATER LEVEL HAS DROPPED BELOW BOTTOM OF AQUIFER.

LANE COUNTY MANAGEMENT

DRAWDOWN

PROJECT: CHET BOWERS FILE #: 1
LOCATION: SPENCE BUTTE

CROSS SECTION. THE AQUIFER IS NONLEAKY CONFINED.



PERMEABILITY (usgpd/ft2): 175 STORAGE COEFFICIENT: .000005

WELL DATA

X-COORDINATE	Y-COORDINATE	PUMPING RATE

400

400 X .175 70 gpd/ft.

1250	5000	-10.000000
5000	1250	-4.000000
1000	1000	1.750000
1000	1250	1.750000
1000	1500	1.750000
1000	1750	1.750000
1250	750	1.750000
1250	1000	1.750000
1250	1250	1.750000
1250	1500	1.750000

LANE COUNTY MANAGEMENT

DRAWDOWN

COMPUTED DRAWDOWN (ft) AFTER 3 years OF PUMPING.
THE COMBINED CAPACITY OF 10 WELL(S) IS 0 usgpm.

Y-COORD	0	250	500	750	1000	1250	1500	1750	2000	2250
2500 -	31.58	34.43	37.09	39.07	39.70	38.53	35.71	31.81	27.39	22.86
2250 -	38.94	43.28	47.76	51.64	53.47	51.99	47.74	42.08	36.00	30.02
2000 -	45.86	51.93	58.87	66.20	71.07	68.27	61.11	52.70	44.44	36.82
1750 -	51.90	59.66	69.35	81.78	120.42	88.06	75.49	63.02	52.19	42.88
1500 -	56.50	65.50	77.26	93.29	137.15	134.54	88.65	71.57	58.39	47.70
1250 -	59.26	68.68	81.09	98.22	143.98	143.06	95.46	76.48	62.19	50.84
1000 -	60.09	69.00	80.41	95.71	139.82	140.59	94.87	76.91	63.16	52.11
750 -	59.20	66.90	76.10	86.89	97.72	128.27	87.73	73.32	61.55	51.62
500 -	57.08	63.28	70.06	76.90	82.39	83.40	76.61	67.24	58.14	49.80
250 -	54.23	59.02	63.81	68.04	70.70	70.42	66.65	60.66	54.92	47.18
0 -	51.08	54.70	58.04	60.68	62.01	61.45	58.85	54.68	49.63	44.25

X-COORD

2500 -	18.43
2250 -	24.39
2000 -	29.93
1750 -	34.81
1500 -	38.72
1250 -	41.44
1000 -	42.86
750 -	43

Y-COORD 25 X-COORD

****** - WATER LEVEL HAS DROPPED BELOW BOTTOM OF AQUIFER

LANE COUNTY MANAGEMENT

DRAWDOWN

COMPUTED DRAWDOWN (ft) AFTER 15 years OF PUMPING.
THE COMBINED CAPACITY OF 10 WELL(S) IS 0 usgpm.

Y-COORD	0	250	500	750	1000	1250	1500	1750	2000	2250
2500 -	31.58	34.43	37.09	39.07	39.70	38.53	35.71	31.81	27.39	22.86
2250 -	38.94	43.28	47.76	51.64	53.47	51.99	47.74	42.08	36.00	30.02
2000 -	45.86	51.93	58.87	66.20	71.07	68.27	61.11	52.70	44.44	36.82
1750 -	51.90	59.66	69.35	81.78	120.42	88.06	75.49	63.02	52.19	42.88
1500 -	56.50	65.50	77.26	93.29	137.15	134.54	88.65	71.57	58.39	47.70
1250 -	59.26	68.68	81.09	98.22	143.98	143.06	95.46	76.48	62.19	50.84
1000 -	60.09	69.00	80.41	95.71	139.82	140.59	94.97	76.91	63.16	52.11
750 -	59.20	66.90	76.10	86.89	97.72	128.27	87.73	73.32	61.55	51.62
500 -	57.08	63.28	70.06	76.90	82.39	83.40	76.61	67.24	58.14	49.80
250 -	54.23	59.02	63.81	68.04	70.70	70.42	66.65	60.66	53.92	47.18
0 -	51.08	54.70	58.04	60.68	62.01	61.45	58.85	54.68	49.63	44.25

Y-COORD	X-COORD
2500 -	18.43
2250 -	24.39
2000 -	29.93
1750 -	34.81
1500 -	38.72
1250 -	41.44
1000 -	42.86
750 -	43.04
500 -	42.23

2500

Y-COORD X-COORD

****** - WATER LEVEL HAS DROPPED BELOW BOTTOM OF AQUIFER.

LANE COUNTY MANAGEMENT

DRAWDOWN

COMPUTED DRAWDOWN (ft) AFTER 45 years OF PUMPING.
THE COMBINED CAPACITY OF 10 WELL(S) IS 0 usgpm.

Y-COORD	0	250	500	750	1000	1250	1500	1750	2000	2250
2500 -	31.58	34.43	37.09	39.07	39.70	38.53	35.71	31.81	27.39	22.86
2250 -	38.94	43.28	47.76	51.64	53.47	51.99	47.74	42.08	36.00	30.02
2000 -	45.86	51.93	58.87	66.20	71.07	68.27	61.11	52.70	44.44	36.82
1750 -	51.90	59.66	69.35	81.78	120.42	88.06	75.49	63.02	52.19	42.88
1500 -	56.50	65.50	77.26	93.29	137.15	134.54	88.65	71.57	58.39	47.70
1250 -	59.26	68.68	81.09	98.22	143.98	143.06	95.46	76.48	62.19	50.84
1000 -	60.09	69.00	80.41	95.71	139.82	140.59	94.87	76.91	63.16	52.11
750 -	59.20	66.90	76.10	86.89	97.72	128.27	87.73	73.32	61.55	51.62
500 -	57.08	63.28	70.06	76.90	82.39	83.40	76.61	67.24	58.14	49.80
250 -	54.23	59.02	63.81	68.04	70.70	70.42	66.65	60.66	53.92	47.18
0 -	51.08	54.70	58.04	60.68	62.01	61.45	58.85	54.68	49.63	44.25

Y-COORD	X-COORD
2500 -	18.43
2250 -	24.39
2000 -	29.93
1750 -	34.81
1500 -	38.72
1250 -	41.44
1000 -	42.86
750 -	43.[illegible]4
500 -	42.23
250 -	40.73

Y-COORD 25 X-COORD

****** - WATER LEVEL HAS DROPPED BELOW BOTTOM OF AQUIFER

LANE COUNTY MANAGEMENT

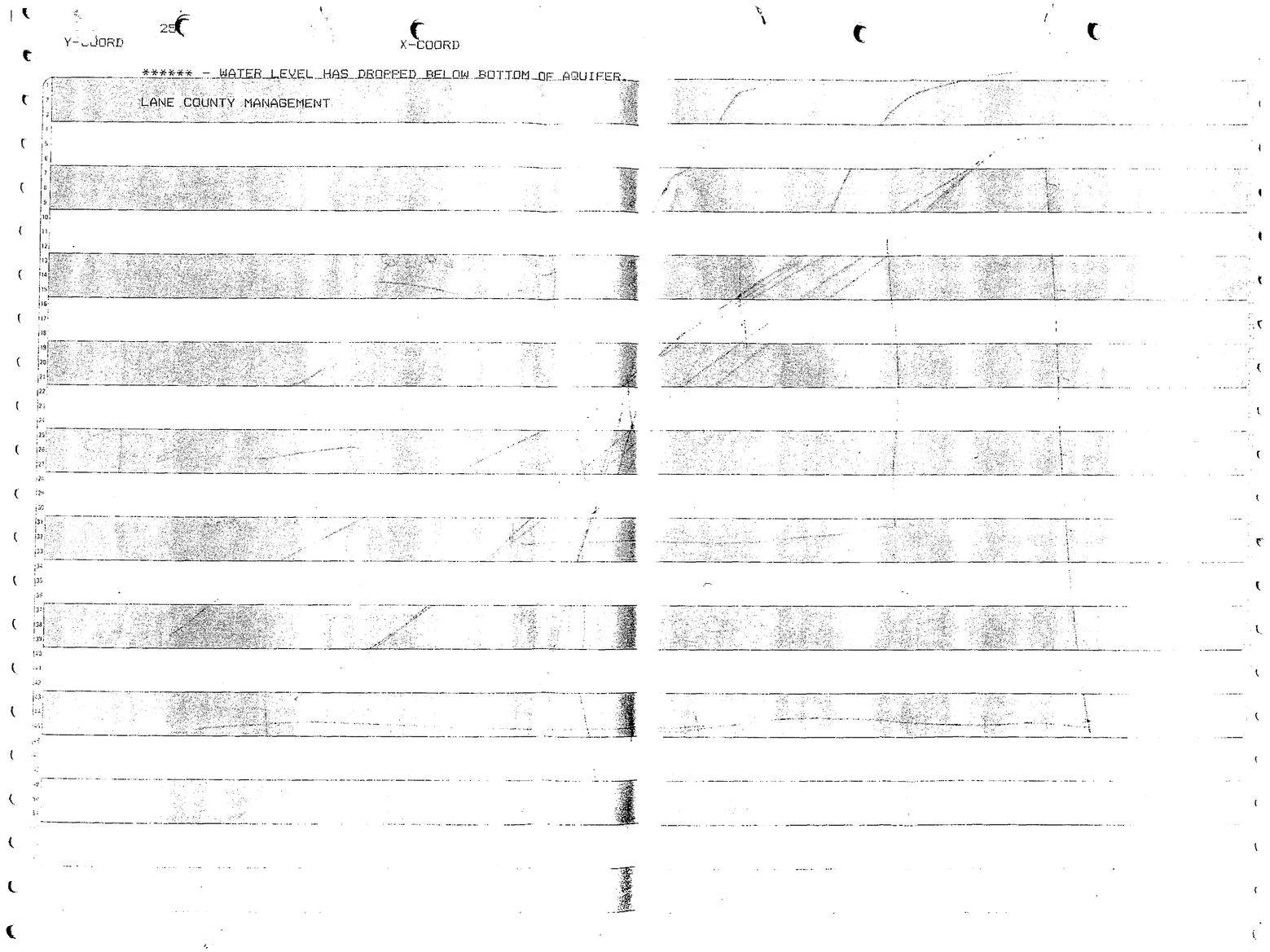


EXHIBIT "F"

AFFIDAVIT

STATE OF OREGON)
) ss.
County of Lane)

I, Art Moshofsky, after being duly sworn, depose and say:

1. I owned property located in Lane County, Oregon, described as Assessor's Map No. 18-04-24, tax lot 0300, during the period from January 1, 1978 through January 1, 1983.

2. At no time during the period stated in paragraph 1. above was the above described property managed as part of a farming operation. By "farm operation" I mean the employment of the subject property for the primary purpose of obtaining a profit in money. By "farm operation" I also mean all uses and activities defined as "farm use" and "current employment" of land in ORS 215.203(2).

3. This affidavit is consistent with and further clarifies that affidavit of mine, dated April15, 1997, a copy of which is attached hereto and by this reference incorporated herein.

Art Moshofsky

SIGNED AND SWORN to before me this 17 day of December, 2003, by Art Moshofsky.

OFFICIAL SEAL
SHAUN BOYLAN
NOTARY PUBLIC-OREGON
COMMISSION NO. 364541
MY COMMISSION EXPIRES JAN 9, 2007

Notary Public for Oregon
My commission expires: 1/9/07

AFFIDAVIT

State of Oregon
County of Lane

Before me this day personally appeared Art Moshofsky, who, first being duly sworn, deposes and says:

I owned property located in Lane County, Oregon described as Assessor's Map Number 18-04-24, tax lot 00300, during the period from January 1, 1978 through January 1, 1983. Said property is shown on attached Exhibit A which is made a part of this affidavit.

At no time during that period was the above described property managed as part of a farm operation. By "farm operation" I mean the raising, harvesting or processing of any crop or livestock with the intent of making a profit in money. Farm operation also means land which is laying fallow as part of any farm-related government program.

The property was not assessed as farm land for ad valorem property tax purposes during the above described time period.

Art Moshofsky

Sworn to and subscribed before me this 15th day of August 1997.

Patricia A. Breese

Notary Public
State of Oregon
My commission expires 1/20/2001

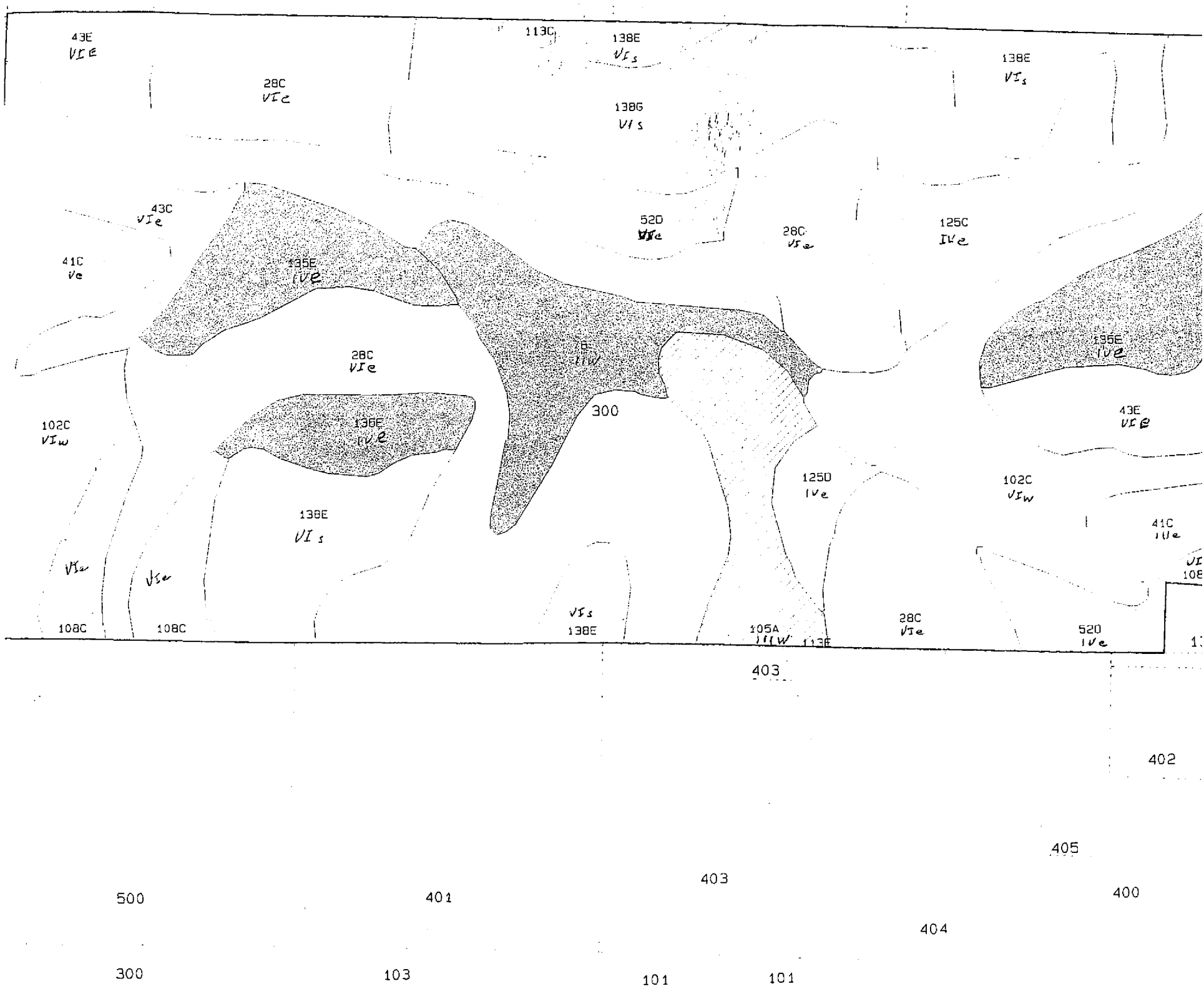
OFFICIAL SEAL
PATRICIA A. BREESE
NOTARY PUBLIC - OREGON
COMMISSION NO. 060995
MY COMMISSION EXPIRES JANUARY 20, 2001

OFFICIAL SEAL
PATRICIA A. BREESE
NOTARY PUBLIC - OREGON
COMMISSION NO. 060995
MY COMMISSION EXPIRES JANUARY 20, 2001

EXHIBIT "G"
SOIL MAP UNITS IN ACRES
FOR [illegible] 18042400 LOT 00300

MAP UNIT SYMBOL	AREA IN ACRES	PERCENT	SOIL NAME	COMPONENT NAME	AGRICULTURAL CAPABILITY CLASS
43E	28.514	8.897	DIXONVILLE-PHILOMATH-HAZELAIR COMPLEX, 12 TO 35 PERCENT SLOPES		
				DIXONVILLE	4
				PHILOMATH	6
				HAZELAIR	4
28C	79.842	24.912	CHEHULPUM SILT LOAM, 3 TO 12 PERCENT SLOPES		
				CHEHULPUM	6
138G	37.011	11.548	WITZEL VERY COBBLY LOAM, 30 TO 75 PERCENT SLOPES		
				WITZEL	6
113C	0.371	0.116	RITNER COBBLY SILTY CLAY LOAM, 2 TO 12 PERCENT SLOPES		
				RITNER	4
138E	27.256	8.504	WITZEL VERY COBBLY LOAM, 3 TO 30 PERCENT SLOPES		
				WITZEL	6
43C	10.161	3.171	DIXONVILLE-PHILOMATH-HAZELAIR COMPLEX, 3 TO 12 PERCENT SLOPES		
				DIXONVILLE	3
				PHILOMATH	6
				HAZELAIR	4
52D	13.864	4.326	HAZELAIR SILTY CLAY LOAM, 7 TO 20 PERCENT SLOPES		
				HAZELAIR	4
102C	34.574	10.788	PANTHER SILTY CLAY LOAM, 2 TO 12 PERCENT SLOPES		
				PANTHER	6
125C	9.042	2.821	STEIWER LOAM, 3 TO 12 PERCENT SLOPES		
				STEIWER	3
41C	12.157	3.793	DIXONVILLE SILTY CLAY LOAM, 3 TO 12 PERCENT SLOPES		
				DIXONVILLE	3
135E	27.358	8.536	WILLAKENZIE CLAY LOAM, 20 TO 30 PERCENT SLOPES		
				WILLAKENZIE	4
78	15.009	4.683	MCALPIN SILTY CLAY LOAM		
				MCALPIN	2
105A	11.637	3.631	PENGRA SILT LOAM, 1 TO 4 PERCENT SLOPES		

108C	9.746	3.041	PHILOMATH COBBLY SILTY CLAY, 3 TO 12 PERCENT SLOPES	
			PHILOMATH	6
125D	3.950	1.233	STEIWER LOAM, 12 TO 20 PERCENT SLOPES	
			STEIWER	4
113E	0.000	0.000	RITNER COBBLY SILTY CLAY LOAM, 12 TO 30 PERCENT SLOPES	
			RITNER	6


43E
VIE
113C
138E
VIs
28C
VIe
138G
VIs
138E
VIs
43C
VIe
520
VIe
28C
VIe
125C
IVe
41C
Ve
135E
IVe
28C
VIe
IIIW
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135E
IVe
102C
VIw
136E
IVe
125D
IVe
43E
VIE
102C
VIw
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41C
IVe
108C
VIe
108C
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101


43E
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Marc E. Setchko
CONSULTING FORESTER

870 Fox Glenn Avenue
Eugene, Oregon 97405
Phone: (541) 344-0473
FAX: (541) 344-7791

April 8, 2004

Lane County Planning Commission

RE: Lane County File #PA 03-5657, Dahlen; Response to Goal One Coalition Letter dated February 5, 2004

Members of the Planning Commission:

In December, 2003, I submitted a Forest Productivity Analysis on the Dahlen Trust South Willamette Parcel. On page three of that report I erroneously used the wrong Site Class Index. I pulled these Site Class numbers from the Lane County Soil Ratings for Forestry and Agriculture. Some of the ratings are given using 50-year Site Index numbers; some of the ratings are given using 100-year Site Index numbers. This can create some confusion when using the data; I mistakenly converted three Site Indexes from 100 year to 50 year. The numbers I converted were **already** 50 year Site Index numbers. Therefore, I have recalculated the figures used in my income calculations to reflect the correct numbers (see page 3 of my original analysis).

CALCULATIONS:

Site Index Ratings from Tables (see Exhibit 1)

	Acres	50 Year Site Index
Dixonville silty clay loam	12.157	109
Ritner cobbly silty clay loam	.371	107
Willakenzie clay loam	27.358	110

The remaining soil types have no Site Index given. However, there is one soil type, the Dixonville-Philomath-hazelair complex, which is assigned a cu.ft./ac./yr. growth figure (see Exhibit 1). Type 43C has a growth figure of 54 cu.ft./ac./yr. and 43E has a growth figure of 63 cu.ft./ac./yr. Taking these figures and dividing by 154 cu.ft./ac./yr. (the growth that the Willakenzie clay loam is capable of acheiving) gives a ratio that can be applied to the board feet per acre shown below. This gives a volume figure for the Dixonville-Philomath-hazelair complex.

Dixonville silty clay loam - 12.157 acres @ 23,872 bd.ft./ac.*	290,212 bd.ft.
Ritner cobbly silty clay loam - .371 acres @ 23,005 bd.ft./ac.*	8,535 bd.ft.
Willakenzie clay loam - 27.358 acres @ 24,305 bd.ft./ac.*	664,937 bd.ft.
Dixonville-Philomath-hazelair complex 43C -10.161ac.@ 8,522 bd.ft./ac.	86,597 bd.ft.
Dixonville-Philomath-hazelair complex 43E -28.514ac.@ 9,943 bd.ft./ac.	283,513 bd.ft.
Total - 78.561 acres of conifer producing forestland	1,333,794 bd.ft.

*See Exhibit 3.

From Page 4 and 5 of my original analysis.	
Remaining soil types - ±138 acres @ 20% of 19,972 bd.ft./ac.	551,227 bd.ft.
TOTAL VOLUME FOR ENTIRE PARCEL	1,885,021 bd.ft.

Marc E. Setchko
CONSULTING FORESTER

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Eugene, Oregon 97405
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A 50 year old stand on this site should have approximately 40% 2 SAW, 50% 3 SAW and 10% 4 SAW. If anything, these grade estimates err on the high side. In all probability there would be less 2 SAW and more 4 SAW. However, these figures are used to represent the highest possible log price scenario for the applicant.

Total Volume - 1,885.02 MBF (thousand board feet)

754.01 MBF of 2 SAW @ $255/MBF**	$192,273
942.51 MBF of 3 SAW @ $215/MBF**	202,640
55.12 MBF of 4 SAW @ $200/MBF**	37,700
Total Projected Gross Revenue	$432,613

**See Exhibit 4.

TOTAL AVERAGE GROSS INCOME -- $432,613 ÷ 50 YEARS = $8,652/YEAR

IV. CONCLUSION

The analysis presented shows conclusively that this property will not support a merchantable stand of timber, of sufficient production capability, to meet or exceed the Marginal Lands Income test: The estimated gross income based on a 50 year rotation for the 320.492 acre site would have been $432,612 in 1983. The average annual gross income would have been $8,652/year. Because $8,652 is less than $10,000/year, the property meets the following statutory test for Marginal Lands: ORS 197.247 (1)(a) "The proposed marginal land was not managed during three of the five calendar years preceding January 1, 1983, as part of a ... forest operation capable of producing an average, over the growth cycle, of $10,000 in annual gross income."

In summary, I find from the specific site conditions present, empirical yield tables, SCS data, Lane County Data and experience with similar lands, that this property is ill suited to the production of timber and use as land for forestry purposes. It is my opinion that this parcel meets the criteria for marginal land status.

Sincerely,

Marc E. Setchko

Marc E. Setchko
CONSULTING FORESTER

870 Fox Glenn Avenue
Eugene, Oregon 97405
Phone: (541) 344-0473
FAX: (541) 344-7791

FOREST PRODUCTIVITY ANALYSIS
for
Dahlen Trust

SUBJECT PARCEL: ASSESSORS MAP NO. 18-04-24
Tax Lot 300, totalling ±320.492 acres.

I. INTRODUCTION

An evaluation of the site, as described above, from a timber productivity and income producing standpoint is reviewed in this analysis. The analysis will determine if:
1) The subject property produces less than 85 cu. ft./ac./yr. of conifer timber volume. This has been determined by Lane County, and the State of Oregon, to be the measuring parameter for marginal soils.
2) The income generated averages less than $10,000/year, based on 1978 through 1983 log prices. If this is the case, the property meets the following statutory test for Marginal Lands: ORS 197.247 (1)(a) "The proposed marginal land was not managed during three of the five calendar years preceding January 1, 1983, as part of a ... forest operation capable of producing an average, over the growth cycle, of $10,000 in annual gross income."

The above figures can be calculated by:
1. Using actual cutout data from when any logging was done on the parcel.
2. Using a combination of the 1) Lane County Soil Ratings for Forestry & Agriculture (August, 1997), 2) U.S. Dept. of Agriculture SCS Data, as presented in the Soil Survey of Lane County Area, 3) Lane County Soil Ratings taken from the Office of the State Forester Memorandum (Feb. 8, 1990 General File 7-1-1) and 4) estimates of growth from the CMAI (Culmination of Mean Annual Increment) FOR DOUGLAS-FIR Table and the Empirical Yield Tables for the Douglas-fir Zone, Washington Department of Natural Resources by Charles Chambers and Franklin Wilson.

II. SITE INFORMATION

The subject parcel is 320.492 acres in size. Terrain throughout the site is rolling with knolls and swales on either side of a valley running from the southeast portion of the parcel up through the northwest portion, with Spencer Creek running through the middle of this valley. Slopes throughout the property range from 10-35%, with a few steeper pitches in places. The parcel has all aspects from north to south, west to east and every combination in between. Grasses, blackberry, poison oak, scrub white oak and other hardwoods cover most of the property, with bedrock just beneath the surface or exposed in places. Broken rock and cobbly soils, with high concentrations of clay, are prevalent throughout the parcel. There are also scattered Douglas-fir, ponderosa pine and incense cedar, left from previous logging activities. An LCOG soil survey confirms SCS map data, which shows the parcel is composed of twelve different soil types (see Soils Map included with Jim Belknap's report). Over half of the property (≈188.429 acres) is underlaid with Chehulpum silt loam (Soil Type 28C), Panther silty clay loam (Soil Type 102C), Philomath cobbly silty clay (Soil Type 108C) and Witzell very cobbly loam (Soil Type 138E & G). These soil types are extremely poor for growing conifers. The remaining portions of the parcel are underlaid with Dixonville silty clay loam (Soil Type 41C), Dixonville-Philomath-Hazelair complex (Soil Types 43C and E), Hazelair silty clay loam (Soil Type 52D), McAlpin silty clay loam (Soil Type 78), Pengra silt loam (Soil Type 105A), Ritner cobbly silty clay loam (Soil Type 113C), Steiwer loam (Soil Type 125C) and Willakenzie clay loam (Soil Type 135E).

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Of these soil types, only the Ritner cobbly silty clay loam, the Dixonville silty clay loam and the Willakenzie clay loam are good soils for growing conifer, and these particular soil types only cover approximately 40 acres of the entire parcel. The Dixonville-Philomath-hazelair complex is marginally suited for conifer growth, but covers only ±39 acres of the property. The other soil types are primarily suited for grassland and noncommercial hardwood species.

The Lane County Soil Ratings for Forestry and Agriculture (see Exhibit 1) show a 100 year site class rating for only three of these soil types, the Dixonville silty clay loam, the Ritner cobbly silty clay loam and the Willakenzie clay loam. A cu.ft./ac./yr. growth figure is shown for the Dixonville-Philomath-Hazelair complex, but not a site class rating. The remaining soil types are very poor conifer growing soils and have no forestland site class rating or cu.ft./ac./yr. growth figure shown in the Lane County Soil Ratings.

III. RESULTS OF PRODUCTIVITY AND INCOME CALCULATIONS

CUBIC FEET PER YEAR PER ACRE GROWTH

The Land Management Division of Lane County has agreed that the above described parcel does not produce more than 85 cu.ft./ac./yr., the standard used to determine if the land meets the criteria for marginal lands status (see letter to Jim Belknap from Jerry Kendall dated October 14, 2003).

AVERAGE GROSS ANNUAL INCOME GENERATED PER YEAR THROUGH A COMPLETE ROTATION

The property was logged in 1990. Since no cutout records are available, the Empirical Yield Tables were used to obtain total volume per acre in scribner board feet volume, the measurement needed in order to calculate income potential. These yield tables are calculated using King's 50 year site class index. Since the Lane County Soil Ratings for Forestry and Agriculture are based on McArdle's 100 year site index rating, these ratings must be converted first. Using the 50 year Site Index ratings, for each different soil type, the volume per acre for each soil type can be calculated. Adding all the soil types together will give a total for the entire parcel. A fifty year rotation (growth cycle to final harvest) was used, as this is the rotation age accepted by Lane County (Issue 5: Supplement to Marginal Lands Information Sheet, 1997). The State of Oregon also accepts this rotation.

Once a total volume at harvest age has been calculated, the average gross annual income can be found by dividing the total revenue at the time of harvest by the number of years in the rotation. Since the Empirical Yield Tables are based on Douglas-fir volumes, Douglas-fir log prices were used, as this is the predominant commercial species in western Oregon. This should also give the highest figure because Ponderosa pine has historically never been worth as much as Douglas-fir, and incense cedar was worth very little in 1978-83.

Using industry-recognized price information from the Oregon State Department of Forestry Quarterly Report of Douglas-fir log prices for 1983, the gross worth of a fully stocked stand on this parcel can be calculated, for the time period required by the Marginal Lands Statute ORS 197.247 (1)(a). By calculating a gross worth based on a fully stocked stand of Douglas-fir, a maximum gross worth scenario for the applicant can be shown.

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CALCULATIONS:

Site Index Ratings from Tables (see Exhibit 2)

	Acres	100 Year Site Index	50 Year Site Index
Dixonville silty clay loam	12.157	109	96
Ritner cobbly silty clay loam	.371	107	95
Willakenzie clay loam	27.358	110	97

The remaining soil types have no Site Index given. However, there is one soil type, the Dixonville-Philomath-hazelair complex, which is assigned a cu.ft./ac./yr. growth figure (see Exhibit .). Type 43C has a growth figure of 54 cu.ft./ac./yr. and 43E has a growth figure of 63 cu.ft./ac./yr. Taking these figures and dividing by 154 cu.ft./ac./yr. (the growth that the Willakenzie clay loam is capable of acheiving) gives a ratio that can be applied to the board feet per acre shown below. This gives a volume figure for the Dixonville-Philomath-hazelair complex.

Dixonville silty clay loam - 12.157 acres @ 18,067 bd.ft./ac.*	219,641 bd.ft.
Ritner cobbly silty clay loam - .371 acres @ 17,591 bd.ft./ac.*	6,526 bd.ft.
Willakenzie clay loam - 27.358 acres @ 18,543 bd.ft./ac.*	507,299 bd.ft.
Dixonville-Philomath-hazelair complex 43C -10.161ac.@ 6,502 bd.ft./ac.	66,067 bd.ft.
Dixonville-Philomath-hazelair complex 43E -28.514ac.@ 7,586 bd.ft./ac.	216,307 bd.ft.
Total - 78.561 acres of conifer producing forestland	1,015,840 bd.ft.

*See Exhibit 3.

A 50 year old stand on this site should have approximately 40% 2 SAW, 50% 3 SAW and 10% 4 SAW. If anything, these grade estimates err on the high side. In all probability there would be less 2 SAW and more 4 SAW. However, these figures are used to represent the highest possible log price scenario for the applicant.

Total Volume - 1,015.84 MBF (thousand board feet)

406.34 MBF of 2 SAW @ $255/MBF**	$103,617
507.92 MBF of 3 SAW @ $215/MBF**	109,203
101.58 MBF of 4 SAW @ $200/MBF**	20,316
Total Projected Gross Revenue	$233,136

**See Exhibit 4.

AVERAGE GROSS INCOME -- $233,136 ÷ 50 YEARS = $4,663/YEAR

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The volume calculations shown exclude ±242 acres, some of which has grown timber in the past and/or has timber on it at the present time. Of these acres, approximately 104 acres are grassland or areas with widely scattered small scrub white oak and poison oak, with blackberry creeping in. Due to shallow or nonexistent soils, rock and wet areas, these areas will not even support hardwood stands and have never had conifer growing on them. They are natural grassland meadows. The remaining ±138 acres are, or were in the recent past (before logging), poorly stocked stands of hardwoods and conifers mixed together. The soils in these areas are shallow, rocky and in some areas too wet to support a fully stocked stand of conifers. The conifers growing are scattered and/or clumped in pockets of soil capable of sustaining growth. These pockets are scattered throughout areas which are too wet for conifers to grow, too rocky to allow any trees a foothold or too shallow to allow for root growth. All of these factors are evident on the ground or within the existing stands of trees growing in areas classified as nonproductive. Plots taken within these stands or areas, to determine the number of conifers per acre growing (or the number that were there prior to logging activities), show that 48.5 conifer trees (primarily Douglas-fir) per acre are growing or were growing before logging activities. Further observations show that in areas which were logged, then planted to more than this number of trees per acre, that the seedling mortality is extremely high and the native noncommercial hardwoods, brush and invasive species (primarily blackberry) continue to encroach upon the areas. The end result is poorly stocked stands; similar to what existed in the past. And, due to the soil conditions and hardwood competition discussed above, it is extremely unlikely that new, fully stocked stands of conifer will ever become established.

The remaining ±138 acres will support some timber; this can be shown by historical evidence and existing stands. Using the figure of 48.5 merchantable conifers per acre (from plots taken in the field) and comparing this number to the number of merchantable trees in a fully stocked stand of Douglas-fir, on Site IV ground, a ratio can be obtained. This ratio can then be used to obtain an approximate volume per acre figure for the above mentioned acres. Site IV is used because that is the lowest site ground generally accepted as forestland (Site V being considered nonproductive from a forestry standpoint) and the other soils on the property are Site IV and V as well. The number of merchantable trees per acre at 60 years, in a fully stocked stand, on Site IV ground is 246 per acre (see Exhibit 5). The remaining trees per acre shown are not of merchantable size and are not counted. Sixty years is used because no numbers are shown for a 50 year old stand. Since stands will self thin over time, and the number of trees per acre will decrease over time, this number will actually be lower than the number of trees at 50 years, even though the volume will be greater due to ten years of growth. The table shows this, as there are many more trees per acre at 40 years of age than 60 years. Taking the above numbers shown for 60 years show the stocking level of the stands on the parcel to be approximately 20% of a fully stocked stand at this age on this site ground (48.5 from field plots ÷ 246 from table). If a higher number of trees per acre is used the stocking percentage will actually be even lower than 20%. Using 20% will actually result in a higher volume figure being used, which will result in a higher potential income being projected. This volume figure can then be added to the volume figures shown above, to obtain a gross revenue figure for the entire parcel.

Remaining soil types - ±138 acres @ 20% of 19,972 bd.ft./ac.* 551,227 bd.ft.

*See Exhibit 3.

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A 50 year old stand on this site should have approximately 40% 2 SAW, 50% 3 SAW and 10% 4 SAW. If anything, these grade estimates err on the high side. In all probability there would be less 2 SAW and more 4 SAW. However, these figures are used to represent the highest possible log price scenario for the applicant.

Total Volume - 551.23 MBF (thousand board feet)

220.49 MBF of 2 SAW @ $255/MBF**	$56,225
275.62 MBF of 3 SAW @ $215/MBF**	59,258
55.12 MBF of 4 SAW @ $200/MBF**	11,024
Total Projected Gross Revenue	$126,507

**See Exhibit 4.

TOTAL VOLUME FOR ENTIRE PARCEL 1,567,067 bd.ft.

TOTAL AVERAGE GROSS INCOME -- $359,643 ÷ 50 YEARS = $7,193/YEAR

IV. CONCLUSION

The analysis presented shows conclusively that this property will not support a merchantable stand of timber, of sufficient production capability, to meet or exceed the Marginal Lands Income test. The estimated gross income based on a 50 year rotation for the 320.492 acre site would have been $359,643 in 1983. The average annual gross income would have been $7,193/year. Because $7,193 is less than $10,000/year, the property meets the following statutory test for Marginal Lands: ORS 197.247 (1)(a) "The proposed marginal land was not managed during three of the five calendar years preceding January 1, 1983, as part of a ... forest operation capable of producing an average, over the growth cycle, of $10,000 in annual gross income."

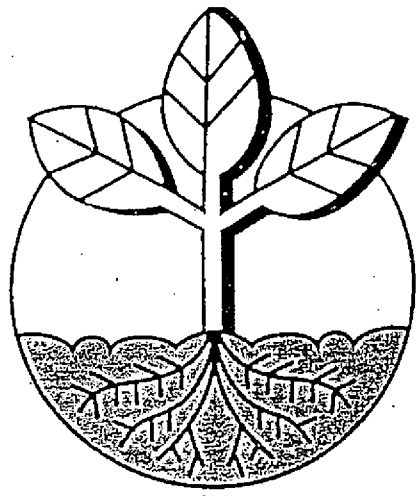
In summary, I find from the specific site conditions present, empirical yield tables, SCS data, Lane County Data and experience with similar lands, that this property is ill suited to the production of timber and use as land for forestry purposes. It is my opinion that this parcel meets the criteria for marginal land status.

Sincerely,

Marc E Setchko

EXHIBIT "J"

Lane County
Soil Ratings for Forestry and Agriculture



Lane County

Lane County
Land Management Division

August 1997

Prepared by
Lane Council of Governments

Lane County
Soil Ratings for Forestry and Agriculture

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Land Management Division

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Lane County Soil Ratings for Forestry and Agriculture

The Lane County Land Management Division, with technical assistance from Lane Council of Governments, compiled this data to assist the public in preparing land use applications. The Natural Resources Conservation Service (NRCS) reviewed the data and methodology.

Map Symbol	Lane County Soil Map Unit	Douglas Fir Site Index	Cu. Ft./ Acre/ Year	Agricultural Capability Class	High Value Farmland
01A	Abiqua silty clay loam, 0 - 3% slopes	135	203	1	X
01B	Abiqua silty clay loam, 3 - 5% slopes	135	203	2	X
02E	Astoria silt loam, 5 - 30% slopes	130	193	6	
03E	Astoria Variant silt loam, 3 - 30% slopes	none		6	
03G	Astoria Variant silt loam, 30 - 60% slopes	none		6	
04G	Atring-Rock outcrop complex, 30 - 60% slopes	***	81	6	
05	Awbrig silty clay loam	none		4	X
06	Awbrig-Urban land complex	none		4	
07B	Bandon sandy loam, 0 - 7% slopes	105	145	3	
07C	Bandon sandy loam, 7 - 12% slopes	105	145	3	
07F	Bandon sandy loam, 12 - 50% slopes	105	145	6	
08	Bashaw clay	none		4	X
09	Bashaw-Urban land complex	none		4	
10	Beaches	none		8	
11C	Bellpine silty clay loam, 3 - 12% slopes	115	163	3	X
11D	Bellpine silty clay loam, 12 - 20% slopes	115	163	3	X
11E	Bellpine silty clay loam, 20 - 30% slopes	115	163	4	X
11F	Bellpine silty clay loam, 30 - 50% slopes	115	163	6	
12E	Bellpine cobbly silty clay loam, 2 - 30% slopes	115	163	4	
13F	Blachly clay loam, 30 - 50% slopes	119	173	6	
13G	Blachly clay loam, 50 - 70% slopes	119	173	7	
14E	Blachly silty clay loam, 3 - 30% slopes	125	184	6	
14F	Blachly silty clay loam, 30 - 50% slopes	125	184	6	
15E	Blachly-McCully clay loam, 3 - 30% slopes	***	172	6	
16D	Bohannon gravelly loam, 3 - 25% slopes	118	171	6	
16F	Bohannon gravelly loam, 25 - 50% slopes	118	171	6	
16H	Bohannon gravelly loam, 50 - 90% slopes	118	171	7	
17	Brallier muck, drained	none		4	
18	Brallier Variant muck	none		5	
19	Brenner silty clay loam	none		3	X
20B	Briedwell cobbly loam, 0 - 7% slopes	103	141	3	X
21B	Bullards-Ferrelo loams, 0 - 7% slopes	***	84	3	
21C	Bullards-Ferrelo loams, 7 - 12% slopes	***	84	3	
21E	Bullards-Ferrelo loams, 12 - 30% slopes	***	76	4	
21G	Bullards-Ferrelo loams, 30 - 60% slopes	***	76	6	

Lane County Soil Ratings for Forestry and Agriculture

Map Symbol	Lane County Soil Map Unit	Douglas Fir Site Index	Cu. Ft./ Acre/ Year	Agricultural Capability Class	High Value Farmland
22	Camas gravelly sandy loam, occasionally flooded	none		4	
23	Camas-Urban land complex	none		4	
24	Chapman loam	none		1	X
25	Chapman-Urban land complex	none		1	X
26	Chehalis silty clay loam, occasionally flooded	none		2	X
27	Chehalis-Urban land complex	none		2	X
28C	Chehulpum silt loam, 3 - 12% slopes	none		6 *	
28E	Chehulpum silt loam, 12 - 40% slopes	none		6	
29	Cloquato silt loam	none		2	X
30	Cloquato-Urban land complex	none		2	X
31	Coburg silty clay loam	none		2	X
32	Coburg-Urban land complex	none		2	X
33	Conser silty clay loam	none		3	X
34	Courtney gravelly silty clay loam	none		4	X
35D	Cruiser gravelly clay loam, 3 - 25% slopes	140**	145	6	
35F	Cruiser gravelly clay loam, 25 - 50% slopes	140**	145	6	
35G	Cruiser gravelly clay loam, 35 - 70% slopes	140**	145	7	
36D	Cumley silty clay loam, 2 - 20% slopes	114	162	6	
37C	Cupola cobbly loam, 3 - 12% slopes	100	136	6	
37E	Cupola cobbly loam, 12 - 30% slopes	100	136	6	
38	Dayton silt loam, clay substratum	none		4	X
39E	Digger gravelly loam, 10 - 30% slopes	102	140	6	
39F	Digger gravelly loam, 30 - 50% slopes	102	140	6	
40H	Digger-Rock outcrop complex, 50 - 85% slopes	***	114	7	
41C	Dixonville silty clay loam, 3 - 12% slopes	109	152	3	
41E	Dixonville silty clay loam, 12 - 30% slopes	109	152	4	
41F	Dixonville silty clay loam, 30 - 50% slopes	109	152	6	
42E	Dixonville-Hazelair-Urban land complex, 12 - 35% slopes	***	89	4	
43C	Dixonville-Philomath-Hazelair complex, 3 - 12% slopes	***	54	3	
43E	Dixonville-Philomath-Hazelair complex, 12 - 35% slopes	***	63	4	
44	Dune land	none		8	
45C	Dupee silt loam, 3 - 20% slopes	none		3	
46	Eilertsen silt loam	133	199	2	X
47E	Fendall silt loam, 3 - 30% slopes	125	184	6	
48	Fluvents, nearly level	none		--	
49E	Formader loam, 3 - 30% slopes	121	176	6	
49G	Formader loam, 30 - 60% slopes	121	176	6	
50G	Formader-Hembre-Klickitat complex, 50 - 80% slopes	***	176	7	

Lane County Soil Ratings for Forestry and Agriculture

Map Symbol	Lane County Soil Map Unit	Douglas Fir Site Index	Cu. Ft./ Acre/ Year	Agricultural Capability Class	High Value Farmland
51B	Haflinger-Jimbo complex, 0 - 5% slopes	***	165	6	X
52B	Hazelair silty clay loam, 2 - 7% slopes	none		3	
52D	Hazelair silty clay loam, 7 - 20% slopes	none		4	
53	Heceta fine sand	none		4	
54D	Hembre silt loam, 5 - 25% slopes	127	188	6	
54G	Hembre silt loam, 25-60% slopes	127	188	6	
55E	Hembre-Klickitat complex, 3 - 30% slopes	***	177	6	
55G	Hembre-Klickitat complex, 30 - 60% slopes	***	176	6	
56	Holcomb silty clay loam	none		3	X[1]
57D	Holderman extremely cobbly loam, 5 - 25% slopes	119**	113	6	
57F	Holderman extremely cobbly loam, 25 - 50% slopes	119**	113	6	
57G	Holderman extremely cobbly loam, 50 - 75% slopes	119**	113	7	
58D	Honeygrove silty clay loam, 3 - 25% slopes	122	178	6	
58F	Honeygrove silty clay loam, 25 - 50% slopes	122	178	6	
59E	Hullt loam, 2 - 30% slopes	121	176	3	X
59G	Hullt loam, 30 - 60% slopes	121	176	6	
60D	Hummington gravelly loam, 5 - 25% slopes	131**	131	6	
60F	Hummington gravelly loam, 25 - 50% slopes	131**	131	6	
60G	Hummington gravelly loam, 50 - 75% slopes	131**	131	7	
61	Jimbo silt loam	121	176	1	X
62B	Jimbo-Haflinger complex, 0 - 5% slopes	***	171	1	X
63C	Jory silty clay loam, 2 - 12% slopes	122	178	2	X
63D	Jory silty clay loam, 12 - 20% slopes	122	178	3	X
63E	Jory silty clay loam, 20 - 30% slopes	122	178	4	X
64D	Keel cobbly clay loam, 3 - 25% slopes	132**	133	6	
64F	Keel cobbly clay loam, 25 - 45% slopes	132**	133	6	
64G	Keel cobbly clay loam, 45 - 75% slopes	132**	133	7	
65G	Kilchis stony loam, 30 - 60% slopes	90	116	6	
65H	Kilchis stony loam, 60 - 90% slopes	90	116	7	
66D	Kinney cobbly loam, 3 - 20% slopes	122	178	6	
67F	Kinney cobbly loam, 20 - 50% north slopes	122	178	6	
67G	Kinney cobbly loam, 50 - 70% north slopes	122	178	7	
68F	Kinney cobbly loam, 20 - 50% south slopes	122	178	6	
68G	Kinney cobbly loam, 50 - 70% south slopes	122	178	7	
69E	Kinney cobbly loam, slump, 3 - 30% slopes	122	178	6	
70E	Klickitat stony loam, 3 - 30% slopes	112	158	6	
71F	Klickitat stony loam, 30 - 50% north slopes	112	158	6	
71G	Klickitat stony loam, 50 - 75% north slopes	112	158	7	

Lane County Soil Ratings for Forestry and Agriculture

Map Symbol	Lane County Soil Map Unit	Douglas Fir Site Index	Cu. Ft./ Acre/ Year	Agricultural Capability Class	High Value Farmland
72F	Klickitat stony loam, 30 - 50% south slopes	112	158	6	
72G	Klickitat stony loam, 50 - 75% south slopes	112	158	7	
73	Linslaw loam	none		3	X[1]
74B	Lint silt loam, 0 - 7% slopes	117	169	3	
74C	Lint silt loam, 7 - 12% slopes	117	169	3	
74D	Lint silt loam, 12 - 20% slopes	117	169	3	
74E	Lint silt loam, 20 - 40% slopes	117	169	4	
75	Malabon silty clay loam	none		1	X
76	Malabon-Urban land complex	none		1	X
77B	Marcola cobbly silty clay loam, 2 - 7% slopes	none		4	
78	McAlpin silty clay loam	none		2	X
79	McBee silty clay loam	none		3	X[2]
80F	McCully clay loam, 30 - 35% slopes	118	171	6	
80G	McCully clay loam, 50 - 70% slopes	118	171	7	
81D	McDuff clay loam, 3 - 25% slopes	112	158	6	
81F	McDuff clay loam, 25 - 50% slopes	112	158	6	
81G	McDuff clay loam, 50 - 70% slopes	112	158	7	
82C	Meda loam, 2 - 12% slopes	none		3	X
83B	Minniece silty clay loam, 0 - 8% slopes	none		6	
84D	Mulkey loam, 5 - 25% slopes	none		6	
85	Natroy silty clay loam	none		4	X
86	Natroy silty clay	none		4	X
87	Natroy-Urban land complex	none		4	X
88	Nehalem silt loam	none		2	X
89C	Nekia silty clay loam, 2 - 12% slopes	113	160	3	X
89D	Nekia silty clay loam, 12 - 20% slopes	113	160	3	X
89E	Nekia silty clay loam, 20 - 30% slopes	113	160	4	
89F	Nekia silty clay loam, 30 - 50% slopes	113	160	6	
90	Nekorna silt loam	none		3	
91D	Neskowin silt loam, 12 - 20% slopes	none		6	
91E	Neskowin silt loam, 20 - 40% slopes	none		6	
92G	Neskowin-Salander silt loams, 40 - 60% slopes	none		6	
93	Nestucca silt loam	none		3	
94C	Netarts fine sand, 3 - 12% slopes	none		6	
94E	Netarts fine sand, 12 - 30% slopes	none		6	
95	Newberg fine sandy loam	none		2	X
96	Newberg loam	none		2	X

Lane County Soil Ratings for Forestry and Agriculture

Map Symbol	Lane County Soil Map Unit	Douglas Fir Site Index	Cu. Ft./ Acre/ Year	Agricultural Capability Class	High Value Farmland
97	Newberg-Urban land complex	none		2	X
98	Noti loam	none		4	X
99H	Ochrepts & Umbrepts, very steep	none		--	
100	Oxley gravelly silt loam	none		3	
101	Oxley-Urban land complex	none		3	
102C	Panther silty clay loam, 2 - 12% slopes	none		6	
103C	Panther-Urban land complex, 2 - 12% slopes	none		6	
104E	Peavine silty clay loam, 3 - 30% slopes	125	184	6	
104G	Peavine silty clay loam, 30 - 60% slopes	125	184	6	
105A	Pengra silt loam, 1 - 4% slopes	none		3	X[1]
106A	Pengra-Urban land complex, 1 - 4% slopes	none		3	
107C	Philomath silty clay, 3 - 12% slopes	none		6	
108C	Philomath cobbly silty clay, 3 - 12% slopes	none		6	
108F	Philomath cobbly silty clay, 12 - 45% slopes	none		6	
109F	Philomath-Urban land complex, 12 - 45% slopes	none		6	
110	Pits	none		8	
111D	Preacher loam, 0 - 25% slopes	128	190	6	
111F	Preacher loam, 25 - 50% slopes	128	190	6	
112G	Preacher-Bohannon-Slickrock complex, 50 - 75% slopes	***	188	7	
113C	Ritner cobbly silty clay loam, 2 - 12% slopes	107	149	4	
113E	Ritner cobbly silty clay loam, 12 - 30% slopes	107	149	6	
113G	Ritner cobbly silty clay loam, 30 - 60% slopes	107	149	7	
114	Riverwash	none		8	
115H	Rock outcrop-Kilchis complex, 30 - 90% slopes	***	27	8	
116G	Rock outcrop-Witzel complex, 10 - 70% slopes	***	none	8	
117E	Salander silt loam, 12 - 30% slopes	125	184	6	
118	Salem gravelly silt loam	none		2	X
119	Salem-Urban land complex	none		2	X
120B	Salkum silt loam, 2 - 6% slopes	116	167	2	X
121B	Salkum silty clay loam, 2 - 8% slopes	116	167	2	X
121C	Salkum silty clay loam, 8 - 16% slopes	116	167	3	X
122	Saturn clay loam	123	180	3	
123	Sifton gravelly loam	124	182	3	X
124D	Slickrock gravelly loam, 3 - 25% slopes	137	209	6	
124F	Slickrock gravelly loam, 25 - 50% slopes	137	209	6	
125C	Steiwer loam, 3 - 12% slopes	none		3	
125D	Steiwer loam, 12 - 20% slopes	none		4*	

Lane County Soil Ratings for Forestry and Agriculture

Map Symbol	Lane County Soil Map Unit	Douglas Fir Site Index	Cu. Ft./ Acre/ Year	Agricultural Capability Class	High Value Farmland
125F	Steiwer loam, 20 - 50% slopes	none		6	
126F	Tahkenitch loam, 20 - 45% slopes	124	182	6	
126G	Tahkenitch loam, 45 - 75% slopes	124	182	7	
127C	Urban land-Hazelair-Dixonville complex, 3 - 12% slopes	***	68	8	
128B	Veneta loam, 0 - 7% slopes	108	150	2	X
129B	Veneta Variant silt loam, 0 - 7% slopes	124	182	2	X
130	Waldo silty clay loam	none		3	
131C	Waldport fine sand, 0 - 12% slopes	none		6	
131E	Waldport fine sand, 12 - 30% slopes	none		7	
131G	Waldport fine sand, 30 - 70% slopes	none		7	
132E	Waldport fine sand, thin surface, 0 - 30% slopes	none		7	
133C	Waldport-Urban land complex, 0 - 12% slopes	none		6	
134	Wapato silty clay loam	none		3	X[3]
135C	Willakenzie clay loam, 2 - 12% slopes	110	154	3	X
135D	Willakenzie clay loam, 12 - 20% slopes	110	154	3	X
135E	Willakenzie clay loam, 20 - 30% slopes	110	154	4	X
135F	Willakenzie clay loam, 30 - 50% slopes	110	154	6	
136	Willanch fine sandy loam	none		3	
137F	Winberry very gravelly loam, 10 - 45% slopes	none		7	
138E	Witzel very cobbly loam, 3 - 30% slopes	none		6	
138G	Witzel very cobbly loam, 30 - 75% slopes	none		6	
139	Woodburn silt loam	none		2	X
140	Yaquina loamy fine sand	none		4	
141	Yaquina-Urban land complex	none		4	
142G	Yellowstone-Rock outcrop, 10 - 60% slopes	none		7	

*	Indicates soils which have an irrigated capability class which is different from the non-irrigated capability class.
**	Indicates productivity calculated using 100-year Douglas fir data.
***	Indicates soil complexes with multiple site indices, refer to the CuFt/Acre/Year column for a composite volume rating for the complex.
"none"	Indicates soil map units that lack site index information on Douglas fir. The soil map unit may have the capability to produce Douglas fir, but this productivity may be very low to very high. No site index has been collected by the NRCS due to lack of suitable sites or lack of time and or funds.
X[1]	Only drained areas are high value farmland.
X[2]	Only areas protected from flooding or not frequently flooded during the growing season are high value farmland.
X[3]	Only drained areas that are either protected from flooding or not frequently flooded during the growing season are high value farmland.

SOURCE AND DESCRIPTION OF THE DATA

Map Symbol

Data Source

USDA-Soil Conservation Service, September 1987. *Soil Survey of Lane County Area, Oregon.*

Soil Map Unit

Data Source

USDA-Soil Conservation Service, September 1987. *Soil Survey of Lane County Area, Oregon.*

Site Index

Data Source

USDA-Natural Resources Conservation Service, August 1997 printout from the National Soils Information System (NASIS). *Soils Database for Lane County, Woodland Management and Productivity* table.

Description

These site indices indicate the average height, in feet, that dominant and codominant Douglas fir trees attain in 50 years. The site index applies to fully stocked, even-aged, unmanaged stands. This table lists only site indices for Douglas fir and does not list site indices for soil complexes. The Description under Cubic Feet/Acre/Year explains the composite volume rating in this table for soil complexes.

Cubic feet/acre/year

Data Source

USDA-Soil Conservation Service, June 1986. *Technical Note No. 2 Revised, Culmination of Mean Annual Increment for Commercial Forest Trees of Oregon.*

Description

Converting site index to cubic feet/acre/year expresses productivity as a volume of wood fiber produced. For map units that are predominantly one soil type, it is straightforward to use the tables in Technical Note No. 2 to look up the cubic feet/acre/year that a soil could potentially produce based on the site index in the State Soils Database. Calculating a volume rating for a complex is more problematic. The NRCS reports site index data for each component of a soil complex but does not calculate a composite volume for the entire complex. A complex is a soil map unit which has two or more kinds of soil in such an intricate pattern or so small in area that the soils cannot be delineated separately at the scale of mapping.

The methodology used in this table to calculate forest productivity volume ratings for soil complexes involves applying a weighted average to each component of the complex and then normalizing to base it on 100% excluding the inclusions. The following example illustrates this calculation for a soil complex which has a site index for only one of the two components.

43 C	*Dixonville-Philomath-Hazelair complex 3-12%*				
Component	*Actual %*	*Normalized %**	*Site Index*	*CuFt / Ac / Yr*	*Normalized % x Cu.F.t / Ac. / Year*
Dixonville	30%	35%	97	130	46
Philomath	30%	35%	-	-	-
Hazelair	25%	29%			
Total	85%	100%			46

* $\text{Normalized \%} = \dfrac{\%\ of\ Individual\ Component}{100 - (\%\ Inclusions + \%\ Urban\ Land)}$

Agricultural Capability Class

Data Source

USDA-Natural Resources Conservation Service, August 1997 printout from the National Soils Information System (NASIS). *Soils Database for Lane County, Land Capability and Yields Per Acre of Crops and Pasture* table.

Description

Land capability class, often called agricultural capability class, generally shows the suitability of soils for most kinds of field crops. The Soil Survey describes capability class: "The soils are grouped according to their limitations for field crops, the risk of damage if they are used for field crops, and the way they respond to management." There are eight capability classes, I through VIII (sometimes written as 1 through 8), indicating progressively greater limitations for use as cropland. The land capability classification is discussed in USDA Agriculture Handbook No. 210, issued September 1961 and reprinted January 1973.

The NRCS reports both irrigated and non-irrigated capability classes. In Lane County, because of adequate rainfall, the ratings are the same for irrigated and non-irrigated except for all but two map units (28C, Chehulpum silt loam, 3-12%, and 125D, Steiwer loam, 3-12%). This table lists the non-irrigated capability class. For soil complexes, this table lists only the capability class of the most predominant soil in the complex (which is the first soil in the name of the map unit).

High Value Soils

Data Source

Land Conservation and Development Commission, adopted February 18, 1994. *Oregon Administrative Rules, Chapter 660, Division 33* (OAR 660-33).

Description

The Agricultural Land Rule (OAR 660-33) defines "high value farmland" as land in a tract composed predominantly of soils that are prime, unique, Class I or II, and other soils as specified in the rule. These other soils include the wet clay soils on valley terraces that are generally used for grass seed production, and moderately sloping soils on low foothills.

NRCS is the agency responsible for classifying soils as prime, unique, or land capability class I through VIII (1 through 8). The names 'prime' and 'unique' are what they imply. Prime soils are the best soils from a national perspective—easy to farm, suitable for a wide variety of crops, producing the highest yields. NRCS designates unique soils in conjunction with the state and county so as to recognize soils suited for growing a specialty crop of state or local importance, e.g., the soils on the southern Oregon coast used for growing cranberries and the organic soils in the Willamette Valley used for growing onions. Lane County has not requested the designation of any unique soils. Class I and II are land capability classes—the soils in them have the fewest limitations for crop growth. Refer to the description of Agricultural Capability Class (immediately above) for more information.

Note: The Soil Conservation Service and Natural Resources Conservation Service are the same USDA agency. A name change to Natural Resources Conservation Service was approved in 1994.

Page 5: Mr. Just states that virtually all of the Valley ponderosa pine was harvested in the years following settlement. This is true; along with every other conifer species in the valley.

Mr. Just then states a site index of 104 from *Establishing and Managing Ponderosa Pine in the Willamette Valley.* In this paper it **repeatedly** states that this data is from a **very small sample** and **should not be used** at this time, until more long term data can be collected. He then makes a quatuam leap to a site index of 150 (without showing where this comes from) and states this site would have a growth productivity of 210 cf/ac/yr. This type of growth can only be obtained on the **very best (Site I ground)** ponderosa pine sites. These sites for pine are, **generally speaking**, in eastern Oregon. On high site ground in western Oregon, Douglas-fir will easily out grow and outproduce ponderosa pine. The primary example of this is coastal ground where ponderosa pine would be very difficult to find, if it could be found at all.

Mr. Just points out that I challenge the capability of the Panther soil to support hybrid poplar. I stated that hybrid poplar will not grow in the Panther soil on **this site, not that it would not grow in the Panther soil.** Hybrid poplars attain the best growth on deep, fertile, alluvial soils that have adequate moisture (see Exhibit 7). This site has very shallow soils (or none at all on the exposed rock), a south to southwest aspect (hot and dry summers, harsh tree growing conditions) and does not have adequate water.

Hybrid poplar plantations are established in the same manner as an agricultural crop. In fact the state of Oregon considers it an agricultural crop through the age of 12 years, because it was originally intended that the trees would be harvested between 8 to 10 years old. To establish a poplar plantation, all old stumps must be removed, the soil tilled by plowing or ripping, competing vegetation must be controlled and drainage must be improved by using either surface ditches or subsurface tile (see Exhibit 7). These are agricultural practices which are done using machinery; **plowing and improving drainage are not forestry practices.** The use of such machinery means the slope of the land should not be steep, preferably under a 5% slope. The Ogle parcel is considerably steeper than 5%, in places it exceeds 35%. This is far to steep for agricultural machinery to operate on. For hybrid poplar stands to approach the productivity figures cited by Mr. Just the landowner must carry out intensive weed control, fertilize, thin, prune and protect the stand from animals, insects and diseases (see Exhibit 7). Especially important is weed control. If not controlled the hybrids will grow slowly and may not survive (see Exhibit 7). The majority this of these activities are done with machinery. The poplar stands cited by Mr. Just, with the accompanying growth figures, are only capable of these growth figures because all of the above activities have been carried out.

Mr. Just cites plantations growing west of the Cascades in areas of "ample rainfall". These are plantations, on flat ground, on the western slopes of the Cascades, where rainfall is higher than the rainfall in the Willamette Valley. Rainfall in Oregon is highest on the western slopes of the coast range and second highest on the western slopes of the Cascades. The east slopes of the coast range and Cascades are in a rain shadow and are considerably drier. This is why vineyards do so well on the east slopes of the coast range. Rainfall amounts incease as you go from the coast range rain shadow to the west slopes or the Cascades. Mr. Just then states that the Panther soils are found in areas of ample rainfall and that the soil units characteristics match those of soils supporting hybrid poplar. This could be stated for dozens of soils; I am truly confused as to what this is supposed to prove. If site conditions are conducive to the growth of hybrid poplar, the tree will grow. On the Ogle parcel the on site conditions, i.e. slope, aspect, actual soil conditions, etc., will not support the growth of hybrid poplar regardless of soil type.

Page 6: Mr. Just states that a tree species is "merchantable timber" if it can possibly be marketable in the foreseeable future. This is the definition for determining whether or not a tree species can be used for reforestation; **not the determining factor** for a merchantable timber species under the marginal land definition. OAR 629-610-0050(1)(c) is not applicable to land use law. Michael Farthing will discuss this point in more detail.

Mr. Just operates a tree farm; he states that ODF assisted with reforestation planning and he received cost-share assistance and tax credits for the reforestation. Was that for the KMX trees planted or the other species planted and other reforestation activities (if any) carried out? Mr. Just does not say. In his opinion, as a landowner, **not** a professional forester or log buyer, he states that the trees growing are straight and well formed. From pictures in his own exhibits I see twisted, S shaped trees with knots left from pruned limbs that are almost as large as the bole of the tree. Mr. Just further states that his neighbor, Mr. Monroe, has reforested with KMX and his trees are now large, straight and well-formed.

In my discussions with foresters from Roseburg Lumber, Seneca and Lone Rock Timber, three companies which have planted this tree, I have gotten the opposite. They have all stated that the trees are like bushes, are incredibly limby and of very poor form. This is what I personally have observed with KMX trees. In addition, many of the trees growing are now dying from foliar diseases. In short, none of these companies will plant KMX again. Furthermore, the state foresters I have talked to, including those in Linn County, discourage planting KMX; as a professional consulting forester managing private owners small woodlands, I would **not** recommend planting KMX.

Mr. Just further states that in **limited** testing, **of the caracteristics of KMX (not actual KMX saw logs),** it produces high quality pulp and is suitable for studs and dimension lumber. Talking with mills and log buyers throughout the state of Oregon shows otherwise. The pulp is so high in resin content that it gums up the machinery in the mills; they will not use it for pulp. **No mill** will purchase **KMX logs** with a purchase order. No **mills** will purchase ponderosa pine or KMX pulp logs. There are two chip/pulp plants in the area that will **occasionally** purchase ponderosa pine pulp logs; they **will not** purchase KMX for pulp.

The final argument for merchantibility of KMX concerns the use of KMX for firewood. To begin with it is hard to conceive of someone planting KMX to grow for firewood. The next point is whether or not it makes good firewood, not just will it burn. Anything will burn, given enough fuel. Ponderosa pine is horrible as firewood. It is extremely pitchy and resinous; both of these substances create creosote in chimneys, whether burned in an open fireplace or a wood stove. Creosote creates an extreme fire hazard. Furthermore, unless ponderosa pine is extremely dry, it is hard to light and burns poorly, which creates huge amounts of smoke. In today's world this is extremely undesirable and under certain conditions in Lane County (when it is put out on the news to not burn wood due to atmospheric conditions) it is illegal. KMX has even more resin than ponderosa pine which would mean it produces even more smoke than ponderosa pine produces. Although it may happen, I have never seen anyone selling KMX as firewood from the back of their pickup.

Page 7: Mr. Just states that Monterey pine in New Zealand and Australia produce merchantable timber. This is true. He then makes a quantum leap and states that there is no reason to believe KMX will not produce merchantable timber. This is simply not true. The characteristics of the wood in KMX are different from Monterey pine just like Monterey pine is different from ponderosa pine. Because one species of pine is merchantable **does not** mean another pine species is merchantable.

Mr. Just states that I do not explain my use of a 50-year rotation cycle for my calculations. I will **repeat again;** I have used 50 years because Lane County has determined that this is the cycle which will be used. I originally used a 60-year cycle; Mr. Just assailed this as incorrect and stated I should be using a 50-year cycle as required by Lane County. Mr. Just further states that the rotation age should be changed because the 50-year growth cycle does not "constitute reasonable management practices". This is the **exact same statement** he originally made concerning the 60-year cycle I used.

Page 8: Mr. Just statements concerning the length of an appropriate growth cycle (for calculation of income) cites a graph (see Mr. Just's Exhibit 3-13, my Exhibit 8) showing the culmination of mean annual increment, the point in time that the periodic annual increment intersects the mean annual increment. While the culmination of mean increment may be 80 years that is not when a company or landowner would log in order to maximize income. Culmination of mean annual increment is the point in time that the stand is mature, not necessarily when it should be harvested (see Exhibit 8). It can be seen that the periodic annual increment peaks between 40-50 years; this is the point in time a company would log, as well as a landowner wishing to maximize their income. Up to this point in time the growth is increasing, after this point in time the growth rate is slowing down. From a companies standpoint this is the point in time where the cost of holding on to the timber is increasing because the growth is decreasing. Therefore from a profit standpoint, a company and a private landowner would harvest at this time (see Exhibit 8). As most private individual tree farmers are interested in income (or cash flow), as well as growing trees, a reasonable management practice would be to harvest between 40 and 50 years. While some owners would not harvest at this point in time, it would be for other reasons than maximizing their income.

Mr. Just sites testimony from Jesse and Jo Ann Ulloa confirming that "substantial" amounts of western red cedar and ponderosa pine were logged from the subject properties; did they go onto the property with a forester who knows how to identify trees? As I have **repeatedly** stated, **incense cedar** and ponderosa pine as well as Douglas-fir were harvested from the property. As I have **repeatedly** stated **incense cedar** did grow and does currently grow on the property, but at a considerably slower growth rate than Douglas-fir and well below the 85 cf/ac/yr standard accepted by Lane County.

I stated that prices for 250-350 year old "yellow belly" ponderosa pine, primarily from central and eastern Oregon, were not the same as 50 year old Douglas-fir 2S grade. Mr. Just states that I am incorrect because his prices were from the Grants Pass Unit, for southwestern Oregon pine and ponderosa pine peelers. I am not sure what he is trying to prove with this statement. Ponderosa pine grades are the same regardless of where the tree grows, I simply stated that the majority of old growth pine comes from central and eastern Oregon. In other words the **price** may be different in the Grants Pass Unit but the **grades** are the same as anywhere else. Mr. Just states the prices presented are for southwestern Oregon pine and ponderosa pine peelers. To **clarity; pine peelers** are an Oregon pine grade. You **cannot** have a peeler grade pine log in a 50 year old ponderosa pine tree, the rotation age being discussed in this analysis.

As a follow up to the price issue Mr. Just has presented 20 years worth of ponderosa pine prices in an August 19th letter. He presents this information as proof that ponderosa pine is a merchantable tree species. At **no point** have I stated ponderosa pine is not merchantable; my statements have been made in regards to the much lower value of ponderosa pine logs than Douglas-fir logs. Mr. Just then tries to compare 2S Douglas-fir to 2S ponderosa pine; this is comparing apples to oranges. A 2S Douglas-fir log is equivalent to a 4S ponderosa pine log (see Exhibit 9).

Notes on discussions of productivity. Mr. Just repeatedly brings up the issue of **"reasonable management practices".** Generally speaking, forest management activities carried out on forestland are conducted in order **to produce an income as well as manage the forest.** A reasonable person would want these activities to be profitable, not necessarily in the short term, but definitely over time. Most of the activities espoused by Mr. Just would cost the landowner substantial amounts of money, with very little return. Most people managing forestland seek some sort of return. Growing tree species which you cannot sell on today's market would not be a prudent or reasonable management practice. Very few people are willing to plant a tree species based on the hope that it **may be** merchantable in the future. Furthermore, there are few tree farmers who are in the business to lose money. The practices Mr. Just proposes would be prohibitively expensive to carry out and in most cases cause the landowner to lose money. These practices would also take ground out of production from an income producing standpoint.

In conclusion, as a practicing professional forester, I would not consider planting ponderosa pine, KMX, or hybrid poplar a reasonable or prudent practice to carry out. The KMX tree species is not a commercially marketable species; planting it would cost a substantial amount of money, with no return in the foreseeable future. Hybrid poplar would be all but impossible to plant and maintain on this site (see explanation on page 6), it would also be prohibitively expensive even if it was possible. Furthermore, while a market for the wood may exist in isolated areas (such as near Pendleton), it would be prohibitively expensive to truck the wood there (it is a very heavy wood, chip trucks reach their maximum weight before the truck is full). Planting valley ponderosa pine at this point in time is also a huge risk; the IPS beetle (which attacks freshly cut ponderosa pine) is becoming a real problem, currently there is not a good market for pine and even when you can sell it the delivered price paid will not cover the cost of getting the logs to a mill. As a professional forester managing private owners forestland, I **would not** recommend planting any of these species. The large amounts of capital needed to grow these trees would be better spent on brush and grass control to establish Douglas-fir, the highest value conifer growing today.

Sincerely,

Marc E Settell

EXHIBIT 7

Washington State University

WSU-Puyallup

Hybrid Poplar Research Program

Establishing High Yield Plantations

In most cases, high yield plantations will be established on cleared land. In western Washington and Oregon, consider agricultural lands not currently suited for cultivated crops. Usually, such lands are in grass for hay or pasture. Quality cropland also can be used, since methods are available to eliminate the stumps and return the field to agriculture. Special considerations required to establish plantations on grasslands are discussed below. For more details please refer to "High Yield Hybrid Poplar Plantations i the Pacific Northwest."

Genetic Diversity - Use of a single clone in plantations increases risk from insects and disease. Therefore, in extensive plantings (over 40 acres), plant several clones, either in pure blocks or in mixed clone stands.

Suitable soils - Hybrid poplars attain the best growth on deep, fertile, alluvial soils that have adequate moisture. One reason for their high productivity is their ability to fully use such soils. Light textured soils, such as sandy loams abd silt loams, are generally best, b heavier textured soils can produce excellent growth if the soil is relatively loose and friabl

Where can hybrid poplar be grown? - Use caution in planting hybrids developed for the Pacific Northwest in regions of the world that have unsuitable climates and significantly different latitudes. Even in similar climates, susceptibility to local diseases can limit hybri growth.

Cold Injury - Most serious cold injury has resulted from sudden cold in fall. Low temperatures occurring later, when the trees are fully dormant, is of little concern. Spring frosts can injure newly emerging leaves and succulent stems. Such damage occurs both east and west of the Cascades in Washington, but rarely kills trees. The other type of col injury noted with older specimens of certain clones is frost cracking of the trunk.

Choosing the spacing - If trees will be harvested as biomass fuel, small sized trees as young as one year can be used. Expect resrouting for subsequent harvests (provided harvesting is done in the dormant season). Under such conditions, use close spacing - 2 4 feet of 4 x 4 feet. Spacing for longer cycle cuttings can range up to 20 x 20 feet, depending on the size of the tree desired.

Land Preparation - Proper land preparation is vital for ensuring high productivity plantations. The major objectives in land preparation include:

7-1

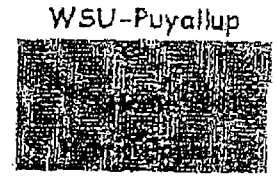
1. controlling competing vegetation
2. loosening the soil by plowing, ripping, subsoiling, and
3. improving drainage by using either surface ditches or subsurface tile.

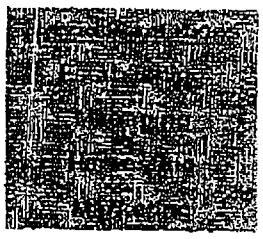
Cost share assistance - Establishment of hybrid poplar plantations may be eligible for USDA cost-sharing funds if harvest rotations exceed 10 years. Local offices of the USDA Agricultural Stabilization and Conservation Service (ASCS) or your state forestry agency. Washington State Department of Natural Resources, Oregon Department of Forestry, or Idaho Department of Lands can advise you regarding the eligibility of hybrid poplar in you area

Washington State University

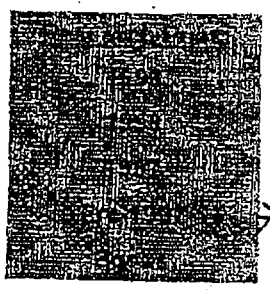
WSU-Puyallup

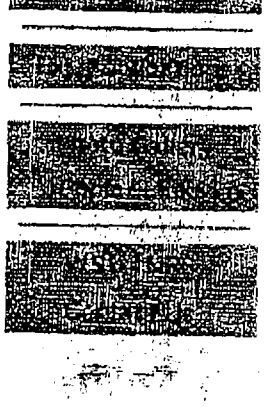
Hybrid Poplar Research Program











Managing Plantations:

Plantation management needs to address several concerns:

- 1) weed control
- 2) need for fertilizer
- 3) thinning and pruning where appropriate; and
- 4) protection against animals, insects and diseases.

The following discussion is intended to introduce you to the different aspects of managing hybrid poplar plantation. For further details please refer to "High Yield Poplar Plantations the Pacific Northwest."

Weed Control -

If the grower does not control weeds and grass adequately, hybrids will grow slowly and may not survive. Furthermore, weeds and grasses provide cover to voles, which can girdle and kill trees as old as 4 years. Growers usually control weeds in plantations by combining cultivation and herbicides, starting with a chemical spray before or soon after planting.

A number of effective weed control treatments that employ herbicides are used. The Pacific Northwest Weed Control Handbook lists the most commonly used materials and is updated annually. Refer herbicide questions to your Cooperative Extension agent.

Fertilization -

A vigorous plantation takes up as much as 200 lb of nitrogen (N) per acre per year. However, from 50 to 150 lb of N per acre per year is generally the rate applied. On fertile soils, including some old pastures, the nitrogen released from soil organic matter can be sufficient to carry the plantation for several years without need for added fertilizer. Usually fertilizer is not broadcast before planting or applied during the first year of growth.

7-2

Appearance of plants can indicate need for nitrogen. Leaves of nitrogen deficient plants are generally smaller, light green and sometimes even yellowish. When nitrogen deficien the entire leaf becomes a uniform light green or yellow. Need for other nutrients has not been demonstrated in western Washington. However, zinc fertilization can be very beneficial on calcareous soils east of the Cascades.

Thinning and Pruning -

For all but biomass harvests, practice early thinning to one stem per stump before the second growing season; extra stems can be used for cuttings. Thinning or partial harvest of trees later in the life of the plantation may be desirable to make space for larger, better formed trees for lumber or plywood. Clear, knot free wood adds value to such trees. For that reason, pruning of branches starting as early as year 1 or 2 in plantations for lumber plywood may be advisable.

Washington State University

WSU-Puyallup

Hybrid Poplar Research Program

[redacted]

Harvesting Plantations

One important advantage of intensive culture of plantations is the suitability of such plantations for mechanized harvest. Considerable effort has been made in developing ne machines and in modifying existing equipment for more efficient harvest of short rotation material. Growers should consider the harvest operation in planning the layout and spaci of biomass plantations. This section briefly discusses harvest options. For a more in dep discussion please refer to "High Yield Hybrid Poplar Plantations in the Pacific Northwest."

Small Scale Plantations -

Recommendations for establishment and culture of smaller plantations are similar to thos for commercial plantations. The major difference in operations between large and small plantations is in the harvesting scale. Felling in a small scale harvest is generally done w a chain saw.

Larger Plantations -

Although harvest in large plantations can involve highly efficient yarding equipment, chainsaws are an option for felling trees. Most harvesting presently underway in the Northwest uses conventional feller bunchers and grapple skidders.

Soil and Plant Considerations in harvest timing -

Harvesting in the dormant season is desirable under two situations. The first occurs whe resprouting is needed. Dormant season harvests give the most consistent and vigorous resprouting. The second is where year-round supply of wood is required, such as for a pl mill. Soild suited for these plantations may not support harvesting equipment during wet periods without sustaining compaction. Considerable effort is required to restore puddlec and compacted soil to former productivity.

7-3

EXHIBIT 8

POI = OF HARVEST

Step 6. Calculate periodic annual increment (PAI)

The average annual volume growth of a timber stand measured over a specific period is its periodic annual increment (PAI). This figure is useful because volume growth per acre can vary substantially as the stand ages. The PAI of either board-foot or cubic-foot volumes can be calculated for any period, but 5- or 10-year periods are most common. Calculate PAI:

Periodic annual increment = (Total volume/acre at end of period – Total volume/acre at beginning of period) ÷ Number of years in the period

PAI can measure previous growth or project future growth. Core samples enable you to take measurements back from the present, and your calculated growth projection factor enables you to estimate a future periodic annual increment. This enables you to determine how your stand is growing by taking a "snapshot" in time.

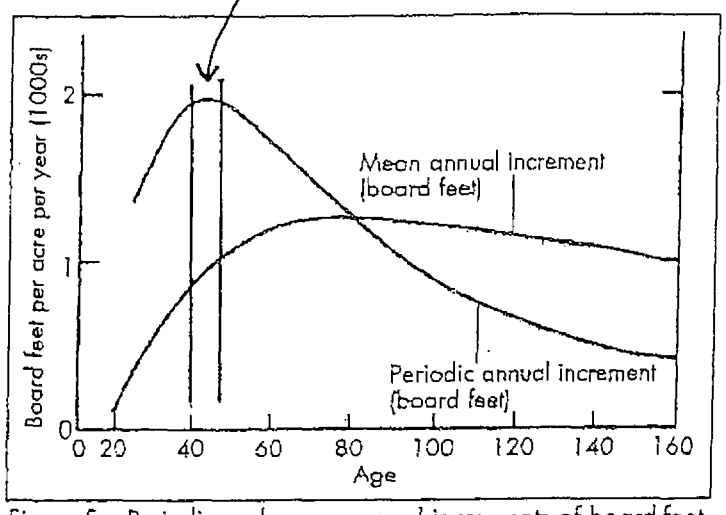


Figure 5.—Periodic and mean annual increments of board-foot volume for Douglas-fir, showing culmination of mean annual increment at about 80 years. Absolute age of culmination varies, but the pattern in this graph is similar for all species. Adapted from McArdle et al., *The Yield of Douglas Fir in the Pacific Northwest*, USDA Technical Bulletin 201, 1961.

Hypothetical ideal harvest time

Foresters have a long tradition of analyzing timber stand growth. Figure 5 shows the growth pattern for Douglas-fir, but the pattern for even-age stands tends to be similar for all tree species.

From analyses and long experience, foresters have derived the general rule that when PAI falls below MAI, the timber stand is "mature"—that is, it has passed its peak of wood growth production in the biological sense. Thus, the stand might be harvested if growth rate is the overriding factor in the harvest decision.

The point where the PAI line crosses the MAI line also is the highest value for MAI. This point, therefore, is referred to as *culmination* of MAI. The stand will continue to add volume after this point but at a slower rate than before. Thus, by comparing estimates of PAI and MAI, we can test whether our stands are biologically mature. Thinning stands can boost the growth of residual trees and delay the culmination of MAI.

Often, factors such as cash flow or market cycles dictate a timber harvest before or after culmination of MAI. By combining this biological information with financial analysis, you can tailor your management decisions to your own situation and objectives.

Where to go from here

Good stand information is essential to making the decisions necessary for managing your woodland property. Stand measurements are critical to logging and marketing options. They are also important as indicators of a stand's health and vigor and its susceptibility to insect and disease problems. And, measurements might be important in deciding whether a harvest operation will generate the desired cash flow.

Measurements taken according to the procedures described here are suitable for understanding how a timber stand may develop over time; however, they're no substitute for professional timber appraisals or inventories done by foresters.

If you want to refine these techniques or to study timber growth further, contact your Extension forestry agent for possible opportunities.

GOAL ONE
EXHIBIT NUMBER

Ex 3-13

EXHIBIT 9

PONDEROSA AND SUGAR PINE LOGS

(Pinus ponderosa and Pinus lambertiana)

Peeler Ponderosa & Sugar Pine

Logs shall be old growth and suitable for the rotary cutting of clear, uniform-colored face stock veneer to an amount of not less than 50% of the NET scale. Such logs shall meet at least the following minimum exterior characteristics:

Gross Diameter – 30 inches.
Gross Length – 17 feet.
Surface – 100% clear.
Annual Ring Count – 8 per inch.
Slope of Grain – Not to exceed:
1½" per foot on logs 30" thru 50" diameter.
2½" per foot on logs 51" and over.

Peeler Blocks Ponderosa & Sugar Pine

Logs of Peeler Quality under 17" in length shall be graded as Peeler Blocks with the volume extended on the log scale basis. Peeler Blocks shall meet all the other minimum specifications required of Peeler grade logs.

No. 1 Sawmill Ponderosa & Sugar Pine

Logs shall be old growth and suitable for the manufacture of D select and Better lumber to an amount of not less than 50% of the NET scale. Such logs shall meet at least the following minimum exterior characteristics:

Gross Diameter – 30 inches.
Gross Length – 16 feet.
Surface – 90% clear.
Annual Ring Count – 8 per inch.
Slope of Grain – Not to exceed:
1½" per foot on logs 30" thru 50" diameter.
2½" per foot on logs 51" and over.

No. 2 Sawmill Ponderosa & Sugar Pine

Logs shall be old growth and suitable for the manufacture of D select and Better lumber to an amount of not less than 35% of the NET scale. Such logs shall meet at least the following minimum exterior characteristics:

Gross Diameter – 24 inches. LARGE, OLD TREE
Gross Length – 12 feet.
Surface – 75% clear.
Annual Ring Count – 8 per inch.
Slope of Grain – Not to exceed 3" per foot.

No. 3 Sawmill (Shop Grade) Ponderosa & Sugar Pine

Logs shall be old growth and suitable for the manufacture of No. 2 Shop and Better lumber to an amount of not less than 50% of the NET scale. Such logs shall meet at least the following minimum exterior characteristics:

Gross Diameter – 24 inches.
Gross Length – 12 feet.
Surface – 50% clear (collectively), with knots spaced to allow 6'-long clear cuttings.
Annual Ring Count – 8 per inch.
Slope of Grain – Not excessive.

No. 4 Sawmill Ponderosa & Sugar Pine

Logs shall be suitable for the manufacture of No. 2 Common (Sterling) and Better lumber to an amount of not less than 50% of the NET scale. Such logs shall meet at least the following minimum exterior characteristics:

Gross Diameter – 12 inches.
Gross Length – 12 feet.
Surface – Sound, tight knots, not to exceed 2½" diameter. Any larger knots shall be spaced same as No. 3 Sawmill (Shop) logs.

No. 5 Sawmill Ponderosa & Sugar Pine

Logs shall be suitable for the manufacture of No. 3 Common (Standard) and Better grades of lumber to an amount of not less than 33⅓% of the GROSS scale. Such logs shall meet at least the following minimum exterior characteristics:

Gross Diameter – 6 inches.
Gross Length – 12 feet.

No. 6 Sawmill Ponderosa & Sugar Pine

Logs shall be suitable for the manufacture of No. 3 Common (Standard) and Better grades of lumber to an amount of not less than 33⅓% of the GROSS scale. Such logs shall meet at least the following minimum exterior characteristics:

Gross Diameter – 5 inches.
Gross Length – 12 feet.
Minimum Volume – 10 board feet NET scale.

9-1

DOUGLAS FIR PEELER LOGS

(Psuedotsuga menziesii)

No. 1 Peeler Douglas Fir

Logs shall be suitable for rotary cutting of clear, uniform-colored face stock veneer to an amount of not less than 50% of the NET scale. Such logs shall meet at least the following minimum exterior characteristics:

Gross Diameter – 30 inches.

Gross Length – 17 feet.

Surface – 90% clear. May include logs with not more than two (2) knots.

Annual Ring Count – 8 per inch.

Slope of Grain – Not to exceed 3" per foot.

Heart off-Center – Allowable to the extent that required recovery can be met.

No. 2 Peeler Douglas Fir.

Logs shall be suitable for rotary cutting of clear, uniform-colored face stock veneer to an amount of not less than 35% of the NET scale. Such logs shall meet at least the following minimum exterior characteristics:

Gross Diameter – 30 inches.

Gross Length – 17 feet.

Surface – 75% clear. May include logs with not more than two (2) knots.

Annual Ring Count – 8 per inch.

Slope of Grain – Not to exceed 3" per foot.

Heart off-Center – Allowable to the extent that required recovery can be met.

No. 3 Peeler Douglas Fir.

Logs shall be suitable for rotary cutting of veneer center core, cross core, backs and better to an amount equal to 100% of the NET scale. Such logs shall meet at least the following minimum exterior characteristics:

Gross Diameter – 24 inches.

Gross Length – 17 feet.

Surface – Limited to knot indicators, not more than 1½" in diameter. The maximum number of knot indicators should not exceed an average of one per foot of log length. Knot indicators ½ inch and under in diameter shall not be considered a determining factor. This grading may include a log with not more than two knots.

Annual Ring Count – 6 per inch.

9-2

Slope of Grain – Not to exceed 3" per foot.

Heart off-Center – Allowable to the extent that required recovery can be met.

DOUGLAS FIR PEELER BLOCKS

Logs of Peeler quality under 17' but not less than 4' in length shall be graded as Peeler Blocks with the volume extended on log scale basis. No 1, No. 2, and No. 3 Peeler Blocks must meet the same grade requirements as the similar grade of Peeler logs as to minimum diameter, annual ring count, slope of grain, and grade recovery requirements.

DOUGLAS FIR SAWMILL LOGS

No. 1 Sawmill Douglas Fir

Logs shall be suitable for the manufacture of B and Better lumber to an amount of not less than 50% of the NET scale. Such logs shall meet at least the following minimum exterior characteristics:

Gross Diameter – 30 inches.

Gross Length – 16 feet.

Surface – 90% clear.

Annual Ring Count – 8 per inch.

Slope of Grain – Not to exceed 3" per foot.

No. 2 Sawmill Douglas Fir

Logs shall be suitable for the manufacture of (1) Construction and Better grades of lumber to an amount of not less than 65% of NET scale, or (2) B and Better or equivalent grades of lumber to an amount of not less than 25% of the NET scale. Such logs shall meet at least the following minimum exterior characteristics:

Gross Diameter – 12 inches.

Gross Length – 12 feet.

Minimum Volume – 60 board feet NET scale.

Surface – Sound, tight knots, not to exceed 2½" in diameter. Any larger knots, knot clusters, and burls shall be so distributed as to permit the required recovery.

Slope of Grain – Not to exceed:
2" per foot on logs 12" thru 20"
3" per foot on logs 21" thru 35"
4" per foot on logs 36" thru 50"
5" per foot on logs 51" and over.

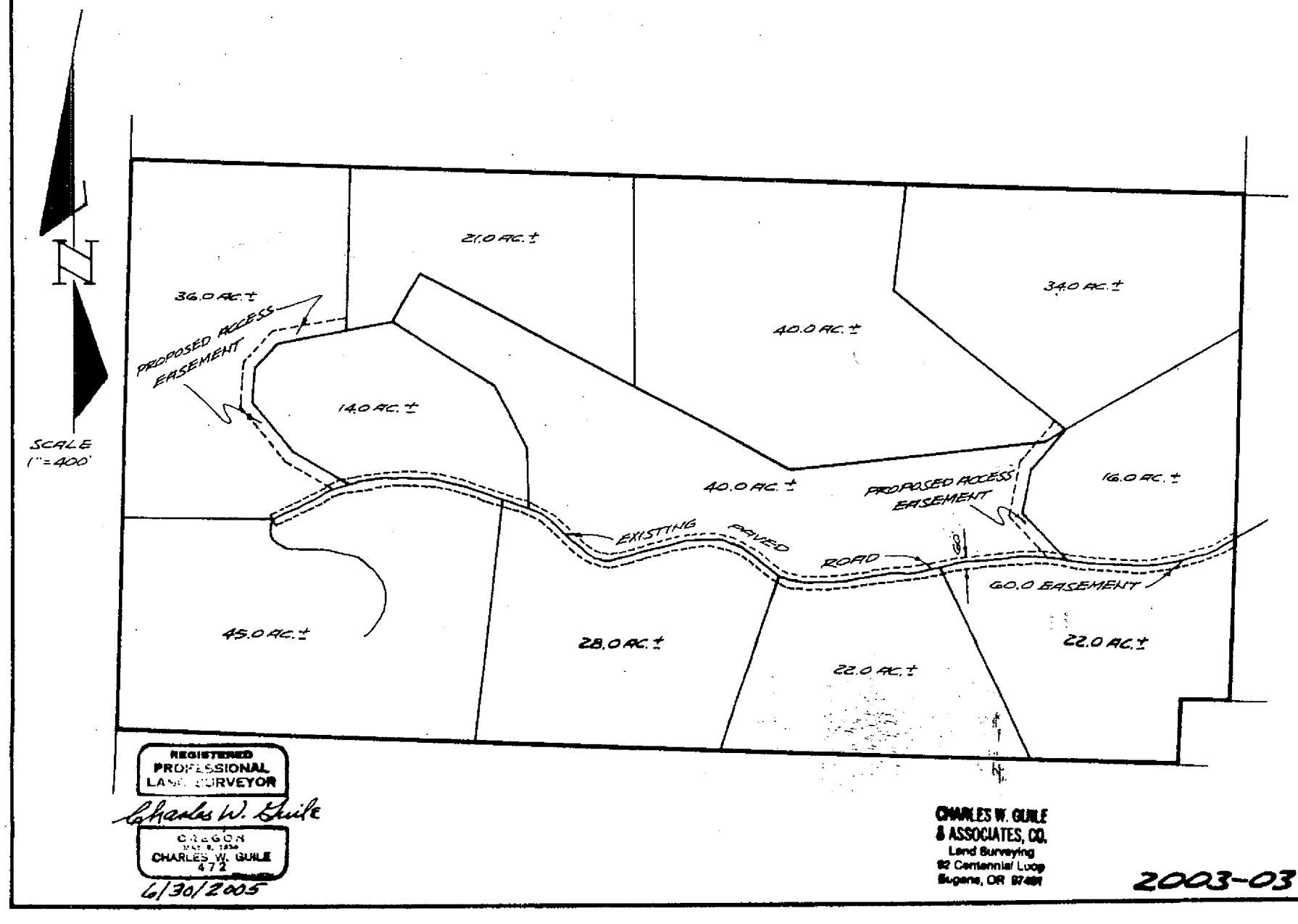
No. 3 Sawmill Douglas Fir

Logs shall be suitable for the manufacture of Standard and Better grades of lumber to an amount of not less than 33⅓% of the GROSS scale. Such logs shall

EXHIBIT "L"

PROPOSED PARCELING MAP FOR KAREN DAHLEN

TAX LOT 300 MAP NO. 18-04-24
LANE COUNTY, OREGON
AUGUST 19, 2004



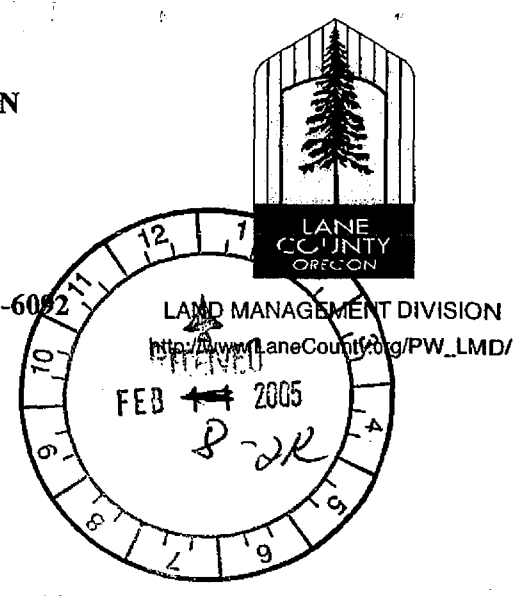
REGISTERED PROFESSIONAL LAND SURVEYOR
Charles W. Guile
OREGON
JULY 9, 1994
CHARLES W. GUILE
472
6/30/2005

CHARLES W. GUILE & ASSOCIATES, CO.
Land Surveying
92 Centennial Loop
Eugene, OR 97401

2003-03B

LANE COUNTY PLANNING COMMISSION

Staff Report



Hearing Date: February 15, 2005

File PA 04-6052

Report Date: February 8, 2005

I. PROPOSAL

A. Owners/Applicant:

Karen A. Dahlen Trust
85800 S. Willamette St.
Eugene, Or. 97405

Agent:

Steve Cornacchia
180 E. 11th Ave.
Eugene, Or. 97401

B. Proposal

1.) Plan Amendment to redesignate 322[1] acres of land from "Agricultural Land" to "Marginal Land," and rezone from E-40/Exclusive Farm Use to ML/Marginal Land, pursuant to Lane Code 16.400 and 16.252.

2.) Provide notice of legal lot determination PA 04-5860[2], which formed the subject parcel after a lot line adjustment.

If approved, the rezoning would allow the applicant to apply for a subdivision, with a maximum buildout potential of 32-ten acre lots[3]. Land division approval is **not** part of the proposal before the Planning Commission.

II. RECOMMENDATION

Although the submittal appears to warrant a recommendation of approval, staff withholds his opinion until he is able to review and comment on a submittal received on February 8[4], in

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[1] The applicant has stated that the size of the subject parcel is 322 acres. However, legal lot determination PA 04-5860 states the acreage to be 316.55 acres. The applicant is requested to comment on this discrepancy at the hearing. It is noted that the provided soils data, applicant's exhibit "G", is for a 322-acre parcel.

[2] PA 04-5860 has been entered into the record in its entirety by staff.

[3] The applicant states that the intention is to subdivide into a maximum of 11 parcels, of acreage ranging from 14-45 acres per lot. Refer to applicant's schematic exhibit "L", and p.4-5 of the text submittal. The applicant proposes to warrant such limitation by a deed restriction. This device is not acceptable, as the county is not party to a deed restriction; and such restriction can be changed in the future. In addition, no draft instrument of any type has been provided. It is also noted that the aquifer study, exhibit E, and the traffic impact analysis, exhibit C, demonstrate compliance at the maximum (32 lot) buildout. Thus, without adequate warranty in the file record, staff must assume a maximum buildout potential.

[4] See attachment #7 to this report.

Bcc #5 - 84 pp.

opposition to the request. Staff is expected to have a recommendation for the Commission in time for the hearing.

III. SITE AND PLANNING PROFILE

A. Location

Map 18-04-24, tax lot 300

B. Zoning

E-40/Exclusive Farm Use. Plot 334

C. Subject Property & Surrounding Area

The property, which is subject to this Plan Amendment/Rezone application, is reported to consist of 322 acres of land located on the west side of S. Willamette St., just north of the entrance to Spencer Butte Park. The parcel was created via a lot line adjustment with a parcel adjacent to the east (Map 18-03-19, tax lot 1300), also owned by the applicant. Please refer to attachment #1 (the second page labeled "After") for a map of the subject parcel and nearby vicinity. See the original submittal (previously mailed to the Planning Commissioners) for further background information.

Note: "Exhibits" refer to those materials supplied by the applicant and attached to the original submittal. "Attachments" are those materials later added by staff. This includes attachment #6, consisting of supplemental information provided by the applicant. In addition, attachment #7 is a submittal from Mr. Jim Just of the Goal One Coalition. Although Mr. Just was kind enough to provide draft comments on February 1, the attachments were not included. The final draft (attachment #7), with its attachments, arrived late on the same day this report was being written, too late for a thorough reading by staff. Staff will have some comment on the Goal One submittal in time for the hearing, and the applicant is expected to as well.

D. Services

Fire:	Eugene RFPD #1
Police:	County, State
Sewer and Water:	Proposed On-site
School District:	Eugene 4-J
Power:	Lane Electric Coop
Access:	Private road to S. Willamette St.[5]

E. Referral Comments Received

Transportation Planning/Bill Morgan/12-22-04:
See exhibit #2 for this referral response. The county engineer concluded that the provided traffic analysis (exhibit C) was adequate and meets the requirements of LC 15.

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[5] Since the applicant also owns the parcel to the east (Map 18-03-19 #1300), which fronts S. Willamette St., no difficulty in construction of an easement is anticipated. Such easement will need to meet the easement requirements of LC 15. The easement can be reviewed during the subdivision phase.

State Watermaster/Mike Mattick/2-7-05:
See attachment #3. While taking issue with some of the contents of the aquifer study (exhibit E), Mr. Mattick concludes, "...that there is adequate water in [sic] area to support a dwelling per 10 acre lot."

Department of Assessment & Taxation/Dave Evans/2-7-05:
See attachment #4. Mr. Evans states that the subject parcel has 316 of its acres in forest tax deferral. This information was obtained at the request of Commissioner Arkin. Staff notes that such tax deferral does not indicate whether or not the parcel could gross $10,000 annual in timber or is capable of producing at least 85 cu.ft. of merchantable timber /ac annual, as required by ORS 197.247(1)(a) or (b)(A), respectively.

****** No other responses were received as of the writing of this report*****

IV. CRITERIA AND ANALYSES

A. Marginal Land proposals are primarily governed by the 1991 version of ORS 197.247. In addition, in March 1997, the Lane County Board of Commissioners gave direction to staff on how to interpret and administer ML applications. That five page document is provided as attachment #5.

The agent has recited and addressed the applicable standards, including ORS 197.247, the March 1997 Board document, goals, and Lane Code requirements. Refer to the applicant's submittal, as well as attachment #6, the supplemental materials.

Essentially, qualification for a ML designation is a two-fold test. Any proposal for a ML designation must first comply with the "income test" requirement found in ORS 197.247(1)(a), recited below. It basically requires the applicant to document that the proposed ML land is less than "commercial-grade" stature for farm or forest use during a 5-year period preceding 1983. This examination must include any lands, which might have been a part of such farm or forest operation at that time.

The second part of the test contains three options, two of which are "parcelization" tests, which have not been selected by the applicant (these are described in the attached ORS 197.247(1)(b)(A) and (B)). Instead, the applicant has chosen the option under ORS 197.247(1)(b)(C), recited below. Commonly known as the "productivity test", the applicant is required to demonstrate that the farm soil capability is predominantly class V-VIII (on a I-VIII scale), and that per acre, the proposed land cannot produce, on average, more than 85 cubic feet of merchantable timber annually.

1. Income Tests

ORS 197.247(1)(a) reads as follows:

The proposed marginal land was not managed, during three of the five calendar years preceding January 1, 1983, as part of a farm operation that produced $20,000 or more in annual gross income or a forest operation capable of producing an average, over the growth cycle, of $10,000 in annual gross income.

Farm income standard is met.
Per the direction given in the March 1997 Board document, the applicant has provided an affidavit (exhibit "F") from a party who owned the property during the five years preceding 1983, attesting that the proposed marginal land (i.e., the subject property), was not part of a farm operation that produced $20,000 or more annual gross farm income. Staff accepts this "farm income" portion of the statue test, as it meets the Board directive.

Forest income standard.
The forest income test requires that during the same time period, the proposed marginal land was not managed, by itself or in conjunction with other land, as a forest operation, which could generate over $10,000, gross annual income from timber revenue.

It is noted that information on the subject parcel was previously provided to this office in conjunction with the subdivision, file PA 03-5657, of the applicant's contiguous parcel to the east, Map 18-03-19, tax lot 1300. LC 16.214(6) allows a ML zoned parcel to be subdivided into 10 acre minimum lots if such lots are not adjacent to resource zoned land (F-1, F-2, & EFU), or, if adjacent to such lands, they (the resource lands) "qualify" as marginal land pursuant to ORS 197.247. Note that such "qualification" does not mean that those lands were actually changed to ML, but rather that enough evidence was provided for the subdivision file record so that staff could conclude that the land "qualified" as ML. Such was the case for the current subject tax lot. It was found to be capable of only $7,193 annual gross income, below the $10,000 standard. Refer also to pages 14-15 of the applicant's submittal, and the exhibits mentioned therein.

2. Productivity Test

The applicable portion of ORS 197.247(1)(b)(C) reads as follows:

> **(b)(C) The proposed Marginal Land is composed predominantly of soils in capability classes V through VIII in the Agricultural Capability Classification system used by the U.S. Department of Agriculture Soil Conservation Service, and is not capable of producing 85 cubic feet of merchantable timber per acre per year.**

Per page 15 of the submittal, 58.79% of the parcel consists of soils in agricultural capability class V-VIII.

Regarding the 85 cubic foot standard for "merchantable timber, refer to pages 16-17 of the submittal, and its attendant exhibits. Using various productivity tables, the applicant concludes that the overall productivity is still below the 85 cu.ft./ac./annual standard.

B. In addition to ORS 197.247, any plan amendment must address state and local laws, including state goals.

Regarding Goal 6, water quality, it is noted that the subject property is within a water quality/quantity limited area (Spencer Creek watershed) per LM. 13.010. This is discussed on page 8 of the submittal. As required by LC 16.004(4) and LC 13.050(13), the applicant has provided an aquifer study performed by EGR & Associates. The study

(included herein) concludes domestic water availability for up to the maximum buildout of 32 lots. As previously stated in the "referral responses" above, the State Watermaster's office has reviewed the aquifer test, and agrees with its conclusion.

The remainder of the submittal and exhibits address compliance with the code aspects such as: fulfilling the purpose of the ML zone as found in LC 16.214(1); the Plan Amendment requirements of LC 16.400; and the rezone requirements of LC 16.252.

IV. CONCLUSION

A. Summary Comments

The submittal appears to qualify the subject property for a recommendation for approval to a ML designation. However, a 33-page document in objection to the request was received on the same day this report was issued, too late to analyze. Staff, as well as the applicant, is expected to comment on that submittal at the hearing. Until then, no recommendation is made.

B. Attachments to this Staff Report

1. "Before" & "After" maps of lot line adjustment (from PA 04-5860--2p.
2. Transportation planning response of 12-22-04—1p.
3. State Watermaster's response of 2-7-05—2pp.
4. Tax Assessor's response of 2-7-05 on deferral status—2pp.
5. March 1997 "guideline" for ML applications—5pp.
6. Applicant's supplement of 2-3-05—34pp.
7. Goal One Coalition objections of 2-8-05—33pp.

BEFORE

Section 24 T.18S. R.4 W.W.M.
LANE COUNTY
1"=400'

Section 19 T.18 S. R.3 W.W.M.
LANE COUNTY
1"=400'

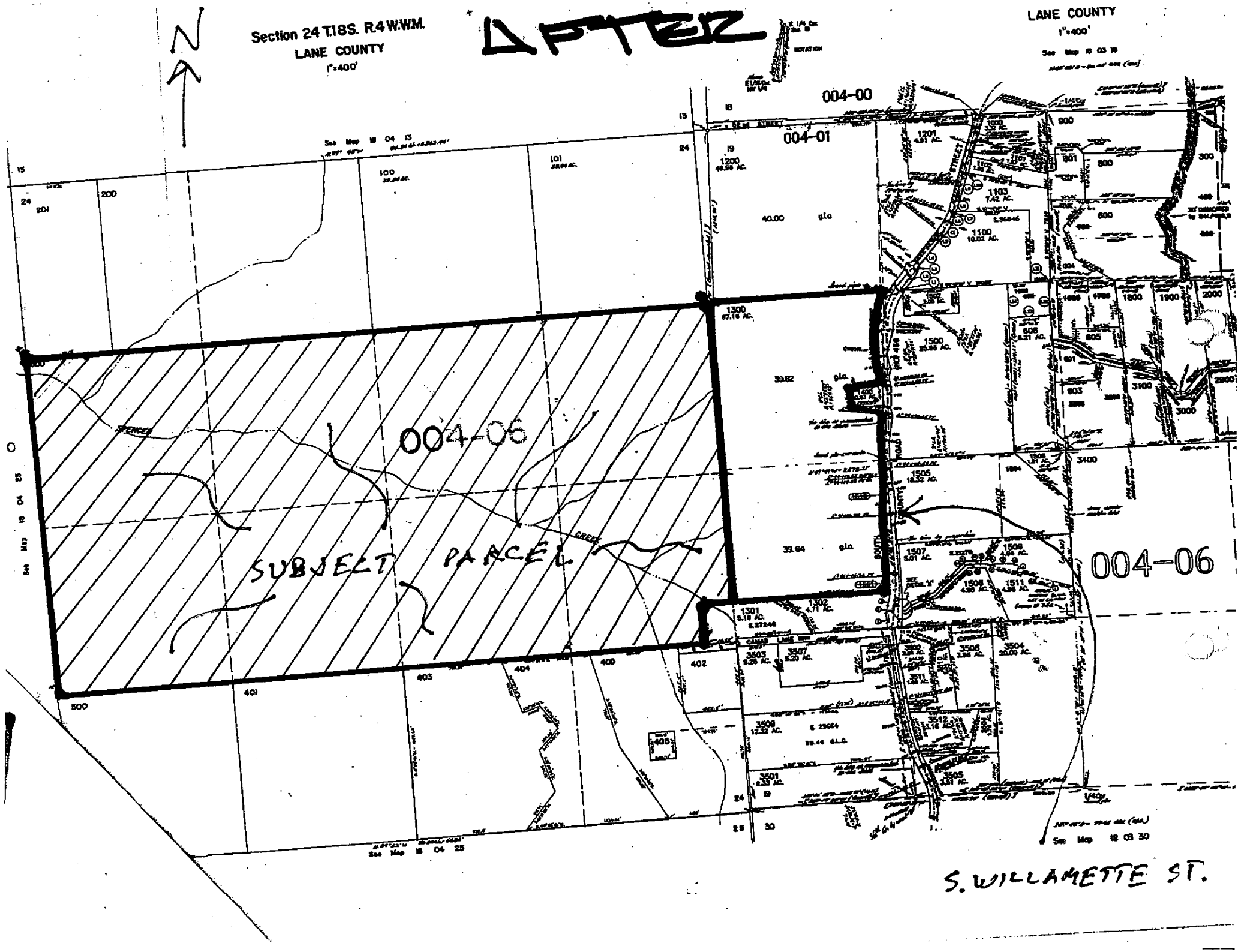
004-00

004-01

004-06

004-06

ATTACH. # 1 - 2 pp.


AFTER
N
Section 24 T.18S. R.4 W.W.M.
LANE COUNTY
1"=400'
LANE COUNTY
1"=400'
004-00
004-01
004-06
SUBJECT PARCEL
SPENCER CREEK
S. WILLAMETTE ST.

4168

Received on 2-8-05 18-04-24 (Supplemental)

December 22, 2004

Mr. Steve Cornachia, Attorney
Herschner Hunter LLP
180 E. 11th Ave.
Eugene, OR 97401

RE: Dahlen, PA 04-6092

Dear Mr. Cornacchia:

I have reviewed the transportation-related information for the Dahlen plan amendment/zone change application to re-designate land from Agriculture to Marginal Lands (plan designation) and from E-40 to ML (zoning). I found the proposed findings to be complete from a transportation planning perspective as follows:

The application correctly identified the state land use requirements - i.e., state land use goal 12, Transportation, and the applicable requirements, namely OAR 660-012-0060 ("TPR").

The findings include an analysis provided by an Oregon certified engineer with expertise in traffic engineering and are certify-stamped. The findings address the requirements in the Lane County TSP regarding level of service and v/c ratios, for a 20 year planning horizon. They conclude that the traffic impacts are within the limits allowed by the state TPR and the County's TSP.

Therefore it is my opinion that the required transportation-related requirements for the plan amendment/zone change application have been adequately addressed in the traffic impact analysis.

The existing driveway that will serve the proposed development was permitted for a residence in 1997 by the County's Right-of-Way Management Facility Permit section, under permit number 970400. According to the permit records, the driveway work was found to be complete and in compliance with Lane County's requirements and specifications. Please note that the driveway will be reviewed for serving additional lots with regard to applicable road standards when a subdivision application is submitted. Standards found in LC 15.055 and 15.706 apply to new private easements in land divisions.

Please contact me if I can provide any additional information at this time.

Sincerely,

Bill Morgan

Bill Morgan, PE
Senior Transportation Engineer
541.682.6932
bill.morgan@co.lane.or.us

ATTCH. #2 -1A.

KENDALL Jerry

From: MATTICK Mike (OR)
Sent: Monday, February 07, 2005 3:30 PM
To: KENDALL Jerry
Subject: Fwd: Dahlen Aquifer Analysis Report

Hi Jerry,

I took the report to Salem a couple of weeks ago. A staff Hydrogeologist, Marc Norton, reviewed it. His email comments are below.
Before that, you once asked me if the report met the requirements of the code. From a picky standpoint, I don't think it does because the ordinance says the aquifer test **must** include a **storage coefficient**; the report says one could not be calculated because the observation well was not affected by the test. So, maybe they should have drilled a well that would be affected by the test well. That could get very expensive. What if the next well proved to not be affected also? How many would they need to drill?

So, disregarding that, I'd stand by my earlier review, concurring that there is adequate water in area to support a dwelling per 10 acre lot.
Marc also concludes that:with the proposed lot size, there should be little or no interference unless wells are drilled close to each other across property lines.

X-Sender: nortonma@mailhub.wrd.state.or.us
X-Mailer: QUALCOMM Windows Eudora Version 5.1.1
Date: Tue, 01 Feb 2005 16:25:20 -0800
To: Michael Mattick <Michael.J.MATTICK@wrd.state.or.us>
From: Marc Norton <Marc.A.NORTON@wrd.state.or.us>
Subject: Dahlen Aquifer Analysis Report
X-Spam-Checker-Version: SpamAssassin 2.63 (2004-01-11) on
kettle.wrd.state.or.us
X-Spam-Status: No, hits=0.0 required=5.0 tests=none autolearn=ham version=2.63
X-Spam-Level:

Mike,

I read through the report and looked at some of the information in the back. The one thing I would point out, is that I could not find and information on the "observation well" in the report. In the early report on the test. Ralph indicates that the observation well is in a different aquifer and that is why there was no impact during the test.

In the recent letter report, that information is left out which leads the reader to believe that the impacts did not reach the observation well. The reality is that the test does not show that. We do not know how far out the cone of depression extended.

I also noticed that the well did not recover in the same amount of time the well was pumped. This is not a good sign. The well had only recovered about half of the drawdown after being allow to recover for 11 hours, 2 hours longer than the pumping period. Ideally,

ATTCH. #3 -2pp.

the well should have fully recovered in this amount of time.

Large storage tanks for each well with low yields will help to minimize over pumping. Otherwise, with the proposed lot size, there should be little or no interference unless wells are drilled close to each other across property lines.

Hope this helps.

Marc

Lastly, I'd like to do Pisqua once a week kind of regulatly,
MM

+==========+
| Michael J. Mattick email to: Michael.J.Mattick@wrd.state.or.us |
| Watermaster District 2 |
| Voice: (541)-682-3620 FAX: (541)-746-1861 |
| Oregon Water Resources Department Web page: http://oregon.gov/OWRD/ |
| |
| Office located at: |
| Central Lane Justice Court |
| 220 N 5th St. |
| Springfield, Oregon 97477 |
+==========+

02/07/2005

KENDALL Jerry

From: KENDALL Jerry
Sent: Monday, February 07, 2005 5:06 PM
To: EVANS Dave W
Subject: RE: tax deferral status

Thanks Dave. That will do it. I appreciate your time. Will let you know if I need more in the future (I need to digest this all).

-----Original Message-----
From: EVANS Dave W
Sent: Monday, February 07, 2005 4:36 PM
To: KENDALL Jerry
Subject: RE: tax deferral status

Jerry – this property became Designated Forestlands (that is, forestlands by application) in 1992. The owner at the time of application was Arthur R. Moshofsky. It appears (but I'm not absolute on this without further research) the current owners purchasers the property in 1997.

Let me know if you need more information.

Dave

-----Original Message-----
From: KENDALL Jerry
Sent: Monday, February 07, 2005 12:58 PM
To: EVANS Dave W
Subject: RE: tax deferral status

Thanks Dave. If you can get the circulars, fine, but they are not critical. It's more the tax deferral status I'm after.

-----Original Message-----
From: EVANS Dave W
Sent: Monday, February 07, 2005 12:11 PM
To: KENDALL Jerry
Subject: RE: tax deferral status

Hi Jerry, here is some info I can get to you quickly:

I didn't get a copy of the notice for PA 04-6092.

Map 18-04-24-00, tax lot 00300 is in two accounts due to tax code split; account #0736759 contains 182.85 acres and it is all in Forest Deferral. Account #1001492 has 133.50 acres in Forest Deferral and 2 – 1 acre home sites, for a total of 318.35 acres in the tax lot.

It has been in forest deferral since at least 1995; I will need to do some research and get back to you for prior years. I will go back to 1990 if that sounds alright.

I will forward copies to you of the Dept. of Revenue Information Circulars for special assessment of farmland in an EFU and Non-EFU zones. The forestland program(s) have gone through so many changes in the last 4 to 6 years that there aren't any current circulars. I can forward you some of these if and when we receive some but I don't know when that might be.

Dave

-----Original Message-----
From: KENDALL Jerry
Sent: Monday, February 07, 2005 9:59 AM
To: EVANS Dave W
Subject: tax deferral status

[redacted]

— ATTCH. #4 — 2 pp. —

Hi Dave.

I'm doing a Plan amendment/zone change, PA 04-6092 (let me know if you did not get notice), 320 acres going from EFU to ML (proposed, that is).

It is map 18-04-24 #300.

I need some farm/forest deferral info.

Is it getting any?

Acreage breakdown on each?

If getting a deferral, when was such applied for? Also, more specifically, a commissioner wants to know if any deferral was applied for "during the last 15 years".

Lastly, if you have handouts on farm/forest deferral programs that your office administers, can you courier me copies?

I would need this info by next Monday at the latest.

Thanks for your help.

Jerry Kendall/Associate Planner
email: Jerry.Kendall@co.lane.or.us
ph: 541-682-4057
FAX: 541-682-3947

March 1997

Supplement to Marginal Lands Information Sheet

BOARD OF COUNTY COMMISSIONERS DIRECTION REGARDING THE INTERPRETATION AND ADMINISTRATION OF MARGINAL LANDS APPLICATIONS

On February 26, 1997, the Lane County Board of Commissioners reviewed the state Marginal Lands law and developed responses to seven issues in the law needing clarification for purposes of administration by Lane County. Those issues are identified below, followed by the direction provided by the Board. Any application for the Marginal Land designation within the Lane County Rural Comprehensive Plan's jurisdiction must be in compliance with the Board's directions. Refer to the Marginal Lands Information Sheet, or to Oregon Revised Statutes 197.247 (1991 laws), for an explanation of the law itself.

ISSUE 1: What is the Marginal Lands concept?

Board's Direction:
The Board recognized that marginal land is intended to be a sub-set of resource land, *i.e.*, there are "prime" resource lands and "marginal" resource lands. The marginal lands are to be available for occupancy and use as smaller tracts than are required in the better resource lands. The criteria in the law define which lands may be designated as marginal. Evidence for this position is found in the legislative history and the fact that marginal lands are recognized in both Statewide Goal 3 - Agricultural Lands and Goal 4 - Forest Lands.

ISSUE 2: Definition of "Management".

When considering forest land, the entire growth cycle must be considered for evidence of management. This is because even the best managed forest operations may have nothing occurring on the land during the five-year window (1978 - 1982) stated in the marginal lands statute (ORS 197.247(1)(a)(1991 Edition). For farm operations, however, it is hard to conceive of an operating farm on which nothing occurred for five years.

Board's Direction :
No evidence of human activity on the land is required for forest land to be "managed". The conscious decision not to convert the land to another use is enough evidence of management to meet the statutory intent, provided there is a significant amount of merchantable or potentially merchantable trees on the property. Likewise, evidence of timber harvest since 1978 would suffice to show management even if there were no trees currently on the property. For farm land, no evidence of farm use during the 5-year statutory window would indicate that land was not managed for farm use.

ISSUE 3. Managed "as part of" a (farm or forest) operation during (1978-1982).

Does this phrase in ORS 197.247(1)(a)(1991) mean, for example, that if a large timber company owned and managed a 2000 acre tract during the five-year window, and then sold someone a 40 acre portion of non-forest land in 1985, that 40 acres would not be eligible for Marginal Lands designation?

Board's Direction :
The Board found that the law creates a general presumption that all contiguous land owned during 1978-82 was part of the owner's "operation". That presumption could be rebutted, however, by substantial evidence

that the parcel in question was not, in fact, a "contributing part" of the operation. The applicant would bear the burden of producing such evidence.

ISSUE 4: What price data should be used to calculate gross annual income for forest lands?

Board's Direction :
The legislative intent of the "management and income test" of the Marginal Lands Law was to identify those lands which were not, at the time the Marginal Lands law was enacted (1983), making a "significant contribution" to commercial forestry. Therefore, it is appropriate and statistically valid to use the following methodology:

1. Based on the best information available regarding soils, topography, etc., determine the optimal level of timber production for the tract assuming reasonable management.
2. Assume that the stand was, in 1983, fully mature and ready for harvest.
3. Using the volumes calculated in step (1), and 1983 prices, calculate the average gross annual income over the growth cycle.

ISSUE 5: What "growth cycle" should be used to calculate gross annual income?

Board's Direction :
The consensus of the Board was that a 50-year growth cycle should be adopted as the usual standard, with the option that another standard could be used if substantiated by compelling scientific evidence presented by the applicant. The Board's choice was based on evidence that the USDA Natural Resource Conservation Service has adopted the 50-year cycle for rating soil productivity, plus the administrative ease of having a standardized figure.

ISSUE 6: Weight of evidence.

One of the main holdings of the Ericsson case, which arose in Lane County, is that on-site evaluation by a qualified expert is weightier evidence than published data. Given this ruling, what is the appropriate role of the parcelization table in Lane Code 16.211(10)(b) and the legislative findings for Goal 4 of the Rural Comprehensive Plan as an income standard?

Board's Direction :
As a matter of administrative ease, and in the absence of other substantial evidence, the parcelization test could still be used. It is one method of identifying the acreage required of a given forest capability classification to achieve the $10,000 income standard.

ISSUE 7: Ambiguities in the parcelization tests of ORS 197.247(1)(b)(A) & (B).

Is the parcelization test measuring the percent of an area (acreage) or the percent of the number of parcels a "parcel count"? If the test in ORS 197.247(1)(b)(A) is an area test, does the percentage requirement apply to the acreage or to the number of parcels that lie wholly or partly within the 1/4 mile of the subject tract?

Board's Direction :
Regard the tests in ORS 197.247(1)(b)(A) & (B) as "area" tests with the difference being that (A) specifies an area including the subject parcel and land within 1/4 mile and uses a 50% small lot test, whereas (B) increases the area to a minimum of 240 acres but raises the small lot test to 60%.

(Note: This is the position adopted by Lane County in the Jackson case. In that case, Lane County ruled that the area was limited to the 1/4-mile line, whereas DLCD argued that the area line should expand to include the entirety of any parcel partly located within the 1/4 mile boundary. DLCD threatened to appeal the Jackson case on that basis, but did not do so.)

INFORMATION SHEET

REQUIREMENTS FOR MARGINAL LAND DESIGNATION AND ZONING

In response to state legislation, Lane County has adopted a Marginal Lands Plan designation and zoning district, both of which are to be applied on a case-by-case basis. This Information Sheet explains the requirements of the designation/zone, and what must be supplied to the County in order to justify an application.

Adopted policies concerning the state Agricultural Lands Goal (Goal 3) and Forest Lands Goal (Goal 4) state as follows:

> *(Agricultural)(Forest) lands that satisfy the requirements of ORS 197.247 may be designated as Marginal Lands and such designations shall also be made in accordance with other Plan policies. Uses and land divisions allowed on Marginal Lands shall be those allowed by ORS 197.247 (Agricultural Policy #14, Forest Policy #3)*

Lane County's application of the Marginal Lands designation/zone is spelled out in the Working Paper: Marginal Land (1983) document, which explains and cites ORS 197.247. In order for property to receive the designation and the zoning district of "ML", it must meet the following tests:

> *The land must not have been managed during thereof the five calendar years between January 1, 1978 and January 1, 1983, as part of a farming operation which produced $20,000 or more in annual gross income, or as part of a forest operation capable of producing an average, over the growth cycle, of $10,000 in annual gross income. Statistical information compiled by Oregon State University Extension service or other similar emperical data may be used to demonstrate income capability.*

In addition to the above, the land must meet one of the following tests:

a. *At least 50% of the area of the proposed Marginal Land, plus the lots or parcels all or partially located within 1/4-mile of the perimeter of the proposed Marginal Land, consists of lots or parcels 20 acres or less in size as of July 1, 1983. Lands within an adopted Urban Growth Boundary are not to be included in this calculation. Those lots or parcels which are adjacent and of common ownership* are to be considered one lot or parcel (lots or parcels separated by a public road are not considered adjacent).*

   **Owned by the same person, parents, children, sisters, brothers or spouses, separately or in tenancy in common, or ownership being transferred from one of those listed to another.*

b. *The proposed Marginal Land is located within an area of not less than 240 acres, of which at least 60% (by area) is made up of lots or parcels of 20 acres or less in size as of July 1, 1983. Lands within an adopted Urban Growth Boundary and/or lands within an area to which an exception has been adopted to Goal 3 or 4 (e.g., a Developed and Committed area) by the County are not to be included in the above calculation. Parcel ownership provisions as stated in "a" above also apply to this test.*

c. *The proposed Marginal Lands is composed predominantly (more than 50%, by area) of soils in capability classes V through VIII in the Agricultural Capability Classification System used by the U.S. Department of Agriculture Soil Conservation Service, and is not capable of producing 85 cubic feet of merchantable timber per acre per year.*

All Marginal Land applications will be considered pursuant to the County's Plan Amendment process (Lane Code 16.400). Applications must be for entire legal lots or parcels.

Submittal Requirements

1. Completed General Land Use Application Form.

2. Completed Plan Amendment Application Form.

3. A statement (affidavit) certifying that the property in the application has not been used for *farming* purposes per the condition in the statutory "income test."

4. A soils report, indicating soils types, acres of each, agricultural capability classification and forest land cubic foot site class ratings for the property. This will be used to determine if the property meets the *forest land* "income test," and will also be used if optional test "c" in the statute is selected for use by the applicant. See "soils test" below.

5. If optional tests "a" or "b" in the statute -- location of the property with respect to neighboring parcels -- are selected for use by the applicant, up-to-date assessor's maps showing parcels by size and ownership, within the areas designated by the statute, must be submitted with the application.

A filing fee will be assessed upon application. All information will be verified by County staff. Pre-application meetings are recommended. False or inaccurate information may be cause for invalidation of the application. It is the applicant's responsibility to provide the necessary data to allow processing of the application.

Soils Test:

In order for the forest land "income test" to be met, the following formula must be applied:

Cubic Foot Site Class	Maximum Acreage Allowed
2 (165-224 cf/a/y)	Seventeen Acres (17)
3 (120-164 cf/a/y)	Twenty-four Acres (24)
4 (85-119 cf/a/y)	Thirty-four Acres (34)
5 (50-84 cf/a/y)	Forty-three Acres (43)
6 (20-49 cf/a/y)	Sixty-four Acres (64)

If the property falls into more than one of the above categories, determine the maximum acreage allowed by stating:

1. Number of acres of the property in each applicable CFSC category;

2. Percentage of acreage within each category (divide the acres of the property within each category by the acreage maximum for each category);

3. Add the percentages. Maximum is exceeded if percentage is 100 or more, and property does not qualify for Marginal Land designation.

197.247 Amendment of goals; marginal lands designation; effect on applicability of goals. (1) In accordance with ORS 197.240 and 197.245, the commission shall amend the goals to authorize counties to designate land as marginal land if the land meets the following criteria and the criteria set out in subsections (2) to (4) of this section:

(a) The proposed marginal land was not managed, during three of the five calendar years preceding January 1, 1983, as part of a farm operation that produced $20,000 or more in annual gross income or a forest operation capable of producing an average, over the growth cycle, of $10,000 in annual gross income; and

(b) The proposed marginal land also meets at least one of the following tests:

(A) At least 50 percent of the proposed marginal land plus the lots or parcels at least partially located within one-quarter mile of the perimeter of the proposed marginal land consists of lots or parcels 20 acres or less in size on July 1, 1983;

(B) The proposed marginal land is located within an area of not less than 240 acres of which at least 60 percent is composed of lots or parcels that are 20 acres or less in size on July 1, 1983; or

(C) The proposed marginal land is composed predominantly of soils in capability classes V through VIII in the Agricultural Capability Classification System in use by the United States Department of Agriculture Soil Conservation Service on October 15, 1983, and is not capable of producing fifty cubic feet of merchantable timber per acre per year in those counties east of the summit of the Cascade Range and eighty-five cubic feet of merchantable timber per acre per year in those counties west of the summit of the Cascade Range, as that term is defined in ORS 477.001 (21).

(2) For the purposes of subparagraphs (A) and (B) of paragraph (b) of subsection (1) of this section:

(a) Lots and parcels located within an urban growth boundary adopted by a city shall not be included in the calculation; and

(b) Only one lot or parcel exists if:

(A) A lot or parcel included in the area defined in subparagraph (A) of paragraph (b) of subsection (1) of this section is adjacent to one or more such lots or parcels;

(B) On July 1, 1983, greater than possessory interests are held in those adjacent lots or parcels by the same person, parents, children, sisters, brothers or spouses, separately or in tenancy in common; and

(C) The interests are held by relatives described in subparagraph (B) of this paragraph, one relative held the interest in the adjacent lots or parcels before transfer to another relative.

(3) For the purposes of paragraph (b) of subsection (2) of this section:

(a) Lots or parcels are not "adjacent" if they are separated by a public road; and

(b) "Lot" and "parcel" have the meanings given those terms in ORS 92.010.

(4) For the purposes of subparagraph (B) of paragraph (b) of subsection (1) of this section, lots and parcels located within an area for which an exception has been adopted by the county shall not be included in the calculation.

(5) A county may use statistical information compiled by the Oregon State University Extension Service or other objective criteria to calculate income for the purposes of paragraph (a) of subsection (1) of this section.

(6) Notwithstanding the fact that only a certain amount of land is proposed to be designated as marginal for the purposes of establishing the test area under subparagraph (A) of paragraph (b) of subsection (1) of this section, any lot or parcel that is within the test area and meets the income test set out in paragraph (a) of subsection (1) of this section may be designated as marginal land.

(7) The amended goals shall permit counties to authorize the uses on and divisions of marginal land set out in ORS 215.317 and 215.327.

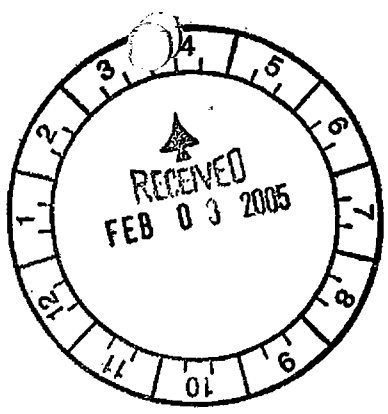
(8) The provisions of this section shall not affect the applicability of any goal, except the goals on agricultural and forest lands, to a land use decision.

(9) Any amendments to local government plans and regulations resulting from amendments to goals required by subsection (1) of this section shall become effective only after approval by the commission under ORS 197.251 or 197.610 to 197.855. [1983 c.826 §2]

197.250 Compliance with goals required. Except as otherwise provided in ORS 197.245, all comprehensive plans and land use regulations adopted by a local government to carry out those comprehensive plans and all plans, programs, rules or regulations affecting land use adopted by a state agency or special district shall be in compliance with the goals within one year after the date those goals are approved by the commission. [1973 c.80 §32; 1977 c.664 §19; 1981 c.748 §29a; 1983 c.827 §56a]

197.251 Compliance acknowledgment; commission review; rules; limited acknowledgment; compliance schedule. (1) Upon the request of a local government, the commission shall by order grant, deny or

VOL. 4 SIG 8



HERSHNER HUNTER LLP

STEVE CORNACCHIA
scornacchia@hershnerhunter.com

February 3, 2005

Jerry Kendall
Lane County Land Management Division
Public Service Building
125 E. 8th Avenue
Eugene, OR 97401

Re: Karen Dahlen (PA 04-6092)
Our File No. 22186.30005

Dear Jerry:

Enclosed herewith are copies of documents and materials from PA 03-5657, the subdivision application approved by the Lane County Planning Director on June 15, 2004. We incorporated PA 03-5657 into the application materials for PA 04-6092 and requested that Lane County include the incorporated PA 03-5657 into the record of PA 04-6092. You have requested that we produce specific materials from PA 03-5657 that we wish to have incorporated into the record of PA 04-6092. The following copies of documents and materials are enclosed pursuant to that request and consistent with our request for incorporation and inclusion in the subject record:

- The preliminary subdivision application for Tax Lot 18-03-19-00-1300, without enclosures (many of which are reproduced and included in the subject application);
- March 4, 2004, correspondence from this office to you, without enclosure (the Marc Setchko enclosure to that correspondence is presently in the record as an enclosure to the subject application;
- The June 15, 2004, Lane County Planning Director Administrative Approval of PA 03-5657.

ATTCH. # 6 -3488.

Please contact me if you have any questions regarding this matter.

Best regards,

STEVE CORNACCHIA

PSC:ss
Enclosures
Cc: Karen Dahlen (w/o enclosures)

Preliminary Subdivision Application
Lane Code Chapter 16.050

Owner: Karen Dahlen
Address: P.O. Box 5687
Eugene, OR 97405
Telephone: 431-3892

Agents for Owner:

Jim Belknap
Territorial Land Company
P.O. Box 865
Cottage Grove, OR 97424

Phone: 942-9141

Steve Cornacchia
Hershner, Hunter, Andrews, Neill & Smith, LLP
P.O. Box 1475
Eugene, OR 97440-1475
Phone: 686-8511

Subject Property: Tax Map 18-03-19, Tax Lot 1300, see Exhibit A.
Acreage: 67.16 acres
Zoning: Marginal Land (ML)
Zoning Plot: 348, see Exhibit B
Tax Code: 004-06

Proposal: This application is to gain approval of a subdivision of the subject property into five lots, varying in size from 10 to approximately 21 acres. See proposed Subdivision Plan at Exhibit C.

(1) Conformity with the Comprehensive Plan

All divisions shall conform with the Comprehensive Plan for Lane County and any applicable City Comprehensive Plan.

The subject property lies outside the Urban Growth Boundary for the City of Eugene and the Metro Plan Boundary, thus is not subject to any applicable City Comprehensive Plan.

The application is in conformance with the Lane County Comprehensive Plan. Under Goal Three, Agricultural Lands, the county's comprehensive plan provides in policy number 14 that land may be designated as marginal land if it complies with the requirements of ORS 197.247 and Lane County General Plan Policies, Goal 5, Flora and Fauna, policies number 11 and 12. Under Goal Four, Forest Lands, policy number 3 stipulates that "Forest lands that satisfy the requirements of ORS 197.247 may be designated as Marginal Lands and such designations shall also be made in accordance with other Plan policies. ***Uses and land divisions allowed on Marginal Lands shall be those allowed by ORS 197.247."*** (Emphasis added)

In 1984 under PA-0940 the subject property was re-zoned to Marginal Land. Through the designation of the subject property as Marginal Land, the property was shown to comply with the respective state statute and county general plan policy.

ORS 197.247(7) provides that "The amended goals shall permit counties to authorize the uses on and divisions of marginal land set out in ORS 215.317 and 215.327." ORS 215.317, Permitted uses on marginal land, provides "(1) A county may allow the following uses to be established on land designated as marginal land under ORS 197.247 (1991 Edition) (d) One single-family dwelling on a lot or parcel created under ORS 215.327 (1) or (2)."

Under ORS 215.327, Divisions of marginal land. "A county may allow the following divisions of marginal land:

(1) Divisions of land to create a parcel or lot containing 10 or more acres if the lot or parcel is not adjacent to land zoned for exclusive farm use or forest use or, if it is adjacent to such land, the land qualifies for designation as marginal land under ORS 197.247 (1991 Edition).

(2) Divisions of land to create a lot or parcel containing 20 or more acres if the lot or parcel is adjacent to land zoned for exclusive farm use and that land does not qualify for designation as marginal land under ORS 197.247 (1991 Edition)."

As provided in the Comprehensive Plan, "Uses and land divisions allowed on Marginal Lands shall be those allowed by ORS 197.247." The proposed division of the subject property conforms to the requirements of ORS 197.247.

(2) Conformity with the Zoning

All divisions shall comply with all specifications of the applicable zoning requirements in Lane Code

Under Lane Code 16.214(6) Area. Land in a Marginal Land zone may be divided as follows:

(a) Into lots or parcels containing at least 10 acres if the lots or parcels are not adjacent to land zoned Exclusive Farm Use (E), Nonimpacted Forest Land (F-1), Impacted Forest Land (F-2), or if it is adjacent to such land, the land qualifies for designation as marginal land pursuant to ORS Chapter 197.

(b) Into lots or parcels containing 20 acres or more if the lots or parcels are adjacent to land zoned Exclusive Farm Use (E), Nonimpacted Forest Land (F-1), Impacted Forest Land (F-2), and that land does not qualify for designation as marginal land pursuant to ORS Chapter 197.

Counties are authorized under ORS 197.247(1)(a) and (b)(C) (1991 Edition) to designate land as marginal land if the land meets the following criteria:

"The proposed marginal land was not managed, during three of the five calendar years preceding January 1, 1983, as part of a farm operation that produced $20,000 or more in annual

gross income or a forest operation capable of producing an average, over the growth cycle, of $10,000 in annual gross income; and ... is composed predominantly of soils in capability classes V through VIII in the Agricultural Capability Classification System in use by the United States Department of Agriculture Soil Conservation Service on October 15, 1983, and is not capable of producing fifty cubic feet of merchantable timber per acre per year in those counties east of the summit of the Cascade Range and eighty-five cubic feet of merchantable timber per acre per year in those counties west of the summit of the Cascade Range, as that term is defined in ORS 477.001 (21)."

Qualification of adjacent property as Marginal Land.

As depicted in Exhibit A, to the north of the subject property is Tax Lot 18-03-19-00-1200. This parcel is 49.71 acres, as described by the Lane County Department of Assessment and Taxation, and is zoned F2. That parcel was not managed, during three of the five calendar years preceding January 1, 1983, as part of a farm operation that produced $20,000 or more in annual gross income. That parcel has been owned since January 1, 1978 by Bernard and Sybil Peters and they have provided a statement that no agricultural use has been made of the parcel throughout the period of their ownership (see statement of Sybil Peters, dated June 2, 2003, attached hereto as Exhibit D and incorporated herein by this reference). As demonstrated below, that parcel contains soils with forest land capability of only 23.9538 cubic feet per acre per year, rendering it incapable of management producing at least $10,000 in annual gross income of the growth cycle. 56.693% of the soils are in Soil Class V-VIII. The Soil Conservation Service Map provided by the Lane Council of Governments shown at Exhibit E sets out the following soils capabilities for Tax Lot 18-03-19-1200:

Acres	% of Parcel	Soil Type	Agricultural Capability	Forest Capability		Total Forest Capability
3.141	6.319%	43E Dixonville-Philomath-Hazelair Complex	IV	63	X 3.141 =	197.883
24.079	48.441%	102C Panther	VI	0		0
18.385	36.998%	43C Dixonville-Philomath-Hazelair Complex	III	54	X 18.385 =	992.790

Acres	% of Parcel	Soil Type	Agricultural Capability	Forest Capability	Total Forest Capability
3.075	6.186%	138E Witzell	VI	0	0
49.707 ac	100%				1,190.673 cf/ac/yr

1,190.673 total Cubic Feet / 49.7Acres = 23.9538 Cubic Feet per Acre per Year Average

As depicted in Exhibit F, to the east of the subject property is Tax Lot 18-04-24-300. This parcel is 320.49 acres, as represented by the Lane County Department of Assessment and Taxation, and is zoned EFU40. This parcel was not managed, during three of the five calendar years preceding January 1, 1983, as part of a farm operation that produced $20,000 or more in annual gross income. The parcel was owned between January 1, 1978 and January 1, 1983, by four individuals including Art Moshofsky. On April 15, 1997, Mr. Moshofsky issued a statement that during that period of ownership the parcel was not managed as part of a farm operation (see statement of Art Moshofsky, dated April 15, 1997, attached hereto as Exhibit G and incorporated herein by this reference).

As demonstrated below, Tax Lot 18-04-24-300 contains soils with a forest land capability of 26.4011 cubic feet per acre per year, rendering it incapable of management producing at least $10,000 in annual gross income over the growth cycle. In addition, 188.429 acres are in Class V through VIII soils, or 58.793% of the parcel.

Attached at Exhibit H is the Soil Conservation Service Map and accompanying soil index key, provided by the Lane Council of Governments for Tax Lot 300. The summation of the soils capability for this lot is as follows:

Acres	% of Parcel	Soil Type	Agricultural Capability	Forest Capability	Total Forest Capability
28.514	8.897 %	43E Dixonville-Philomath-Hazelair Complex	IV	63 X 28.514 =	1796.382
79.842	24.912%	28C Chehulpum	VI	0	0
37.011	11.548 %	138G	VI	0	0

Acres	% of Parcel	Soil Type	Agricultural Capability	Forest Capability	Total Forest Capability
.371	.116 %	113C Ritner	IV	149 X .371 =	55.279
27.256	8.504 %	138E Witzell	VI	0	0
10.161	3.171 %	43C Dixonville-Philomath-Hazelair Complex	III	54 X 10.161 =	548.694
13.864	4.326 %	52D Hazelair	IV	0	0
34.574	10.788 %	102C Panther	VI	0	0
9.042	2.821 %	125C Steiwer	III	0	0
12.157	3.793 %	41C Dixonville	III	152 X 12.157 =	1847.86
27.358	8.536 %	135E Willakenzie	IV	154 X 27.358 =	4213.132
15.009	4.683 %	78 McAlpin	II	0	0
11.637	3.631%	105A Pengra	III	0	0
9.746	3.041%	108C Philomath	VI	0	0
3.950	1.233 %	125D	IV	0	0

Acres	% of Parcel	Soil Type	Agricultural Capability	Forest Capability	Total Forest Capability
0 (trace)	negligible	113	VI		
320.492 ac	100 %				8,461.347 cf/ac/yr

8,461.347 total Cubic Feet / 320.492 Acres = 26.4011 Cubic Feet per Acre per Year Average

As depicted in Exhibit A, to the south of the subject property are Tax Lots 18-03-19-00-1301 and 1302, which are zoned RR10, see Exhibit B.

As depicted in Exhibit A, adjoining the subject property at its eastern boundary is Tax Lot 18-03-19-00-1400, a small lot zoned F2, and South Willamette Street, County Road No. 2249 (shown as County road No. 436 in the Lane County Tax Assessor's map at Exhibit A). Across South Willamette Street are Tax Lots 18-03-19-1500 (25.98 acres) and 18-03-19-00-1505 (18.32 acres), both zoned F2, and Tax Lot 18-03-19-00-1507, which is zoned RR10. (Refer to Exhibit B for zoning confirmation).

Tax Lots 18-03-19-1400, 1500 and 1505 are of sufficient forestland capability that the parcels would not qualify as Marginal Land, accordingly, any parcels created in the subdivision that abut these three F2 zoned lots will be required to be 20 acres or larger.

The area of the subject property that abuts Tax Lots 18-03-19-1301, 1302 and 1507 can be divided into parcels of 10 or more acres as these three lots are zoned RR10, not being a farm or forestland designation.

The area of the subject property that abuts Tax Lots 18-03-19-00-1200 and 18-04-24-300 can be divided into parcels of 10 or more acres as these two lots meet the criteria for designation as Marginal Land.

As shown in the preliminary subdivision plan, Lot 1 is projected to be approximately 21.19 acres and will adjoin Tax Lots 18-03-1400, 1500 and 1505. Lots 2, 3, 4 and 5 will be 10.01 acres, 10.02 acres, 12.84 acres and 12.82 acres, respectively, and will abut the RR10 zoned parcels or the parcels that would qualify for Marginal Land designation. This proposed division complies with the requirements of Lane Code 16.214.

(3) **Relation to Adjoining Road Systems**

A subdivision, replat or partition shall provide for the continuation of major and secondary roads existing in adjoining subdivisions, replats or partitions, or for their proper projections when adjoining property is not subdivided, replatted or partitioned, and such streets shall be of a width not less than the minimum requirements for roads set forth in Lane Code, Chapter 15. Where the approving authority determines that topographic conditions make such continuation or conformance impractical, exceptions may be made as provided in Lane Code 13.080.

The subject property adjoins South Willamette Street, County Road No. 2249. Access onto South Willamette Street will be by an existing private roadway that enters as depicted in Exhibit C. The road that is proposed to serve the development is to be a private road, located within a 60 foot wide easement area. Reciprocal beneficial and burdening easements will be placed on the five lots of the development, as well as the adjoining land to the west, Tax Lot 18-04-24-00-300. The road to serve the subject property and westerly adjoining property (Tax Lot 300) is presently constructed to a private road standard, being a 16 foot wide asphalt surface. A joint use and maintenance agreement will be incorporated into conditions, covenants and restrictions that will be applied to the lots of the development. No adjoining property other than the referenced Tax Lot 18-04-24-00-300 will be benefitted by the use of the road.

(4) **Redevelopment Plan**

(a) In subdividing or partitioning tracts of land into large lots which at some future time could be further divided, the Director may require that parcels, lots or blocks shall be of such size and shape, be so designed and meeting such building site restrictions as will provide for extension and opening of streets at intervals which will permit a subsequent division of any parcel or lot into smaller sizes which shall have the minimum lot frontage on a street.

(b) Any person dividing tracts of land into large parcels or lots which at some future time could be further divided and still meet the minimum area requirement of the zone in which the land is located, shall provide suitable road access to each created parcel or lot so that the future development of each parcel or lot shall provide access for the redevelopment parcels or lots.

(c) The County may require that special development recommendations and/or restrictions on the location of buildings be made a matter of public record when it is deemed necessary to ensure that redivision may take place in conformity with the purpose of this Chapter. If the restrictions are considered permanent, they may be recorded by separate document.

(d) Redevelopment plans may be required to show compliance to Lane Code 13.050(4)(a), (b) and (c) above prior to preliminary approval.

No redevelopment plan is submitted with this application for subdivision as the parcels created can not be further divided under existing zoning.

(5) Access

(a) Lots or parcels shall have verifiable access by way of a road, either County, local access (public) or an easement. Verifiable access shall meet the following criteria:

(I) Each lot or parcel abuts on the road for a distance of at least 20 feet.

(ii) There is a legal right appurtenant to the lots or parcels to use the road for ingress and egress. A legal right to use an easement may be evidenced by : 1) an express grant or reservation of an easement in a document recorded with the County Recorder, 2) a decree or judgement issued by a court of competent jurisdiction, 3) an order of the board establishing a statutory way of necessity or gateway road, or 4) an express easement set forth in an approved and recorded subdivision or partition.

(iii)The road provides actual physical access to the lots or parcels.

(b) County and local access - public roads used as access to lots or parcels shall be designed and developed according to the standards of Lane Code, chapter 15 and Lane Manual, Chapter 15.

(c) Easements used as access to lots or parcels shall meet the following criteria:

(I) There shall be no more than four lots, parcels or unsubdivided or unpartitioned tracts of land accessed by any portion of the easement, except that more than four lots in a subdivision or partition may be accessed by easement. This restriction may be modified through compliance with the variance section of this Chapter.

(iii) Easement shall not be approved if the road is presently needed or is likely to be needed for access to adjacent properties or to be utilized for a County or public road in the normal development of the area.

(iii) The minimum width of easement shall be 20 feet.

(iv) All approved documents creating a private access easement shall provide for the installation, construction and maintenance thereof of all public utilities and facilities which are now or may in the future be needed for the area abutting the road and the surrounding area.

(v) The county may require such improvements as are reasonably necessary to provide safe and adequate access to the lot or parcel.

(vi) A lot or parcel abutting a railroad or limited access road right-of-way may require special consideration with respect to its access requirements.

(vii) Any easement approved as a private access easement shall be documented on a form acceptable to the Department and shall contain the minimum following information: grantor and grantee; description of the dominant and servient tenements; description of the intent or purpose of the easement and a statement of maintenance responsibility.

(viii) All approved easements shall be recorded.

(ix) If the County determines that the access and transportation needs of the public would be better served if the private access easement being considered would be established as a public road, it may require that a public road dedication be made to a length and width deemed sufficient by the Department of Public Works.

As previously discussed in Section (3), access to the various parcels shall be over the presently constructed 16 foot wide private road, lying within a 60 foot wide easement. The easement shall be a part of the final plat as it is recorded. As depicted in Exhibit C, all lots within the subdivision have substantially greater than 20 feet of frontage on the proposed roadway. The existing electrical and telephone service lies within the proposed easement area, running alongside the presently constructed road. The criteria stipulated in Sections (4a) through (4c) above are stipulated to be included within the easement document, a final copy of which shall be submitted for review and approval prior to recording.

(d) For the portion of a panhandle tract used as access to the main portion of the tract, the County may require such road improvements and design as are necessary to provide safe and adequate access to the main portion of the tract.

This provision is not applicable to the proposed subdivision.

(6) Control Strip

The County may require that a strip of land contiguous to a road be dedicated or deeded to the public for the purpose of controlling access to or the use of a lot or parcel for the purposes specified by Lane Code 13.050(6)(a) through (e).

It is not anticipated that a control strip will be required in this subdivision proposal.

(7) Utility and Watercourse Easement

(a) Utility easements. The dedication of easements for the placement of overhead or underground utilities, including, but not limited to, electric power, communication facilities, sewer lines, water lines and gas lines shall be required where necessary.

Electrical and telephone service is currently in place alongside the existing constructed road, with

easements in favor of the utility providers. All services are underground. In the event additional or upgraded service is required in the course of the development such services will be provided in the easement area.

(b) Watercourse easements. When a partition or subdivision is traversed by a watercourse, such as a drainageway, channel or stream, there shall be provided a storm-water or drainage easement conforming substantially with the lines of the watercourse, and of such design and development as may be deemed necessary to accommodate reasonable anticipated future development within the drainage area.

An intermittent stream drains through the northern portion of the subject property and an easement for unrestricted drainage will be provided in the final subdivision plat. The easement will affect Lots 1 and 2.

(8) Pedestrian and Bicycle Ways

When necessary for public convenience, safety or as may be designated on an adopted master bike plan, the County may require that pedestrian or bicycle ways be improved and dedicated to the public. Such pedestrian and bicycle ways may be in addition to any standard sidewalk requirements of Lane Code, Chapter 15, Roads. Pedestrian and bicycle ways shall be not less than six feet in width and be paved with asphaltic concrete or portland cement concrete.

As the proposed road to benefit the lots of the subdivision is to be a private road with limited access, no sidewalks or bicycle way is proposed to be constructed in the development.

(9) Dangerous Areas

Any area determined by the Director to be dangerous for road or building development by reasons of geological conditions, unstable subsurface conditions, groundwater or seepage conditions, floodplain, inundation or erosion or any other dangerous conditions shall not be divided or used for development except under special consideration and restriction as specified by Lane Code 13.050(9).

No dangerous areas are believed to exist on the subject property. The property is not within the floodplain and is not subject to inundation or unusual erosion hazards.

(10) Grading, Excavation and Clearings

Grading and clearing of any portion of a division by mechanical equipment for road and/or development purposes may be restricted or regulated either at the time of tentative plan approval or final approval if there is a finding that such grading or clearing presents a real threat of pollution, contamination, silting of water bodies or water supplies, erosion and slide damage, or alteration of natural drainage patterns in the area.

No threat of pollution, contamination, silting of water bodies or erosion and slide damage has been identified in the proposed subdivision.

(11) Land for Public Purposes

When a public agency has demonstrated through a capital improvement program that it has definite plans to acquire a specified portion of a proposed division for a needed public use, and there is reasonable assurance demonstrating that steps will be taken within 90 days of preliminary approval to acquire the land, then the County may require that these portions of the division be reserved for public acquisition for a period not exceeding 90 days from the date of preliminary approval.

The applicant is not aware of any lands having been identified as needed for public use.

(12) Sewerage Facilities

Lots and parcels for which the applicable zoning districts permit residences, or for which residences are contemplated, shall be served by either an approved public or community sewerage facility or be suitable for an approved individual disposal facility.

All lots within the subdivision are anticipated to be served by individual sewage disposal facilities (ie, septic systems).

(13) Water Supply

Lots and parcels shall be served by an approved public, community or individual water system.

All lots within the subdivision are anticipated to be served by individual private wells. An aquifer study has been completed by EGR and Associates. The aquifer study is attached at Exhibit I.

(14) Additional Cluster Subdivision Requirements

The land in a cluster subdivision not platted as a building lot shall be secured and maintained as private open space and recreation area by covenant or association prepared by the applicant and approved the Director or County Counsel.

The proposed development is not a cluster subdivision and no open space is planned in the development.

Conformance with Legal Lot Verification Requirements for Land Division Applications

The property that is the subject of this subdivision application has been confirmed as a Legal Lot under PA 03-_____, a copy of which is attached hereto at Exhibit J.

Index to Exhibits

Exhibit A	Lane County Department of Assessment and Taxation Map 18-03-19
Exhibit B	Lane County Zoning Map, Plot No. 348
Exhibit C	Proposed Preliminary Subdivision Plan
Exhibit D	Statement of Sybil Peters, owner of Tax Lot 18-03-19-00-1200, dated June 2, 2003
Exhibit E	Lane Council of Governments (LCOG) Soil Conservation Service Map Tax Lot 18-03-19-00-1200
Exhibit F	Lane County Department of Assessment and Taxation Map 18-04-24
Exhibit G	Statement of Art Moshofsky, former owner of Tax Lot 18-04-24-00-300, dated April 15, 1997
Exhibit H	Lane Council of Governments (LCOG) Soil Conservation Service Map Tax Lot 18-04-24-00-300
Exhibit I	Aquifer Study, completed by EGR and Associates
Exhibit J	Legal Lot Verification for Tax Lot 18-03-19-00-1300, PA 03-_____

HERSHNER, HUNTER, ANDREWS, NEILL & SMITH, LLP
LAW OFFICES

180 East 11th Avenue
P.O. Box 1475
Eugene, Oregon 97440
Telecopy (541) 344-2025
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STEVE CORNACCHIA
scornacchia@hershnerhunter.com

March 4, 2004

Jerry Kendall
Lane County Land Management Division
Courthouse Public Service Building
125 E. 8th Avenue
Eugene, OR 97401

Re: Applicant's Response to Goal One Coalition
PA 03-5657 (Dahlen)
Our File No. 22186 30004

Dear Mr. Kendall:

Enclosed herewith is a written response prepared by Marc E. Setchko, Consulting Forester. Mr. Setchko, on behalf of Karen Dahlen, is responding to the written testimony of Goal One Coalition, prepared by Mr. Jim Just, and dated February 5, 2004, regarding the forest capability of property described by assessor map 18-04-24 TL 300 ("subject property").

Mr. Just's correspondence is directed at Mr. Setchko's Forest Productivity Analysis ("Analysis"), which was submitted to Lane County for entry into the record of PA 03-5657 in support of the subject subdivision application. The Analysis demonstrated that the subject property is not capable of producing 85 cu/ft/yr of merchantable timber and was not managed as a forest operation capable of producing an average of $10,000 annual gross income over the growth cycle.

Productivity Analysis.

Mr. Just argues that Mr. Setchko's original Analysis is not a complete analysis of forest productivity because it does not contain an analysis of the site's soil capability for producing timber species other than Douglas Fir. Mr. Just attaches his own analysis of the site' s capability based upon his assertion that the analysis should include productivity ratings for species such as KMX, Hybrid Poplar and Ponderosa Pine. Mr. Just apparently draws his ratings from assumptions that KMX and Hybrid Poplar are "merchantable" for the purposes of the analysis of whether the site is "capable of producing 85 cubic feet of ***merchantable*** timber per acre per

year[1]. Mr. Just assumes that Hybrid Poplar has a productivity rating of 350 cf/ac/yr and that KMX could be produced at twice the volume of wood fiber produced by Douglas Fir. Mr. Just provides no Oregon Department of Forestry authority or foundation for his assumptions.

Mr. Setchko, however, in his response, provides a variety of analytical tables using both Lane County soil ratings and ratings from Oregon Department of Forestry that contain ratings for all soils of the site. Mr. Setchko even goes as far as to provide a table that includes ratings for Ponderosa Pine (both Mr. Just's and those from the Office of State Forester) and Mr. Just's assumptions regarding ratings for McAlpin soils (even though for an income calculation it would be worth substantially less that Douglas Fir). Regardless of the ratings used, all of Mr. Setchko' s tables demonstrate that the site is not capable of producing 85 cf/ac/yr of merchantable timber.

More important than the demonstration produced by the analytical tables is Mr. Setchko's professional opinion regarding the merchantability of the tree species that Mr. Just argues should be included in the analysis. It is Mr. Setchko's professional opinion that Douglas Fir is the most valuable of all tree species in a commercial sense. He opines that KMX and Hybrid Poplar have no commercial market and no commercial value. He opines that red alder and red cedar will not grow on the site. He opines that alder will not grow on the site. He also includes an analysis of the difficulty in growing or marketing black cottonwood, Oregon ash, Oregon white oak, maple and other conifers. It is his opinion that Douglas Fir, as the most marketable species and the species most likely to grow on portions of the subject property, will produce the most and will bring the highest market price of all tree species. Any attempt at including other species, in his opinion, would only serve to lower the capability rating and the gross annual income of the property.

Mr. Setchko's analytical tables, using both Lane County (SCS) Soil Ratings and Oregon Department of Forestry ratings, and professional reasoning for using Douglas Fir as the most valuable and merchantable species, combine to further confirm his original analysis and to further demonstrate that the subject property is not capable of producing 85 cf/ac/yr of merchantable timber.

Mr. Setchko's conclusion regarding the forest capability of the subject property is based upon the aforementioned calculations and his physical review of the subject property. His conclusion includes his findings from his site visits and his on-the-ground analysis of forest management on the site. His conclusion is consistent with those reached on many parcels in the South Hills area that are now designated "Marginal Land." Much of the land in the South Hills area is similar in that it contains poor soil and has not been extensively managed for farm or commercial forestry purposes.

1983 Timber Prices.

Mr. Just argues that Mr. Setchko must use "current timber values" to calculate the gross annual forest income of the site. Mr. Setchko references language in *DLCD v. Lane County* (Ericcson)[2]

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1 ORS 197.247(1)(b)(C)

that mentions that "current prices" were used in the calculations of the Ericcson application. In that case, however, the use of a particular year's prices was not at issue and LUBA made no determination regarding such use. What the decision in Ericcson did establish, in addition to affirming Lane County's approval of a Marginal Lands re-zoning application, was that on-site evaluation of forest productivity by a qualified expert is weightier evidence than published data or that provided by individuals not qualified as experts in forest management. In this case Mr. Setchko is the qualified expert with 27 years of forest management experience, including 17 years as a private consultant and a Master's Degree in Forestry. Mr. Just has not established that he has any experience or credentials in forest management. Furthermore, Mr. Just has not provided any testimony from a qualified expert in forest management to support his assumptions and conclusions.

Lane County, in response to and in reliance upon Ericcson, issued its interpretations of the Marginal Lands statutes in the Board of Commissioners' 1997 Supplement to Marginal Lands Information Sheet. A copy of the supplement and the information sheet is enclosed. It is a binding policy statement providing guidance and direction to applicants, staff, the public and to the Lane County Planning Commission and Board of Commissioners regarding the statute. The Board direction stated in ISSUE 4 of the supplement provides:

> "ISSUE 4: <u>What price date should be used to calculate gross annual income for forest lands?</u>
>
> **Board's Direction:**
> The legislative intent of the "management and income test" of the Marginal Lands
> Law was to identify those lands which were not, at the time the Marginal Lands law was enacted (1983), making a "significant contribution" to commercial forestry. Therefore, it is appropriate and statistically valid to use the following methodology:
>
> 1. Based on the best information available regarding soils, topography, etc., determine the optimal level of timber production for the tract assuming reasonable management.
>
> 2. Assume that the stand was, in 1983, fully mature and ready for harvest.
>
> 3. **Using** the volumes calculated in step (1), and **1983 prices**, calculate the average gross income over the growth cycle." (Emphasis added)

The Board's direction to use 1983 prices was an essential and reasonable approach to determining the productivity of forest lands at that time and obviates the need to make annual adjustments for inflation as the years go by (by adjusting the $10,000 income figure).

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[2] 23 Or LUBA 33 (1992)

Mr. Setchko's use of 1983 prices to determine average annual gross income is consistent with Lane County policy and is directed by the Board of Commissioners' binding local level policy statement in the aforementioned supplement. Using 1983 prices, Mr. Setchko has determined that the subject property was not capable of being managed for forest operations producing at least $10,000 in annual gross income.

Conclusion.

Mr. Setchko's response buttresses his earlier Analysis and further demonstrates that the subject property is not capable of producing 85 cu/ft/yr of merchantable timber and was not managed as a part of a forest operation capable of producing an average, over the growth cycle, of $10,000 in annual gross income. Mr. Setchko is a qualified expert that has supported his conclusions with on-site evaluation and analytical calculations based upon SCS (NRCS) and Oregon Department of Forestry soil capability ratings. His conclusion is that of a qualified expert that is supported by comprehensive and detailed reports that address the applicable criteria.

Respectfully submitted,

/s/Steve Cornacchia

Steve Cornacchia

PSC:ss
Enclosures

cc: Karen Dahlen (with enclosures)
Marc Setchko (w/o enclosures)
Jim Belknap (with enclosures)

LANE COUNTY PLANNING DIRECTOR

ADMINISTRATIVE APPROVAL

LAND MANAGEMENT DIVISION
http://www.LaneCounty.org/PW_LMD/

Report Date: June 15, 2004 File No: PA 03-5657

I. PROPOSAL DESCRIPTION

A. Applicant:
Jim Belknap
P.O. Box 865
Cottage Grove, OR 97424

Owner:
Karen Dahlen
P.O. Box 5687
Eugene, OR 97405

Agent:
Steve Cornacchia
P.O. Box 1475
Eugene, OR 97440-1475

B. Proposal: Request for Planning Director Approval to subdivide a 67-acre parcel into five lots of 10 acres, 10 acres, 13 acres, 13 acres and 21 acres within the Marginal Lands (ML) Zone as provided by Lane Code 16.214(6)(a) and LC 13.050.

II. DECISION

Tentative approval of the request subject to conditions shown on attached Exhibit "A."

III. BACKGROUND AND SITE INFORMATION

A. Site Description:

1. Property Description: 18-03-19 #1300, 67.16 acres in size, located south of Eugene, west of Spencer Butte Park on the west side of Willamette Street. The property is a legal lot, verified by PA 03-5632. The property is currently undeveloped.
2. Zoning:ML Marginal Lands Zone

B. Surrounding Area and Zoning

The property is bordered on the north and east by properties zoned F-2. The property is bordered on the west by properties zoned Exclusive Farm Use. The property is bordered on the south by properties zoned RR-10.

C. Services

Power: Lane Electric Cooperative
Sewer: proposed individual sewage disposal
Water: proposed wells
School: 4J Eugene
Fire: Eugene RFPD

D. Referral Responses

Transportation Planning:

Access to the proposed lots is from South Willamette Street via a private access easement. South Willamette Street is a paved, County maintained road. It is functionally classified with a planned right-of-way of 70 feet (LC 15.027) Collectors and arterials are subject to access management guidelines (LC 15.045). In this case, the single, shared private access easement would meet the criteria. A Facility Permit is required.
A Facility Permit is required for any construction within the right-of-way of roads under County jurisdiction (LC 15.205-1). This includes, but is not limited to, such construction as driveway approaches, driveway culverts or street improvements. No work is to be performed within the right-of-way prior to issuance of a Facility Permit. Driveway approaches to paved roads are required to be paved. A Facility Permit is required for the driveway approach, in order to ensure that the portion of the approach that lies within the right-of-way of South Willamette Street meets current County standards. Driveway culverts are to be built to County standards. Driveway culverts are to be built to County standards. This includes, but is not limited to, a minimum culvert size of 12" inside diameter. Exact specifications for culverts will be listed on the required Facility Permit. All conditions of Facility Permit(s) must be completed.

County Surveyor:

1. The subject property is not located within the incorporated city limits of any city.
2. This office could not locate any previous formal divisions of the subject property. The proposed development is to result in five lots.
3. The proposed lots are to be accessed via a proposed private shared 60-foot wide access easement from Willamette Street South. This access easement must be surveyed with monuments placed along the right of way to define the easement.
4. Willamette Street South, County Road 2249, was altered in 1996 with a variable width right-of-way, the minimum width being 30 feet from centerline, as said road adjoins the subject property.

5. Any necessary access permits or Facility permits for a new road and connection, or traffic control devises should be processed through the County Transportation Planning Section. These permits should be processed concurrently with the Lane County Planning approval process.
6. Surveyor should make certain the fence near the west line of Tax Lot 1400 is removed as per CSF Number 38032.
7. A survey and monumentation of the newly proposed plat is required per O.R.S. Chapter 92. The Final Plat must be prepared by a Registered Professional Land Surveyor in compliance with Lane Code and O.R.S. Chapter 92.
8. Lane County Rural Addressing should be contacted at 682-3992 after plat filing to insure that correct addresses have been assigned to the newly created lots.
9. Any wetlands, natural reserves, floodplain or geological hazard areas which exist onsite must be clearly shown on the Final Plat; a map of restricted use areas, as an alternative, with proper notification of affected lot owners, may be attached to C.C.&R.'s and filed with the plat. (LC 13.050(9)). Any existing drainage ways should be clearly shown on the.
10. Proof of Ownership must be provided by subdivision guarantee prior to the time of filing (must be dated within 30 days of the date of filing).
11. No name is currently being reserved for this development; any proposed name or change in name should be referred to: Ryan Erickson, PLS, Lane County Surveyor's Office; Phone 682-3633, in order to insure that it is acceptable and to prevent it being used by other developments.

State Fish & Wildlife:

No response received.

IV. APPROVAL CRITERIA AND ANALYSIS

Approval is subject to satisfaction of the provisions of the Rural Comprehensive Plan (RCP), the Marginal Lands Zone, and requirements of Lane Code Chapter 13 (Land Divisions).

A. Conformity with the Rural Comprehensive Plan (RCP):

The Plan Designation for this property is Marginal Lands.

B. Conformity with the Applicable Zoning District:

The request is subject to LC 16.214 area standards:

(6) Area. Land in a Marginal Land zone may be divided as follows:

(a) Into lots or parcels containing at least 10 acres if the lots or parcels are not adjacent to land zoned Exclusive Farm Use (E), Nonimpacted Forest Land (F 1), Impacted Forest Land (F 2), or if it is adjacent to such land, the land qualifies for designation as marginal land pursuant to ORS Chapter 197.

(b) Into lots or parcels containing 20 acres or more if the lots or parcels are adjacent to land zoned Exclusive Farm Use (E), Nonimpacted Forest Land (F 1) or Impacted Forest Land (F 2), and that land does not qualify as marginal land pursuant to ORS Chapter 197.

The applicant proposes to create 5 lots:

Lot 1 is 21 acres in size and is adjacent to lands zoned F-2 to the east (Willamette Street South) in compliance with subsection (b) above;

Lot 2 is 10 acres in size adjacent to lands zoned F-2 on the north (18-03-19 #1200) and west (18-04-24 #300);

Lot 3 is 10 acres in size and adjacent to lands zoned F-2 to the west (18-04-24 #300);

Lot 4 is 12 acres in size and is internal to the other lots, surrounded by subject property lands zoned Marginal Lands;

Lot 5 is 12 acres in size and adjacent to lands zoned RR-10 on the south (18-03-19 #1301, 1302) and F-2 on the west (18-04-24 #300).

In order to gain approval for lots 2, 3 & 5, the applicant has submitted information that demonstrates the adjacent properties to the north (18-03-19 #1200) and west (18-04-24 #300) qualify for Marginal Lands designation. Staff review of the evidence has concluded that the lands qualify for Marginal Lands designation *pursuant to ORS Chapter 197.*

C. Conformity with Lane Code Chapter 13.050:

Proposed land divisions are subject to the following standards. Each standard is cited, and the proposal is evaluated against it.

(1) Conformity with the Comprehensive Plan. All divisions shall conform with the Comprehensive Plan for Lane County and the following city comprehensive plans:

(a) The comprehensive plan for a small city, if the division site is within an urban growth boundary but outside the city limits.

The property is not located within an urban growth boundary.

(b) The Eugene-Springfield Metropolitan Area Plan and any applicable Special Purpose/Functional Plan or Neighborhood

Refinement/Community Plans, if the division site is within the plan boundaries.

The property is not located within the plan boundary.

Section A above demonstrates compliance with applicable Plan designation and policies.

(2) Conformity with Zoning. All divisions shall comply with the specifications of the applicable zoning requirements in Lane Code, including uses of land, area and dimension requirements, space for off street parking landscaping and other requirements as may be set forth.

Zoning conformity is established as described in Section B above.

(3) Relation to Adjoining Road System.

A subdivision or partition shall provide for the continuation of major and secondary roads existing in adjoining subdivisions or partitions, or for their proper projection when adjoining property is not subdivided or partitioned, and such streets shall be of a width not less than the minimum requirements for roads set forth in Lane Code, Chapter 15.

No adjoining roads exist which require projection into the proposed land division.

(4) Redevelopment Plan. Redevelopment plans may be required for parcels which can be redivided.

Re-division of the proposed lots is not possible under the current zoning.

(5) Access:

(a) Lots or parcels shall have verifiable access by way of a road, either County, local access (public) or an easement. Verifiable access shall meet the following criteria:

(i) Each lot or parcel abuts on the street for a distance of at least 20 feet.

(ii) There is a legal right appurtenant to the lots or parcels to use the road for ingress and egress. A legal right to use an easement may be evidenced by 1) an express grant or reservation of an easement in a document recorded with the County Recorder; 2) a decree or judgment issued by a court or competent jurisdiction; 3) an order of the Board establishing a statutory way of necessity or gateway road, or 4) an express easement set forth in an approved and recorded subdivision or partition.

(iii) The road provides actual physical access to the lots or parcels.

Access is obtained by way of South Willamette St. to a shared easement road. Each lot has a frontage on this road greater than 20 feet in length.

(b) County and local access--public roads used as access to lots or parcels shall be designed and developed according to the standard of Lane Code, Chapter 15 and Lane Manual, Chapter 15.

The existing public road, South Willamette St., is County-maintained and adequate to provide access to this easement.

Lane Code 15.105 Dedication and Improvement Requirements.

(1) Any commercial, industrial, professional, group dwelling, multiple family or community facility use, or a subdivision or partitioning adjoining a road designated by the Master Road Plan as a Type "A" or "C" road shall meet the following minimum standards and requirements for dedication and improvement:

(a) The right-of-way shall be dedicated to the width shown on the Master Road Plan for the length of the frontage or frontages of the parcel to be used for the commercial, industrial, professional, group dwelling, multiple family or community facility use, subdivision or partition, including parking and outside storage areas; and

South Willamette St. is identified as a Type "A" Road in Lane Code 15.027. The existing right-of- way width for South Willamette St. is variable with a minimum of 30 feet from centerline where it abuts the subject property. Lane Code 15.027 "Schedule of Roads" identifies a planned right-of-way width of 70 feet. Dedication to a distance of 35 feet from centerline is required as a condition of approval.

(b) The right-of-way shall be improved by the installation of paving, curbs, gutters, sidewalks, street drainage facilities and other facilities needed for traffic control as may be required by the Lane Code and Director of the Department of Public Works.

Not required at this time.

(c) If at the time of development of the use, partitioning or subdivision it is determined by the Director of the Department of Public Works to be in the best interests of Lane County and in the furtherance of the public

convenience and welfare that construction of the required improvements be deferred, the Director of the Department of Public Works may accept in lieu of the required completion of improvements a performance improvement agreement.

Not applicable.

(c) Easements used as access to lots or parcels shall meet the following criteria:

(i) There shall be no more than four lots, parcels unsubdivided or unpartitioned tracts of land accessed by any portion of the easement, except that more than four lots in a subdivision or partition may be accessed by an easement. This restriction may be modified through compliance with the variance section of this Chapter.

(ii) Easements shall not be approved if the road is presently needed or is likely to be needed for access to adjacent properties or to be utilized for a County or public road in the normal development of the area.

(iii) The minimum width of easements shall be 20 feet.

(iv) All approved documents creating a private access easement shall provide for the installation and construction maintenance thereof of all public utilities and facilities which are now or may in the future be needed for the area abutting the road and the surrounding area.

(v) The County may require such improvements as are reasonably necessary to provide safe and adequate access to the lot or parcel.

(vi) A lot or parcel abutting a railroad or limited access road right-of-way may require special consideration with respect to its access requirements.

(vii) Any easement approved as a private access easement shall be documented on a form acceptable to the Department on a form contain the minimum following information: grantor and grantee; description of dominant and servant tenements, description of the intent or purpose of the easement and a statement of maintenance responsibility.

(viii) All approved easements shall be recorded.

(ix) If the County determines that the access and transportation needs of the public would be better served if the private access easement being considered would be established as a public road, it may require that a public road dedication be made to a length and width deemed sufficient by the Department of Public Works.

A 60 foot wide easement is proposed to be used for access to lots 2 – 5 across lot 1. The total number of lots accessed by the easement is 5 (including adjacent ownership to the west). The need to access an adjacent property exists for the remainder of the owner's property to the west, Map 18-04-24 #300. The need to utilize the easement for a County or public road has not been determined a this time. However, the applicant has demonstrated in this application process that the adjacent property to the west qualifies for Marginal Lands designation. That zoning district allows the parcel to the west to be divided into a potential of 16 lots served by the easement through this property (for a total of 21 or more on the easement). A determination will be made during the review of any future land division of the adjacent property regarding the necessity for the easement to become a public road. A condition of approval requires the easement to include language that when and if needed by a public agency it will be dedicated as a public road.

Safe and adequate access must be provided for individual vehicular needs but also for police, fire and other public service vehicles. In order to provide safe and adequate access to each lot, the easement is required to be developed with a 16 foot wide graveled travel surface with no grade greater than 16%. Implementation of the above standards for travel surfaces, utilities, formatting and recording of documents is achieved through conditions of approval. The easement documents shall identify the need to dedicate the road to the public if requested by the County.

(6) *Control Strip: The County may require that a strip of land contiguous to a road be dedicated or deeded to the public for the purpose of controlling access to or the use of a lot or parcel for any of the following reasons.*

(a) To prevent access to abutting land at the end of a road in order to assure the proper extension of the road pattern and the orderly division of land lying beyond the road.

(b) To prevent access to the side of a road where additional width or improvement is required or future partition or subdivision action is needed.

(c) To prevent access to the side of a road from abutting property that is not part of the division until proportional road construction costs are conveyed to the appropriate developer. The proportional road construction costs must be computed by a licensed engineer and approved by the Department of Public Works. The agreement must be recorded and will not be valid after a period of 10 years.

(d) To prevent access to land unsuitable for development,

(e) To prevent or limit access to roads classified as arterials and collectors.

None of the above conditions exist for this proposal.

(7) Utility and Watercourse Easements.

(a) Utility Easements. The dedication of easements for the placement of overhead or underground utilities, including, but not limited to, electric power, communication facilities, sewer lines, water lines and gas lines shall be required where necessary. Such easements shall be clearly labeled for their intended purpose on all plats and may be located along or centered on parcel or lot lines or elsewhere as determined necessary by the County to provide needed facilities for the present or future development of the area.

The proposed easement will contain provisions for the installation of utilities to serve the lots.

(b) Watercourses. When a partition or subdivision is traversed by a watercourse, such as a drainage way, channel or stream, there shall be provided a storm water or drainage easement conforming substantially with the lines of the watercourse, and of such design and development as may be deemed necessary to accommodate reasonable anticipated future development within the drainage area.

Lots 1 & 2 are traversed by a drainage way that requires a watercourse easement to be shown on the final plat.

(8) Pedestrian and Bicycle Ways. When necessary for public convenience, safety, or as may be designed on an adopted master bike plan, the county may require that pedestrian or bicycle ways be improved and dedicated to the public. Such pedestrian and bicycle ways may be in addition to any standard sidewalk requirements of LC CH 15, Roads. Pedestrian and bicycle ways shall be not less than six feet in width and be paved with asphaltic concrete or portland cement concrete.

This property is not the subject of a master bike plan. Development of the property for residential use does not require pedestrian or bikeways.

(9) Dangerous Areas. Any area determined by the Director to be dangerous for road or building development by reasons of geological conditions, unstable subsurface conditions, groundwater or seepage conditions, floodplain, inundation or erosion or any other dangerous condition shall

not be divided or used for development except under special consideration and restriction. Special consideration and restriction shall consist of a detailed report by a professional engineer stating the nature and extent of the hazard and recommending means of protecting life and property from the potential hazard and/or the County shall impose limitations designed to minimize the known danger on development commensurate with the degree of hazard. Areas of erosion or potential erosion shall be protected from loss of soil and vegetative cover by appropriate means which are compatible with the environmental character, such as restricting grading or building or constructing erosion control devices. Areas of flood plain, water areas and wetlands shall be retained in their natural state to the extent practicable to preserve water quality and protect water retention, overflow and natural functions. Structures will be required to maintain flood elevation consistent with LC 11.500 (Flood Hazard Area) and LC 16.244. Areas of unstable surface or subsurface conditions shall be protected from movement by appropriate means which are compatible with environmental character, such as restricting grading or building or constructing suitable structures. Areas which are located within the designated floodway, unless a permit pursuant to LC 11.525 and LC 16.244 has been granted, shall be restricted from any building development or the installation of any permanent structure. The County may require that special development recommendations and/or restrictions as to location of building or other development be made a matter of public record when it is deemed necessary to ensure proper disposition of the dangerous area. If the restrictions are considered permanent, they shall be shown on the plat, and if temporary in nature, shall be recorded by separate document by the partitioner or subdivider prior to the recording of the plat.

No dangerous or hazardous areas have been identified on these proposed lots.

(10) Grading, Excavation and Clearings. Grading and clearing of any portion of a division by mechanical equipment for road and/or development purposes maybe restricted or regulated either at the time of tentative plan approval or final approval if there is a finding that such grading or clearing presents a real threat of pollution, contamination, silting or water bodies or water supplies, erosion and slide damage, or alteration of natural drainage patterns in the area. In all cases, excessive grading, excavation and clearing shall be avoided when detrimental to soil stability and erosion control. The character of soils for fills and the characteristics of parcels or lots made usable by means of fill shall be suitable for the intended purpose. Grading, clearing and excavation shall comply with the applicable property

development standards and site development requirements of LC Chs. 10 and 16.

Grading, excavation or clearing of the property is not anticipated to generate conditions dealt with by this criterion.

(11) Land for Public Purposes. When a public agency has demonstrated through a capital improvement program that it has definite plans to acquire a specified portion of a proposed division for a needed public use, and there is reasonable assurance demonstrating that steps will be taken within 90 days of preliminary approval to acquire the land, then the County may require that those portions of the division be reserved for public acquisition for a period not exceeding 90 days from the date of preliminary approval.

This property has not been identified for a needed public use.

(12) Sewerage Facilities. Lots and parcels for which the applicable zoning districts permit residences, or for which residences are contemplated, shall be served by either an approved public or community sewerage facility or be suitable for an approved individual sewage disposal facility. Methods of sewage disposal shall be in accordance with and subject to the applicable provisions of Oregon Revised Statutes (ORS); appropriate rules, regulations and policies promulgated under authority of ORS, and all appropriate County ordinances and policies. The establishment of rural sewerage facilities must be consistent with RCP Goal 2 Policy #24 and RCP Goal 11 policies.

Residences are allowable in the ML zone. Each lot will need to qualify for an individual sewage disposal site per Environmental Health Division requirements for allowable uses on the property.
Goal 2 Policy # 24 (now #23) applies only to the establishment of community systems for cluster subdivisions.

(a) Public or Community Sewerage Facilities.

(i) When lots or parcels are located within a reasonable distance of an existing satisfactorily operating and available sewerage system, and it is practical and feasible to connect with and be sewered by said system, the lots or parcels shall connect to the system. Should the existing facilities be unable to service the lots or parcels, individual sewage disposal systems may be considered as an interim measure if soil and other conditions are suitable for their use. If conditions pertaining to the ability of the public or community sewage facility allow connection at a later date, connection will be required under the following

circumstances: a public health hazard exists as defined by OAR Chapter 340-71-130(3), if the reason for not connecting to the public or community system were because of insufficient capacity of the public or community sewerage facility and these conditions cease to exist or if the reason for not connecting to the public or community system is based on engineering considerations such as pumping requirements and gravity sewers become available.

An existing public or community sewerage facility has not been identified within a reasonable distance to the subject property.

(ii) *When a new public or community sewerage system is proposed for the division, there shall be submitted for approval a master plan for the sewage collection and disposal system to Lane County and the State Department of Environmental Quality. The master plan shall include at least the following: a conceptual plan for safe collection, treatment and disposal facilities, including preliminary design of sewer lines, treatment units and final disposal, a conceptual plan for providing that the system be under the control of a city or other legal entity which has been formed in compliance with ORS, Chs 45-0 or 451 or a preliminary economic feasibility report.*

No new public or community sewerage system is proposed for this property.

(iii) *If the lots or parcels are located within an area with an adopted detailed master sewage plan showing the location and depth of community sewers and proposed construction schedule which will eventually serve the lots or parcels, then the applicant shall provide detailed plans, schedule, a cost estimate prepared by a registered professional engineer and a bond to cover these estimated costs. The subject Plan and cost estimate shall have been approved by the Oregon Department of Environmental Quality and Lane County. Individual sewage facilities will be allowed on an interim basis until the system is connected to the community system as approved by the above plan and schedule.*

The property is not located within an area with an adopted detailed master sewage plan.

(b) *Individual Sewage Facilities. When lots or parcels are to be served by individual sewage disposal systems, there shall be furnished*

reasonable proof that each proposed parcel or lot can accommodate an individual sewage disposal system and at least one acceptable replacement area which meets the criteria established by OAR, Chs 340-71-005 to -45. If the individual sewage disposal system and replacement area are to be located partially or wholly off of the lot or parcel for which the system and replacement area are designed to serve, then a variance must first be applied for and may be approved if in compliance with the variance section of this Chapter.

The proposed lots are to be served by individual sewage disposal systems. Proof of ability to accommodate a system and replacement area on each lot can be accomplished by the performance of a site inspection on each vacant lot. This proof shall be submitted prior to final approval of the plat.

(13) Water Supply. Lots and parcels shall be served by an approved public, community or individual water system. No construction or development work on proposed lots or parcels shall be started until information pertaining to water availability and quality is submitted to and approved by the Department. Water system shall be in accordance with and subject to applicable provisions of ORS, as well as all appropriate rules, regulations and policies promulgated under authority of these statutes, Lane Code and Manual. The establishment of rural water systems shall be consistent with RCP Goal 2 policy #24 and RCP Goal 11 policies.

(a) Public or Community Water System. The County may require that a new community or public water system be developed to serve lots or parcels when no existing public or community water system is available or suitable for use by the lots or parcels , and individual water systems are not feasible due to the density of the lots or parcels and/or the possibility of problems concerning the long-term availability of adequate quantities of suitable water. Aquifer and quality tests as discussed in LC 13.050(13)(c) below shall be required.

No existing public or community water system is available for use by the proposed lots. The density of the lots does not cause the need to require a community water system for the proposal. The proposed lots are not located within the interior of small acreages that might interfere with the ability to obtain water through the geological formation but instead are adjacent to larger properties to the west (320 acres) and north (40 acres). The long-term availability of adequate quantities of suitable water has been addressed by EGR & Associates in the form of an analysis of existing wells in the area,

the geological formations, and an aquifer study. Staff concludes that a community water system is not required for this proposal and individual water systems are feasible for the proposed lots.

(b) Individual Water Systems. When lots or parcels are to be served by individual water systems, sufficient evidence shall be submitted to show that each parcel or lot will have available at time of development an adequate supply of potable water which will meet minimum County standards for drinking water. Aquifer and quality tests as discussed in LC 13.050(13)(c) below shall be required.

Evidence of adequate supply and quality of water has been determined under the standards required in Section (c) below.

(c) Aquifer and Quality Tests or Geological Evaluation. Aquifer and quality tests or geological evaluation may be required by Lane County for any lot or parcel. These requirements may include, but need not be limited to, evaluation of existing well logs and preparation of a geological report on the area, an evaluation of the site by a professional geologist or full scale aquifer tests as required. In determining the detail of analysis required, the following apply:

(i) Areas designated by Board order as having problems in the quantity or quality available water as adopted, documented in Lane Manual and filed in the office of the Department shall meet the following requirements for all parcels less than 20 acres in size. The applicant must affirmatively demonstrate, in a manner acceptable to Lane County, that the proposed subdivision/partition is capable of sustaining the development anticipated with sufficient potable water. This demonstration must include, but need not be limited to, aquifer tests. More specifically, the aquifer test shall show coefficient of transmissivity, permeability, storage and specific yield. The bacteriology/chemical tests shall show compliance with standards set by the Oregon State Health Division and Lane County. The test procedure shall utilize standard acceptable practices for aquifer tests using pumped and observation wells and records of static water level, date, clock, elapsed time (in min.), depth of water, drawdown and recovery. Analysis using the non-equilibrium method (or other methods where appropriate) must be performed by a licensed geologist or engineer. A copy of all field notes and test results shall be submitted with the report, together with summary statements which indicate whether the proposed use of the aquifer could

adversely impact the neighboring wells or properties or deplete the aquifer and the general impact of the proposed use.

This property is located within an area designated as a **water quantity** limited area (Spencer Creek Watershed) by Lane Manual 13.010(2)(a)(i). The original submittal for the proposal included a report by EGR & Associates dated April 18, 2003. Comments to the proposal were received from numerous property owners in the vicinity describing water supply problems. These comments and concerns were reviewed and addressed by the applicant's engineer in a report dated December 19, 2003. An additional supplement to the report was submitted on June 1, 2004. The engineer has concluded that the aquifer is not being depleted and there is sufficient water available for the proposed subdivision. Staff finds the engineer's analysis credible regarding the availability of water in the aquifer to support the land division proposal.

This property is located in an area that has been determined to contain elevated levels of arsenic in the groundwater. A note is required to be placed on the final plat identifying this situation.

(d For all areas not designated a problem area by the procedures documented in LC 13.050(13)(a) above, a pump test report or a well log report shall be supplied, unless determined by Lane County to be not necessary. Pump test and well log reports shall be prepared according to the following criteria:

(i) Pump Test. The test shall be a minimum five-hour pumping duration and record the following information: static water level, pumping level, drawdown, recovery, residual drawdown, well yield (pumping rate) and specific capacity. Measurements shall be made before pumping begins, during the pumping phase and during the recovery phase as necessary.

(ii) Well log reports shall include tax map showing the subject property and surrounding area, all well logs of record from adjacent and surrounding properties and the location of the wells on the tax lot map.

This property is located within a water quantity limited area as designated by Lane Manual 13.010(2)(b)(i). Adequate supply of water has been demonstrated by the aquifer test method.

(14) Additional Cluster Subdivision Requirements.

GOAL ONE COALITION

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RECD FEB 08 2005

February 9, 2005

Lane County Planning Commission
125 East 8th Avenue
Eugene, Oregon 97401

RE: PA 04-6092, Dahlen Marginal Lands Application

Members of the Commission:

The Goal One Coalition (Goal One) is a nonprofit organization whose mission is to provide assistance and support to Oregonians in matters affecting their communities. Goal One is appearing in these proceedings at the request of and on behalf of its membership residing in Lane County. This testimony is presented on behalf of LandWatch Lane County and its membership in Lane County, the Goal One Coalition, and Jim Just as an individual.

I. INTRODUCTION

This proposal is to amend the RCP map to redesignate 320.49 acres of land from "Agriculural Lands" to "Marginal Lands," and change the zoning of that land from "Exclusive Farm Use 40" to "Marginal Lands (ML)." The applicant proposes that the subject parcel be subdivided into only 11 parcels following the approval. However, if the applicant could demonstrate that all adjacent property was zoned non-resource, could qualify for re-designation to Marginal Lands, or was otherwise designated for other than resource use, it is possible that 32 10-acre parcels could be developed on the subject property. The applicant proposes to limit the number of potential parcels by deed restriction to 11 parcels until such time as the subject property is included within the Eugene urban growth boundary.

The subject parcel is identified as 18-04-24 TL 300. It is located approximately ½ mile south of the Eugene city limits, west of Willamette Street. The subject property is adjacent to parcels zoned Impacted Forest (F-2) along its southern, northeast, and western boundaries. At the northwest boundary, two adjacent tax lots are zoned Marginal Lands (ML). The 67.16-acre 18-03-19 TL 1300 is adjacent to the subject property along its eastern boundary and is also zoned ML.

ORS 215.327 and LC 16.214 require a minimum parcel size of 20 acres if the parcel is adjacent to land zoned for farm or forest use that would not qualify as marginal land, and otherwise require that parcels be at least 10 acres in size.

The criteria for the designation of marginal land are set out in ORS 197.247 (1991 edition). The Staff Report refers also to Lane County guidelines for interpreting and administering marginal lands provisions, issued by the Board of Commissioners in March 1997. Because the provisions being applied are provisions of state statute, no deference is due or will be given to local interpretations of ORS 197.247.

ORS 197.247 establishes a two-part test for the designation of marginal land. Any proposal for a marginal land designation must first comply with the "income test" requirement of ORS 197.247(1)(a), which requires that the applicant prove that the subject land was not managed, during three of the five calendar years preceding January 1, 1983, as part of a farm operation producing $20,000 in annual gross income or as part of a forest operation capable of producing an average of $10,000 in annual gross income over the growth cycle.[1]

The applicant's statement asserts that the property was not part of a farm operation that produced the required income over the relevant time period, and has submitted an affidavit to that effect. The applicant's statement concedes that the property was managed as a forest operation during the relevant time period, but asserts that the forest operation was not capable of producing an average, over the growth cycle, of $10,000 in annual gross income.

The second part of the marginal land test contains three options. ORS 197.247(1)(b)(A) and (B) are "parcelization" tests, which look at parcel sizes of adjacent and nearby lands. ORS 197.247(1)(b)(C) is the "productivity" test, which requires the applicant to demonstrate that the land is predominantly comprised of soils in capability classes V through VIII and is not capable of producing 85 cf/ac/yr of merchantable timber. The applicant has elected to apply the "productivity" option of the second prong of the marginal lands test.

II. ANALYSIS

Because calculation of average income over the growth cycle depends upon assumptions and evidence related to productivity of the proposed marginal lands, this analysis will first address

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[1] ORS 197.247 (1991 edition) provides, in relevant part:

"(1) In accordance with ORS 197.240 and 197.245, the commission shall amend the goals to authorize counties to designate land as marginal land if the land meets the following criteria and the criteria set out in subsections (2) to (4) of this section:

"(a) The proposed marginal land was not managed, during three of the five calendar years preceding January 1, 1983, as part of a farm operation that produced $20,000 or more in annual gross income or a forest operation capable of producing an average, over the growth cycle, of $10,000 in annual gross income.

"(b) The proposed marginal land also meets at least one of the following tests:

"* * *

"(C) The proposed marginal land is composed predominantly of soils in capability classes V through VIII in the Agricultural Capability Classification System in use by the United States Department of Agriculture Soil Conservation Service on October 15, 1983, and is not capable of producing fifty cubic feet of merchantable timber per acre per year in those counties east of the summit of the Cascade Range and eighty-five cubic feet of merchantable timber per acre per year in those counties west of the summit of the Cascade Range, as that term is defined in ORA 477.001(21)."

issues related to the "productivity" test of ORS 197.247(1)(b)(C) and then address "income" test issues relating to ORS 197.247(1)(a).

1. Soils on the subject parcel

Soils on the subject property are described below in Table 1.

Table 1: Soils and Productivity for Agriculture and Forestry

Map #	Soil Name	Acres	Area %	Ag. Class	cf/ac/yr
28C	Chehulpum silt loam 3-12%	79.842	24.912	6	40*
41C	Dixonville silty clay loam 3-12%	12.157	3.793	3	152
43C	Dixonville-Philomath -Hazelair complex, 3-12%[2]	20.420	48.399		
	Dixonville	6.126	1.911	3	152
	Philomath	6.126	1.911	6	50*
	Hazelair	4.901	1.529	4	40*
43E	Dixonville-Philomath -Hazelair complex, 12-35%	1.534	3.637		
	Dixonville	0.460	0.144	3	152
	Philomath	0.460	0.144	6	50*
	Hazelair	0.384	0.120	4	40*
52D	Hazelair silty clay loam, 7-20%	13.864	4.326	4	40*, 92**
78	McAlpin silty clay loam, 3-12%	15.009	4.683	2	169*
102C	Panther silty clay loam, 2-12%	34.574	10.788	6	50*
105A	Pengra silt loam, 1-4%	11.637	3.631	3	50*
108C	Philomath cobbly silty clay, 3-12%	9.746	3.041	6	50*, 104**
113C	Ritner cobbly silty clay loam, 2-12%	0.371	0.116	4	149
113E	Ritner cobbly silty clay loam, 12-30%	?[3]	?	6	149
125C	Steiwer loam, 3-12%	9.042	2.821	3	30*
125C	Steiwer loam, 3-12%	3.950	1.233	4	30*
135E	Willakenzie clay loam, 20-30%	27.358	8.536	4	154
138E	Witzel very cobbly loam, 3-30%	27.256	8.504	6	70*
138G	Witzel very cobbly loam, 30-75%	37.011	11.548	6	70*

* Douglas-fir productivity data from Office of State Forester memorandum of January 27, 1989. See Exhibit 1.

[2] The Lane County Soil Survey states: " This unit is 30 percent Dixonville silty clay loam, 30 percent Philomath cobbly silty clay, and 25 percent Hazelair silty clay loam."
[3] This unit appears on the soil map unit list and on the soil map, but no acreage is given.

** Ponderosa pine productivity data from Fletcher et al., *Establishing & Managing Ponderosa Pine in the Willamette Valley,* Oregon State University Extension Service EM 8805, May 2003, p. 12.

From this data, it is clear that the soils on the subject property are predominantly agricultural capability Class V-VIII. The applicant's consulting forester's report does not contain a cf/ac/yr rating for the subject property, nor reveal how the conclusion is reached that the property cannot produce 85 cf/ac/yr of merchantable timber. Productivity can be calculated from the data in Table 1 by multiplying the acreage of each soil unit by its productivity, adding the results, and then dividing the total by the total acreage of the subject property. Potential forest productivity for the subject parcel is thus calculated to be approximately 71 cf/ac/yr.

2. The "forest operation" income test has not been adequately addressed.

ORS 197.247(1)(a) imposes an "income test" that must be met for the subject parcel to be redesignated to marginal land. It must be established that the subject property was not managed during the period 1977-1982 as part of a forest operation capable of producing an average of $10,000 in annual gross income over the growth cycle.

a. The applicant's forest productivity data is inadequate.

It is capability or potential for production, measured as cf/ac/yr of commercial tree species, that is at issue in determining a property's suitability for commercial forest uses. *Potts v. Clackamas County,* 42 Or LUBA 1 (2002).

OAR 660-006-0003(1) provides:

> "OAR Chapter 660, Division 006 applies to all forest lands as defined by Goal 4."

OAR 660-006-0010 provides, in relevant part:

> "Governing bodies shall include an inventory of 'forest lands' as defined by Goal 4[.] * * * If site information is not available then an equivalent method of determining forest site suitability must be used."

OAR 660-006-0005(2) provides:

> "'Cubic Foot Per Acre' means the average annual increase in cubic foot volume of wood fiber per acre for fully stocked stands at the culmination of mean annual increment as reported by the USDA Natural Resources Conservation Service (NRCS). Where NRCS data *are not available or are shown to be inaccurate*, an alternative method for determining productivity may be used. *An alternative method must provide equivalent data and be approved by the Department of Forestry.*" (Emphasis added.)

The applicant's forestry consultant has not provided forest productivity data capable of being expressed as cf/ac/yr for soils on the subject property, except for 78.561 acres of conifer producing forest land. His volume calculations thus exclude approximately 242 acres.

The forestry consultant then assumes that approximately 104 of those 242 acres have zero productivity. It is well established that lack of a soil productivity rating does not mean that a soil has no capability for forest production. The lack of a NRCS rating provides no information, quantitative or otherwise, pertinent to the statutory test of whether a soil is capable of producing defined levels of wood fiber. *Carlson v. Benton County*, 34 Or LUBA 140, 149 (1998).

Using assumptions on stocking rates "from plots taken in the field" the forestry consultant calculates the potential productivity of the remaining approximately 138 acres. No report on field plots is provided. The methodology used does not assess the potential productivity of the soils or reflect reasonable forest management, as it assumes that the existing stocking rate is identical to the potential stocking rate. The actual growth rate of site trees has not been measured, nor has the potential cf/ac/yr productivity of the soils determined.

The methodology used by the applicant's consulting forester does not meet ODF standards. The applicant's forestry consultant has not used ODF-approved methodology to determine forest capability for unrated soils. The Department of Forestry states that the methodology it approves to determine the productivity of an area is contained in the *Field instructions for forest surveys in Washington, Oregon, and Northern California, USDA Forest Service, PNE Range and Experiment Station*[4] An independent, knowledgeable person, such as a consulting forester, must measure the trees on the property and calculate the cubic foot site class using the approved methods. Site trees must be carefully selected, and the consultant's report must provide adequate detail to determine whether the approved methods were followed. ODF approved methodology is summarized in *Land Use Planning Notes* as follows[5]:

"The methods listed in this paper can be used in combination with other published site index and yield tables is the site is not suited to one of these species. However, the use of other tables or the use of other species to determine site index must be approved by the Department of Forestry on a case by case basis.

"Plots must be taken to measure the productivity of each different soil type and aspect on the property. Selection of site-trees (trees selected to determine site index) is a critical part of accurately determining the productivity of the land. To be used, site-trees must have remained in a dominant or co-dominant position throughout their life. * * * If insufficient dominant trees exist on the property to determine the site index, site-trees may be selected from adjacent properties with the same aspect, elevation, and soil type.

"If no trees are available for site index calculations, or if the site index cannot be determined accurately from the existing timber in the area, then soil survey methodology will be required to accurately assess the site productivity. To map the area and provide site specific data that is more accurate than the USDA Soil Survey will require the landowner to employ a soil scientist to do a higher intensity soil survey. The qualifications and procedures for conducting such a survey are contained

[4] *Land Use Planning Notes,* Number 3, April 1, 1998, p. 4. See Exhibit 3.
[5] *Land Use Planning Notes,* pp. 4-7.

in OAR 603-80-0040(3). This survey must provide detailed information on the soil types represented on the property.[6]

The applicant's attorney argues that Goal 4 and its implementing administrative rules found in OAR 660 Division 6 do not apply to the subject property because the subject property was not acknowledged as forest land on the date Goal 4 was amended, but rather was acknowledged as agricultural land.

The Goal 4 definition of forest land provides:

> "Forest lands are those lands acknowledged as forest lands as of the date of adoption of this goal amendment. Where a plan is not acknowledged *or a plan amendment involving forest lands is proposed, forest lands shall include lands which are suitable for commercial forest uses including adjacent or nearby lands which are necessary to permit forest operations or practices and other forested lands that maintain soil, air, water and fish and wildlife resources.*"

The fact that the county designated the subject property agricultural and place it in an EFU zone does not mean that Goal 4 does not apply to the property. Counties may choose whether to designate land EFU of Forest, where both may be appropriate. "Forest lands," as that term is used in Goal 4, are not limited to lands that have been acknowledged as forest lands. *Dept. of Transportation v. Coos County*, 35 Or LUBA 285 (1998).

Because the applicant's forest consultant does not provide any forest productivity data for soils not rated by the NRCS, there is not substantial evidence in the record upon which to base any determination of potential average annual income over the growth cycle.

b. The use of a 50-year growth cycle has not been justified and is not appropriate.

The applicant uses a 50-year growth cycle to calculate average gross annual income over the growth cycle. This is predicated on the Board's Direction on Issue 5: "What 'growth cycle' should be used to calculate gross annual income?" in its March 1997 *Supplement to Marginal Lands Information Sheet.* No Lane County interpretation or application of ORS 197.247 or any of its terms or concepts will be due or receive any deference upon review. *Marquam Farms Corp. v. Multnomah County*, 35 Or LUBA 392, 403 (1999) (ORS 197.829 does not require that LUBA defer to county interpretations of state statutes).

LUBA has explained that the choice of the phrase "capable of producing" in ORS 197.247(1)(a) requires "reasonable management practices over the growth cycle":

> "[T]he choice of the word "capable" requires the application of an objective test in determining a parcel's potential productivity. In other words, that a particular forest operator may use poor management techniques, and thereby cannot produce the requisite income from the parcel over the growth cycle, would not establish that the parcel was not "capable" of producing the requisite income level over the growth

[6] *Land Use Planning Notes,* p. 5

> cycle. The statutory requirement that the land be "capable" of producing the specified annual income "over the growth cycle" requires an evaluation of the income potential of the property *assuming the utilization of reasonable forest management practices over the growth cycle*." (Emphasis added). *DLCD v. Lane County (Ericsson)*, 23 Or LUBA 33, 36.

Reasonable forest management practices over the growth cycle would include choosing an appropriate growth cycle – one that would result in the highest average annual income over the growth cycle. The applicant and his representatives and experts have not argued that using a 50-year growth cycle reflects reasonable forest management practices. Rather, they rely entirely on the Board's 1997 directive.

The applicant's forestry consultant, in a related case involving an adjacent property with similar soils and characteristics, has produced reports finding that the use of a 60-year growth cycle would result in a 27.2% higher average gross annual income over the growth cycle than would the use of a 50-yr growth cycle.[7] The applicant's forestry consultant has failed to explain why using a management practice that would result in substantially less income could be considered reasonable. The evidence establishes that it is not.

c. The use of 1983 prices has not been justified and is not appropriate.

In *DLCD v. Lane County (Ericcson)*, 23 Or LUBA 33, 36 (1992), LUBA explained how the forest income test is to be applied:

> "ORS 197.247(1)(a) requires a two part inquiry to determine whether a forest parcel may be designated as "marginal" land. First, the county must determine whether the land was managed as part of a forest operation during three of the five years from 1978 through 1982. * * * Second, ORS 197.247(1)(a) requires the county to determine whether the forest operation in question *is* capable of producing an average of $10,000 in annual gross income over the growth cycle. What occurred on the subject parcel during the 1978-1982 time period is not the sole determinant of the "capability" of the subject parcel to produce trees, because the growth cycle of trees may greatly exceed the specified five year period." (Emphasis added.)

Thus LUBA has held that, for purposes of calculating income, it did not make sense to limit the inquiry to the 1978-1982 period. While not directly addressing the issue of what prices must be used in calculating income, the logic of LUBA's reasoning would require that pricing over the growth cycle be used. The use of the word "is" suggests that current is to be considered, as well as future pricing to the extent foreseeable. After all, pricing is only relevant at the end of the growth cycle when timber is harvested and sold. In *Ericcson*, Lane County made its decision based on current prices, not 1983 prices. LUBA found that methodology acceptable and affirmed the county's decision.

Current timber prices are substantially higher than 1983 prices, as timber prices throughout the mid-1980s were at historic lows. As seen in Exhibit 6, current prices for the three grades used

[7] Compare Exhibit 4, a calculation of average gross annual income over a 50-year cycle, with Exhibit 5, a calculation of average gross annual income for the identical property over a 60-year cycle.

in the applicant's consulting forester's calculations are 2.41, 2.72, and 2.70 times higher than 1983 prices. Using current pricing would result in an average annual gross income substantially exceeding the $10,000 threshold to qualify as marginal land.

Alternatively, averaging timber prices over the appropriate growth cycle might be acceptable. However, reasonable forest management practices include delaying timber harvest when prices are low, and increasing the rate of harvest when prices are high. Therefore using average prices may underestimate actual prices received, as forest managers respond to price signals in their harvesting practices. The average price for grade 2S over the 22 years from 1983 to 2004 was $501, or nearly twice the 1983 price. Recall that Exhibit 6 shows that the increase in price for 3S and 4S was greater than that for 2S. Using an average price over the period rather than the 1983 price used by the applicant's consulting forester would also result in an average annual gross income substantially exceeding the $10,000 threshold to qualify as marginal land.

These results do not account for the potential productivity from land not considered by the applicant's consulting forester because it was assumed to have zero productivity or for potential productivity from land for which the applicant's consulting forester's data is not acceptable; and do not consider that using a 60-year growth cycle rather than a 50-year growth cycle would increase average income by an additional 27.2%.

III. CONCLUSION

The applicant's consulting forester has not provided substantial evidence to establish forest productivity for soils not given a productivity rating for forestry in available NRCS data. The applicant has not established that the methodology used to generate alternative data is accepted or approved by the Department of Forestry.

The applicant's consulting forester has failed to assume reasonable forest management in relying on a 50-year growth cycle.

In calculating potential income over the growth cycle, the applicant has failed to consider pricing over the growth cycle, using neither current pricing, average pricing, or methodology to take into account how timber harvesting is responsive to price signals.

For these reasons, the applicant's consulting forester's methodology does not comply with applicable law, and his conclusion that the average gross income over the growth cycle would be below $10,000 is not supported by substantial evidence in the record.

The requirements of ORS 197.247 have not been met and the request to redesignate the subject parcel from Forest Land to Marginal Land and rezone it from F-2 to ML cannot be approved.

GOAL ONE COALITION

Respectfully submitted,

Jim Just
Executive Director

EXHIBIT 1

NEIL GOLDSCHMIDT
GOVERNOR

Forestry Department

OFFICE OF STATE FORESTER

2600 STATE STREET, SALEM, OREGON 97310 PHONE 378-2560

January 27, 1989

Craig Greenleaf, Acting Director
Department of Land Conservation and Development
1175 Court St. NE
Salem OR 97310

Dear Craig,

This transmits forest soil rating data that superceeds data previously sent to your Department by Forestry in July 1988.

During the past 2 years, a major part of our effort in Secondary Lands has been in helping to identify those forest soils with low and medium productivity potentials (those soils that are, from a forest productivity standpoint, suited to be included with "secondary" lands).

As agreed, we have made detailed examinations of the information available to us from the SCS, and applied the expertise of our staff professionals. As a result of those additional examinations, enclosed is our final listing of those soils for all counties from Lane County north and west, and including Hood River County.

Note that the listing shows the SCS soil survey mapping unit numbers as contained in the applicable published soil survey, followed by the soil map unit name, this department's rating of forest productivity for that soil, and the acreage for that mapping unit from the SCS published soil survey. These ratings generally group those soils capable of forest productivities above 85 cubic feet per acre per year (at culmination of mean annual increment) into the "High" rating, those from 50-85 cubic feet per acre per year into the "Medium" rating, and from 20-50 cubic feet per acre per year into the "Low" rating. We have incorporated deductions for inclusions of soils of lower, and/or of higher productivity into our ratings. We also show, where available, the Site Index (height growth indicator) as presented in the SCS published soil survey, and the computed productivity in cubic feet per acre per year where that appears in published SCS data for that soil.

Note also that we have grouped the soil mapping units into groupings, based on the forest productivity rating alone. Where insufficient information is given (or where insufficient use of the soil mapping unit for forestry exists) on which to base a forestry productivity rating, we have assigned numerical ratings based on our professional judgement, based also on previous input from Jerry Latshaw (SCS) and Herb Huddleston (OSU Extension). In these latter instances, "1" means High productivity is indicated; "2" indicates Medium; "3" indicates Low.

The listing also includes "estimated" productivity ratings based upon the vegetational characteristics and certain soil factors as they appear in SCS published data. We base these estimates on our knowledge of plant ecological relationships and on comparisons with other soils on which SCS has published more complete data.

Note that for Tillamook and Lincoln Counties, less-precise data is available from SCS. Therefore, the information provided may be of lesser utility. Note also that our field organization's work priorities would not permit our making field investigations, nor utilizing their experience in refining productivity estimates as I would have preferred to do.

I hope that this work is of use to you and to the Commission. We will continue to examine the ratings for other counties and to complete that work as soon as possible.

Sincerely,

Dave

Dave Stere
Forest Resources Planning Director

DHS DS-47

cc: Bob Madsen
Ron Eber
Jerry Latschaw
Herb Huddleston

Attachments
13 county forest soil rating lists

ds-47a 1-11-88

LANE COUNTY - FOREST SOILS RATINGS

SCS #	SCS Name	(Site Index) Rating		SCS Acreage	Cuft/Ac per yr
004G	Atring-Rock Outcrop Complex, 30-60%	Med	120	1140	86
005	Awbrig sicl	3		9890	est 40
006	Awbrig Urban Land complex	3		350	est 20
008	Bashaw c	3		9650	est 30
009	Bashaw-Urban Land complex	3		350	est 20
010	Beaches	3		1000	
017	Brallier muck, drained	3		1160	
018	Brallier muck, tidal	3		930	
019	Brenner sicl	3		860	
021B	Bullards-Ferrelo loams, 0-7%	Med	144	510	150
021C	Bullards-Ferrelo loams, 7-12%	Med	144	1560	150
021E	Bullards-Ferrelo loams, 12-30%	Med	144	1210	150
021G	Bullards-Ferrelo loams, 30-60%	Med	144	850	150
022	Camas gr sl, occ flooded	3		6370	est 40
023	Camas-Urban land complex	3		600	est 20
028C	Chehulpum sil, 3-12%	3		1970	est 40
028E	Chehulpum sil, 12-40%	3		440	est 40
033	Conser sicl	3		4200	est 50
034	Courtney gr sicl	3		2920	est 40
038	Dayton, sil, clay sub	3		4280	est 40
042E	Dixonville-Hazelair-Urban Land, 12-35%	Low		640	est 35
043C	Dixonville-Philomath-Hazelair, 3-12%	Med		11480	est 62
043E	Dixonville-Philomath-Hazelair, 12-35%	Med		22990	est 68
044	Dune Land	3		5870	
045C	Dupee sil, 3-20%	Med		20190	est 70
048	Fluvents, Nearly Level	3		9550	
052B	Hazelair sicl, 2-7%	Low		5680	est 40
052D	Hazelair, 7-20%	Low		41510	est 40
053	Heceta fs	3		2010	est 20
073	Linslaw l	2		5700	est 80
075	Malabon sicl	2		15350	est 65
076	Malabon-Urban land complex	2		6420	est 50
077B	Marcola cob sicl, 2-7%	Med		690	est 70
085	Natroy sicl	3		15170	est 60
086	Natroy sic	3		2100	est 60
087	Natroy-Urban Land Complex	3		610	est 40
094C	Netarts fs, 3-12%	Med	80	1060	58
094E	Netarts fs, 12-30%	Med	80	420	58
098	Noti l	3		3860	est 30
100	Oxley gr sil	2		2010	est 80
101	Oxley-Urban land complex	2		870	est 60
102C	Panther sicl, 2-12%	3		8400	est 50
103C	Panther-Urban Land complex, 2-12%	3		440	est 40
105A	Pengra sil, 1-4%	3		5070	est 50
106A	Pengra-Urban land complex, 1-4%	3		780	est 30
107C	Philomath sic, 3-12%	Low		2280	est 50
108C	Philomath cob sic, 3-12%	Low		2280	est 50
108F	Philomath cob sic, 12-45%	Low		7090	est 50
109F	Philomath-Urban land complex, 12-45%	Low		270	est 20

110	Pits	3		700	
114	Riverwash	3		2050	
115H	Rock Outcrop-Kilchis complex, 30-90%	Low		3950	34
116G	Rock Outcrop-Witzel complex, 10-70%	Low		1480	21
125C	Steiwer l, 3-12%	Low		2790	est 30
125D	Steiwer l, 12-20%	Low		1000	est 30
125F	Steiwer l, 20-50%	Low		1240	est 30
127C	Urban Land-Hazelair-Dixonville, 3-12%	Low		1450	est 45
130	Waldo sicl	3		7550	est 50
131C	Waldport fs, 0-12%	Low	92	1700	29
131E	Waldport fs, 12-30%	Low	92	1000	29
131G	Waldport fs, 30-70%	Low	92	650	29
132E	Waldport fs, thin surf., 0-30%	Low	92	2110	29
133C	Waldport-Urban Land Complex, 0-12%	Low		250	est 20
136	Willanch fsl	3		870	est 40
137F	Winberry v gr l, 10-45%	Low	70	560	48
138E	Witzel v cob l, 3-30%	Med	90	5780	70
138G	Witzel v cob l, 30-75%	Med	90	5520	70
141	Yaquina-Urban land complex	3		260	est 50
142G	Yellowstone-Rock Outcrop, 10-60%	Low	86	1560	38

Total - LOW & MEDIUM ratings -- 293,500 acres

001A	Abiqua sicl, 0-3%	High	152	5210	161
001B	Abiqua sicl, 3-5%	High	152	1230	161
002E	Astoria sil, 5-30%	High	170	3380	181
003E	Astoria Variant sil, 3-30%	High	170	200	181
003G	Astoria Variant sil, 30-60%	High	170	1500	181
007B	Bandon sl, 0-7%	High	138	240	142
007C	Bandon sl, 7-12%	High	138	220	142
007F	Bandon sl, 12-50%	High	138	270	142
011C	Bellpine sicl, 3-12%	High	155	15950	164
011D	Bellpine sicl, 12-20%	High	155	58600	164
011E	Bellpine sicl, 20-30%	High	155	38100	164
011F	Bellpine sicl, 30-50%	High	155	27100	164
012E	Bellpine cob sicl, 2-30%	High	155	4230	164
013F	Blachly cl, 30-50%	High	148	13400	156
013G	Blachly cl, 50-70%	High	148	2960	176
014E	Blachly sicl, 3-30%	High	165	7030	176
014F	Blachly sicl, 30-50%	High	165	8520	176
015E	Blachly-McCully cls, 3-30%	High	147	23000	155
016D	Bohannon gr l, 3-25%	High	155	15800	164
016F	Bohannon gr l, 25-50%	High	155	27770	164
016H	Bohannon gr l, 50-90%	High	155	92000	164
020B	Briedwell cob l, 0-7%	High	135	1780	138
024	Chapman l	1		3800	est 140
025	Chapman-Urban land complex	1		1070	est 100
026	Chehalis sicl, occ flooded	1		9300	est 100
027	Chehalis-Urban land complex	1		700	est 90
029	Cloquato sil	1		5170	est 120
030	Cloquato-Urban land complex	1		230	est 100
031	Coburg sicl	1		13480	est 100
032	Coburg-Urban land complex	1		2740	est*90
035D	Crusier gr cl, 3-25%	High	135	2670	138
035F	Crusier gr cl, 25-50%	High	135	1710	138

035G	Cruiser gr cl, 35-70%	High	135	360		138
036D	Cumley sicl, 2-20%	High	154	34000		163
037C	Cupola cob l, 3-12%	High	124	2530		121
037E	Cupola cob l, 12-30%	High	124	1110		121
039E	Digger gr l, 10-30%	High	145	970		152
039F	Digger gr l, 30-50%	High	145	3730		152
040H	Digger-Rock outcrop complex, 50-85%	High	145	62140		114
041C	Dixonville sicl, 3-12%	High	120	3360		115
041E	Dixonville sicl, 12-30%	High	120	3670		115
041F	Dixonville sicl, 30-50%	High	120	3280		115
046	Eilertsen sil	High	159	1580		169
047E	Fendall sil, 3-30%	High	150	720		158
049E	Formander l, 3-30%	High	162	4690		172
049G	Formander l, 30-60%	High	162	5130		172
050G	Formander-Hembre-Klicitat, 50-80%	High	165	24510		170
051B	Haflinger-Jimbo complex, 0-5%	High	159	1990		161
054D	Hembre sil, 5-25%	High	170	650		181
054G	Hembre sil, 25-60%	High	170	1030		181
055E	Hembre-Klickitat complex, 3-30%	High		1920		170
055G	Hembre-Klickitat complex, 30-60%	High		1760		168
056	Holcomb sicl	1		1560	est	100
057D	Holderman ext cob l, 5-25%	High	120	490		98
057F	Holderman ext cob l, 25-50%	High	120	1900		98
057G	Holderman ext cob l, 50-75%	High	120	1600		98
058D	Honeygrove sicl, 3-25%	High	165	31050		176
058F	Honeygrove sicl, 25-50%	High	165	10430		176
059E	Hullt l, 2-30%	High	165	480		176
059G	Hullt l, 30-60%	High	165	400		176
060D	Hummington gr l, 5-25%	High	145	840		152
060F	Hummington gr l, 25-50%	High	145	1620		152
060G	Hummington gr l, 50-75%	High	145	7530		152
061	Jimbo sil	High	162	2550		173
062B	Jimbo-Haflinger complex, 0-5%	High		590		167
063C	Jory sicl, 2-12%	High	155	4560		164
063D	Jory sicl, 12-20%	High	155	6940		164
063E	Jory sicl, 20-30%	High	155	3130		164
064D	Keel cob cl, 3-25%	High	139	6390		144
064F	Keel cob cl, 35-45%	High	139	9300		144
064G	Keel cob cl, 45-75%	High	139	5060		144
065G	Kilchis st l, 30-60%	High	110	2370		98
065H	Kilchis st l, 60-90%	High	110	7920		98
066D	Kinney cob l, 3-20%	High	150	6970		158
067F	Kinney cob l, 20-50%, N	High	162	9010		172
067G	Kinney cob l, 50-70%, N	High	162	18220		172
068F	Kinney cob l, 20-50%, S	High	150	13710		164
068G	Kinney cob l, 50-70%, S	High	150	7780		164
069E	Kinney cob l, slump, 3-30%	High	168	15530		180
070E	Klickitat st l, 3-30%	High	144	10050		165
071F	Klickitat st l, 30-50%, N	High	156	8350		165
071G	Klickitat st l, 50-75%, N	High	156	37150		145
072F	Klickitat st l, 30-60%, S	High	140	25900		145
072G	Klickitat st l, 50-75%, S	High	140	68800		150
074B	Lint sil, 0-7%	High	160	1120		170
074C	Lint sil, 7-12%	High	160	1510		170
074D	Lint sil, 12-20%	High	160	1860		170
074E	Lint sil, 20-40%	High	160	1920		170

078	McAlpin sicl	High	159	11860		169
079	McBee sicl	1		5200	est	100
080F	McKully cl, 30-50%	High	162	7730		172
080G	McKully cl, 50-70%	High	162	4210		172
081D	McDuff cl, 3-25%	High	142	3010		148
081F	McDuff cl, 25-50%	High	142	3000		148
081G	McDuff cl, 50-70%	High	142	950		148
082C	Meda l, 2-12%	High	161	10650		171
083B	Minniece sicl, 0-8%	High	130	1420		129
084D	Mulkey l, 5-25%	High	143	230		224
088	Nehalem sil	High	174	5950		186
089C	Nekia sicl, 2-12%	High	151	4960		159
089D	Nikia sicl, 12-20%	High	151	15520		159
089E	Nikia sicl, 20-30%	High	151	8760		159
089F	Nikia sicl, 30-50%	High	151	7580		159
090	Nekoma sil	High	180	7170		191
091D	Neskowin sil, 12-20%	High	133	560		205
091E	Neskowin sil, 20-40%	High	133	230		205
092G	Neskowin-Salander sil, 40-60%	High	133	4350		205
093	Nestucca sil	1		5830	est	130
095	Newberg fsl	1		2970	est	150
096	Newberg l	1		4490	est	150
097	Newberg-Urban land complex	1		930	est	100
099H	Ochrepts & Umbrepts, v. steep	1		1070	est	130
104E	Peavine sicl, 3-30%	High	155	68300		164
104G	Peavine sicl, 30-60%	High	155	124810		164
111D	Preacher l, 0-25%	High	181	10950		192
111F	Preacher l, 25-50%	High	181	25600		192
112G	Preacher-Bohannon-Slickrock, 50-75%	High		113500		185
113C	Ritner cob sicl, 2-12%	High	131	2940		131
113E	Ritner cob sicl, 12-30%	High	131	14890		131
113G	Ritner cob sicl, 30-60%	High	131	21340		131
117E	Salander sil, 12-30%	High	133	770		205
118	Salem gr sil	1		7550	est	130
119	Salem-Urban land complex	1		2300	est	100
120B	Salkum sil, 2-6%	High	145	5060		151
121B	Salkum sicl, 2-8%	High	145	5160		151
121C	Salkum sicl, 8-16%	High	145	2160		151
122	Saturn cl	High	162	4210		172
123	Sifton gr l	1		650		
124D	Slickrock gr l, 3-25%	High	194	1850		203
124F	Slickrock gr l, 25-50%	High	194	1500		203
126F	Tahkenitch l, 20-45%	High	156	390		165
126G	Tahkenitch l, 45-75%	High	156	500		165
128B	Veneta l, 0-7%	High	139	11930		144
129B	Veneta Variant sil, 0-7%	High	150	1320		158
135C	Willakenzie cl, 2-12%	High	160	2500		170
135D	Willakenzie cl, 12-20%	High	160	7320		170
135E	Willakenzie cl, 20-30%	High	160	6490		170
135F	Willakenzie cl, 30-50%	High	160	10610		170
139	Woodburn sil	1		215	est	170

Total - HIGH rating -- 1,455,415 acres

EXHIBIT 2

Growth of Willamette Valley Natural Stands[1]

Soil Type	Height	Age	Site Index (50)
Bashaw silty clay loam	98	59	92
Dayton silt loam	84	42	98
Dixonville/Hazelair/Philomath	96	98	63
Dupee silt loam	110	56	101
Hazelair silty clay* loam	93	52	92
McBee silty clay loam	104	59	92
Philomath cobbly, silty clay*	87	42	104
Ritner cobbly silty clay loam	101	54	95
Salem gravelly loam	111	63	93
Waldo silty clay loam	83	41	96
Witzel very cobbly loam	92	98	59

* Indicates an average of more than one site.

[1]From Fletcher et al, *Establishing and Managing Ponderosa Pine in the Willamette Valley,* OSU Extension Service, EM 8805, May 2003, p. 12.

EXHIBIT 3

LAND USE PLANNING NOTES <<<<

NUMBER 3 X APRIL 1998

"STEWARDSHIP IN FORESTRY"

PURPOSE: This technical bulletin has been developed to help landowners and local governments when they must use an alternative to the USDA Soil Survey to determine the productivity of forestland. Under OAR 660-06-005 "where SCS data are not available or are shown to be inaccurate, an alternative method for determining productivity may be used. An alternative method must provide equivalent data and be approved by the Department of Forestry." This paper describes the methodology that the Department approves and provides guidance and other information necessary to use that methodology. We have also included some background information to answer some commonly asked questions about the cubic foot productivity class system.



Why use the average annual cubic foot production in land use decisions?

The Department of Forestry advises using the USDA Cubic Foot Productivity Class[1] system, as opposed to other systems of measure, when making land use planning decisions because it measures the relative productivity of the soil, it is not dependent upon the condition of the forest or the species of trees currently growing on the site, and it is more consistent than other measures.

The cubic foot productivity class system ranks soils based upon the mean annual increment measured in cubic feet at the point in time where the culmination of mean annual increment (maximum average annual growth) occurs. This is the average growth rate of the timber over the life of the stand measured at the peak of that average growth rate. The table below shows the potential timber yields of productivity classes 1 - 5 in cubic feet per acre per year (cuft/ac/yr).

[1]Field instructions for forest surveys in Washington, Oregon, and Northern California. USDA Forest Service, PNW Range and Experiment Station.

CUBIC FOOT PRODUCTIVITY CLASSES

CODE	POTENTIAL YIELD-MEAN ANNUAL INCREMENT
1	225 or more cuft/ac/yr
2	165 to 224 cuft/ac/yr
3	120 to 164 cuft/ac/yr
4	85 to 119 cuft/ac/yr
5	50 to 84 cuft/ac/yr

Cubic foot productivity class was developed to compare the relative productivity of different soils. Other measures which might be used to compare different parcels, such as site class or site index, are not consistent between species and authors. Site class is commonly used on the west side to describe the productivity of Douglas-fir forests, but site class is only used for Douglas-fir and not for other species. Site index is calculated as tree height divided by tree age at a base age of 100 or 50. Since on the same area, in the same length of time, different species grow to different heights, site index is not consistent between species.

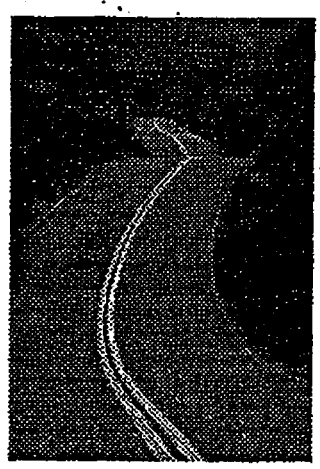
For example cubic foot productivity class III can produce between 120 and 164 cubic feet per acre per year from a fully stocked natural stand. In the next column is a comparison with several species and site indexes.

CUBIC FOOT PRODUCTIVITY CLASS 3 (120 - 164 cuft/ac/yr)

Site Index Equal to Productivity Class III

Douglas-fir	
(100 yr Site Index)	130 - 160
Western Hemlock	
(100 yr Site Index)	100 - 110
Ponderosa Pine	
(100 yr Site Index)	120 - 130
White Fir	
(50 yr Site Index)	60 - 70
Engelmann Spruce	
(50 year Site Index)	80 - 90

Another advantage of using cubic foot productivity class is that the ratings are available for most forestland without professional assistance. The published soil surveys contain a rating which can be used by county planners or private landowners to rate productivity and using the information does not require visiting the site or taking measurements.



Why don't we use board feet instead of cubic feet?

Cubic foot volume is a form of measurement commonly used in forestry research and forest management planning. It is a physical measurement based upon the actual volume of wood. On the other hand, board foot volume is based upon a series of rules. The board foot rules were developed to try to determine the amount of lumber which could be sawed (at that time) from a range of different diameter logs. Although its predictive abilities are out of date (1 board foot of log now produces from 1.7 - 2 board feet of lumber), board foot rules continue to be the most common measure used to buy and sell logs in the Northwest. The problem with converting cubic feet to board feet is that the conversion factor is not a constant. Because board foot volume is determined by a rule, one cubic foot of wood from a log with a scaling diameter (small end diameter) of 6 inches contains 3.32 board feet, while one cubic foot of wood from a log with a scaling diameter (small end diameter) of 30 inches contains 6.86 board feet. Therefore as the average diameter of a stand increases in size, the board foot/cubic foot ratio of the stand also increases. To complicate matters further, the length of the logs cut from the tree effects the conversion from cubic feet to board feet. Since trees are tapered and board foot is measured from the small end of the log, cutting the tree into different length logs changes the number of board feet contained in the tree. Because of this difference, the exact number of board feet contained in a stand of timber cannot be determined without knowing how the trees will be bucked into logs.

Because the board feet contained in a stand of timber depends on the average diameter of the stand and the way the trees are bucked into logs, the ratio of board feet to cubic feet is not constant. Comparisons such as soil productivity are much easier to make based upon a constant volume measure such as cubic feet. That is why it is more commonly used in the more technical forestry applications.

General Procedures to Challenge the Site Productivity Listed in the Soil Survey

Before deciding to use an alternative method of measuring the productivity of forestland, documentation should be produced showing that an attempt has been made to use the soil survey and either the soil(s) in question have no rating, or reasons exist indicating that the soil survey may be inaccurate. Where either of these two circumstances exist, a soil scientist from the USDA Natural Resource Conservation Service (NRCS, formerly SCS) should be contacted.

In many cases soils that are primarily used for agriculture were not given ratings for forestry. However, this does not mean they are not capable of growing trees. On the contrary, they may be highly productive, and a NRCS soil scientist may be able to provide a rating of that soil's forest capability. An NRCS soil scientist should also be able to advise you about the procedures used to conduct the soil survey and the accuracy of that survey as it relates to the property and soils in question. The advice received may save both the land owner and local official time and money.

Because the soil survey is not site specific information, The Department of Forestry has agreed to approve methods that would allow a land owner to use site specific information to determine the productivity of the land when applying for a dwelling or other land use decision.

The process should work something like this:

1. The Department of Forestry has approved a methodology for calculating site productivity (the details are described below in this document). When the landowner contacts the county with concerns about the productivity rating of their property, they are provided with information about the required methodology.

2. The landowner must have an independent, knowledgeable person, like a consulting forester, measure the trees on the property and calculate the cubic foot site class using the approved methods. Plots must be taken to measure the productivity of each different soil type and aspect on the property. The consultant must use care when selecting site trees to obtain an accurate measurement, and the consultant's report must provide adequate detail to determine whether the approved methods were followed.

3. The consultant shall provide a copy of the report to the county to use in making land use decisions. If the county has questions about whether the consultant followed the methodology, the Department of Forestry may need to review the report. However, because this is a land use decision, the county must make the final decision to accept or reject the work of the consultant.

Methodology Approved by the Department of Forestry for Calculating Site Productivity

The Department of Forestry does not measure sites for landowners. The landowner needs to have an independent qualified person, such as a consulting forester, take the measurements and calculate the cubic foot site class. The methodology the Department of Forestry approves to determine the productivity of an area is contained in the *Field instructions for forest surveys in Washington, Oregon, and Northern California. USDA Forest Service, PNW Range and Experiment Station.* Equivalent published methodology is more widely available from a Weyerhaeuser research paper, by King[2]. These papers describe how to select site-trees and calculate site index. A second paper, from the US Department of Agriculture[3], uses site index information

[2]King, James E. 1966. Site index curves for Douglas-fir in the Pacific Northwest. Weyerhaeuser Forestry Paper No. 8. Weyerhaeuser Forestry Research Center, Centralia, WA.

[3]USDA. 1986. Culmination of mean annual increment for commercial forest trees of Oregon.

(continued on next page)

as determined from on-site measurements to reference a set of cubic foot productivity tables. We approve this method because it is based on site specific measurements and it will produce results that are consistent with the Soil Survey.

A summary of the methodology and the necessary tables to calculate site class for the three most common forest types are included below. The methods listed in this paper can be used in combination with other published site index and yield tables if the site is not suited to one of these species. However, the use of other tables or the use of other species to determine site index must be approved by the Department of Forestry on a case by case basis.

Plots must be taken to measure the productivity of each different soil type and aspect on the property. Selection of site-trees (trees selected to determine site index) is a critical part of accurately determining the productivity of the land. To be used, site-trees must have remained in a dominant or co-dominant position throughout their life. If the land has been selectively harvested in the past, most or all of the dominant trees in the stand may have been removed. Basing site index calculations on the remaining trees, grown in lower crown positions, will not accurately measure site productivity. In some cases it may be difficult to find enough site trees on the property to accurately determine productivity. If insufficient dominant trees exist on the property to determine the site index, site-trees may be selected from adjacent properties with the same aspect, elevation, and soil type.

If the parcel is a forest site and no trees are available for site index calculations, or if the site index cannot be determined accurately from the existing timber in the area, then soil survey methodology will be required to accurately assess the site productivity. To map the area and provide site specific data that is more accurate than the USDA Soil Survey will require the landowner to employ a soil scientist to do a higher intensity soil survey. The qualifications and procedures for conducting such a survey are contained in OAR 603-80-0040 (3). This survey must provide detailed information on the soil types represented on the property.

General Rules for Selecting Site Trees

1. If possible, use the species that dominates the area. Height from 15 to 20 dominant and co-dominant trees and age counts on about 10 trees should be sufficient to determine site index if the area is homogeneous. Additional plots will need to be taken to represent different soil types and aspects across the property.

2. You may select site trees of different species as long as they use the same site table.

Technical Note No. 2. USDA, Soil Conservation Service, Portland, OR. (Note: the SCS - Soil Conservation Service is now the NRCS - Natural Resource Conservation Service)

3. Site index should not vary by more than 20 or 30 between site trees (as indicated on each site table), unless the difference can be explained by actual site variation. Use the site index tables below to compare site measurements.

4. If you select Douglas-fir or grand fir site trees use the site tree selection method for King's Douglas-fir table, outlined below. For other site tree species, use the site tree selection criteria for other species.

Method for Selecting Site Trees for King's Site Index Table
(Use for Douglas-fir and grand fir)

1. Within the plot area, locate an approximately circular area that encompasses 25 trees (the "site index clump") and that is representative of the site being sampled. When there is a choice, favor well-stocked areas over sparse areas. When counting trees, include only Douglas-fir with normally-formed tops; do not include understory trees that are both younger and shorter than the general crown canopy.

2. Of these 25 trees, select the 5 with the largest dbh as site trees.

3. Any site tree with a clear history of suppression should be rejected, and the next largest tree selected if it is suitable. However, you may select a suppressed tree over a shorter, suppression-free tree of the same age.

4. If a 25-tree clump is not available, a smaller clump may be used. You should still limit the site tree subsample to the 1/5 of the trees in the clump with the largest dbh **unless** this gives you less than three site trees.

Method for Selecting Site Trees for Other Site Index Tables

1. Select trees that are or have been free from suppression for their entire lives. A tree that has been suppressed will have closely-spaced annual growth rings on all or part of its increment core.

2. Select dominant trees.

3. Trees less than 50 years old are undesirable if older trees are available. For ponderosa pine, trees 60 to 120 years old are most desirable.

4. Site trees should be evenly distributed across the plot area.

5. Select trees that show no signs of top-out, such as crooks or forks, **unless** these trees are taller than normally-formed trees of the same dbh.

6. If no suitable site trees are available from the property, select dominant trees from a nearby area with the same general aspect, elevation, and soil type. Note the location of the site trees in your report.

Site Tables:

Depending on the species of site tree selected, use the appropriate table to determine site index.

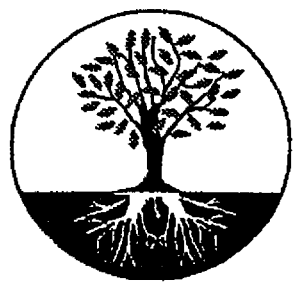
1. King's Douglas-fir table. Use for Douglas-fir and grand fir.

2. Barnes western hemlock table. Use for western hemlock and Sitka spruce.

3. Meyer's ponderosa pine table. Use for ponderosa pine and Jeffrey pine. Use this table when in stands that are predominantly pine, or when pine site trees are all that are available (except in the Willamette Valley).

How to use site tables:

The following site index tables are "upper limit tables." This means that when a tree height indicates a site index that falls between two site indices listed you should use the higher one. Example: Site tree is Douglas-fir, 75 years old at breast height, 115 feet tall. King's Douglas-fir site index table indicates that a height of 115 feet at age 75 falls between site index 80 and 90. Site index is therefore 90.



Published by:

Oregon Department of Forestry
Resource Planning Office
2600 State Street
Salem, Oregon 97310

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rec'd on 1-23-01
from Brad Ogle
-per M.E. Ogle - revised
to reflect 50-yr cycle.

EXHIBIT 4
50-yr cycle

FOREST PRODUCTIVITY ANALYSIS
for
Brad Ogle and Mark Childs

SUBJECT PARCEL: ASSESSORS MAP NO. 18-04-11
Tax Lots 303 & 304, totalling ±113.76 acres.

I. INTRODUCTION

An evaluation of the site, as described above, from a timber productivity and income producing standpoint is reviewed in this analysis. The analysis will determine if:

1) The subject property produces less than 85 cu. ft./ac./yr. of conifer timber volume. This has been determined by Lane County to be the measuring parameter for marginal soils.
2) The income generated averages less than $10,000/year, based on 1978 through 1983 log prices. If this is the case, the property meets the following statutory test for Marginal Lands: ORS 197.247 (1)(a) "The proposed marginal land was not managed during three of the five calendar years preceding January 1, 1983, as part of a ... forest operation capable of producing an average, over the growth cycle, of $10,000 in annual gross income."

The above figures can be calculated by:
1. Using actual cutout data from when any logging was done on the parcel.
2. Using a combination of the 1) Lane County Soil Ratings for Forestry & Agriculture (August, 1997), 2) U.S. Dept. of Agriculture SCS Data, as presented in the Soil Survey of Lane County Area, 3) Lane County Soil Ratings taken from the Office of the State Forester Memorandum (Feb. 8, 1990 General File 7-1-1) and 4) estimates of growth from the CMAI (Culmination of Mean Annual Increment) FOR DOUGLAS-FIR Table and the Empirical Yield Tables for the Douglas-fir Zone, Washington Department of Natural Resources by Charles Chambers and Franklin Wilson.

II. SITE INFORMATION

The subject parcel is 113.74 acres in size, with 11.8 acres in B.P.A. easement corridors (see Exhibit 1). The site aspect is south to southwest with slopes of 10-45%. Grasses, blackberry, poison oak and scrub white oak cover most of the property, with exposed bedrock, broken rock and cobbly soils prevalent throughout the parcel. There are also scattered Douglas-fir, ponderosa pine and incense cedar, left from previous logging activities. An LCOG soil survey confirms SCS map data, which shows the parcel is composed of seven different soil types (see Exhibits 2 and 3). Over half of the property (≈69.8 acres) is underlaid with Philomath silty clay (Soil Type 107C) and Philomath cobbly silty clay (Soil Type 108F). These soil types are extremely poor for growing conifers. The remaining portions of the parcel are underlaid with Dixonville-Philomath-Hazelair complex (Soil Types 43C and E), McDuff clay loam (Soil Type 81D), Panther silty clay loam (Soil Type 102C). Ritner cobbly silty clay loam (Soil Types 113C, E and G) and Steiwer loam (Soil Type 125C). Of these soil types, only the McDuff clay loam and Ritner cobbly silty clay loam are good soils for growing conifer, and these particular soil types only cover approximately 19 acres of the entire parcel.

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The Lane County Soil Ratings for Forestry and Agriculture (see Exhibit 4) show a 100 year site class rating for only two of these soil types, the McDuff clay loam and the Ritner cobbly silty clay loam. A cu.ft./ac./yr. figure is also shown for these two soil types; only a cu.ft./ac./yr. figure is shown for the Dixonville-Philomath-Hazelair complex, it doea not have a site class rating. The remaining soil types are very poor conifer growing soils and are not assigned any forestland site class rating, in the Lane County Soil Ratings. The cu.ft./ac./yr. growth, for these soil types, was obtained from the soil ratings shown in the Office of the State Forester Memorandum (see Exhibit 5). All of these soils are incapable of producing 85 cu.ft./ac./yr., the parameter used by Lane County for determining marginal soils.

III. RESULTS OF PRODUCTIVITY AND INCOME CALCULATIONS

CUBIC FEET PER YEAR PER ACRE GROWTH

The parcel was logged over the last ten years, before the current owners purchased the property. They have no records of the amount of timber removed. Therefore, the calculations of growth were taken from the tables cited above and the potential income calculated from theses figures. In order to obtain a yearly growth figure, in cu.ft./ac. for the entire parcel, the production potential of the different soil types was first calculated for the acres within each soil type. This will give a weighted figure for each soil type and can then be divided by the total acres for an overall average. These calculations are shown below.

Soil Type	Acres	Cu.Ft./Ac./Yr.	ΣCu.Ft.
43C Dixonville-Philomath-Hazelair complex	6.64	54 Cu.Ft./Ac.	358.56 Cu.Ft.
43E Dixonville-Philomath-Hazelair complex	.44	63 Cu.Ft./Ac.	27.72 Cu.Ft.
81D McDuff clay loam	5.60	158 Cu.Ft./Ac.	884.80 Cu.Ft.
102C Panther silty clay loam	14.68	45 Cu.Ft./Ac.	660.60 Cu.Ft.
107C Philomath silty clay	39.61	45 Cu.Ft./Ac.	1,782.45 Cu.Ft.
108F Philomath cobbly silty clay	30.20	45 Cu.Ft./Ac.	1,359.00 Cu.Ft.
113C, E & G Ritner cobbly silty clay loam	13.38	149 Cu.Ft./Ac.	1,993.62 Cu.Ft.
125C Steiwer loam	3.19	30 Cu.Ft./Ac.	95.7 Cu.Ft.
Totals	113.74		7,162.45 Cu.Ft.

Average Growth Potential — 113.74 Acres ÷ 7,162.45 Cu.Ft. = 62.97 Cu.Ft./Ac./Yr.

AVERAGE GROSS ANNUAL INCOME GENERATED PER YEAR THROUGH A COMPLETE ROTATION

Since no cutout records are available, the Empirical Yield Tables were used to obtain total volume per acre in scribner board feet volume, the measurement needed in order to calculate income potential. These yield tables are calculated using King's 50 year site class index. Since the Lane County Soil Ratings for Forestry and Agriculture are based on McArdle's 100 year site index rating, these ratings must be converted first. Using the 50 year Site Index ratings, for each different soil type, the volume per acre for each soil type can be calculated. Adding all the soil types together will give a total for the entire parcel. A fifty year rotation (growth cycle to final harvest) was used. This time span was adopted as the standard, by a consensus of the Board of Commissioners in March 1997, and is included in the Supplement to the Marginal Lands Information Sheet.

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Once a total volume at harvest age has been calculated, the average gross annual income can be found by dividing the total revenue at the time of harvest by the number of years in the rotation. Since the Empirical Yield Tables are based on Douglas-fir volumes, Douglas-fir log prices were used. This should also give the highest figure because Ponderosa pine has never been worth as much as Douglas-fir and incense cedar has only recently approached Douglas-fir prices.

Using industry-recognized price information from the Oregon State Department of Forestry Quarterly Report of Douglas-fir log prices for 1983, the gross worth of a fully stocked stand on this parcel can be calculated, for the time period required by the Marginal Lands Statute ORS 197.247 (1)(a). By calculating a gross worth based on a fully stocked stand of Douglas-fir, a maximum gross worth scenario for the applicant can be shown.

CALCULATIONS:

Site Index Ratings from Tables (see Exhibits 6, 7 and 8)

	100 Year Site Index	50 Year Site Index	
McDuff clay loam	112	98	112
Ritner cobbly silty clay loam	107	95	107

Dixonville-Philomath-Hazelair complex - no Site Index given due to multiple soil types
Panther silty clay loam - poorly suited for conifer growth, no Site Index given
Philomath silty clay - poorly suited for conifer growth, no Site Index given
Philomath cobbly silty clay - poorly suited for conifer growth, no Site Index given
Ritner cobbly silty clay loam - poorly suited for conifer growth, no Site Index given
Steiwer loam - poorly suited for conifer growth, no Site Index given

The soil types above which have no Site Index given were assigned a Site Index in order to obtain a growth figure from the Empirical Yield Tables. This was accomplished by comparing the Cu.Ft./Ac./Yr. figures shown in the Lane County Soil Ratings for Forestry and Agriculture or the Lane County Soil Ratings taken from the Office of the State Forester Memorandum (see calculations shown in previous section) with the Cu.Ft./Ac./Yr. figures shown in the CMAI (Culmination of Mean Annual Increment) FOR DOUGLAS-FIR Tables. From these comparisons it can be seen that the Cu.Ft./Ac./Yr. figures, for the five soil types not assigned a Site Index, do not even equal the figures shown for the lowest site class shown on the tables. Therefore, for the purposes of this analysis, the volume figures from the lowest site class shown on the tables, Site Class 70, will be used for these five soil types. This will actually show a higher volume projection than could be expected on the site, but will serve the purpose needed for this analysis. These calculations are shown below.

McDuff clay loam - 5.6 acres @ 19,019 bd.ft./ac.* =	106,506 bd.ft.
Ritner cobbly silty clay loam - 13.38 acres @ 17,591 bd.ft./ac.* =	235,368 bd.ft.
Remaining soil types - 94.76 acres @ 8,115 bd.ft./ac.* =	768,977 bd.ft.
Total	1,110,851 bd.ft.

*See Exhibit 9.

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A 50 year old stand on this site should have approximately 40% 2 SAW, 50% 3 SAW and 10% 4 SAW. If anything, these grade estimates err on the high side. In all probability there would be less 2 SAW and more 4 SAW. However, these figures are used to represent the highest possible log price scenario for the applicant.

Total Volume - 1,110.85 MBF (thousand board feet)

444.34 MBF of 2 SAW @ $255/MBF**	$113,307
555.43 MBF of 3 SAW @ $215/MBF**	119,417
111.08 MBF of 4 SAW @ $200/MBF**	22,216
Total Projected Gross Revenue	$254,940

**See Exhibit 10.

AVERAGE GROSS INCOME -- $254,940 ÷ 50 YEARS = $5,099/YEAR

IV. CONCLUSION

The analysis presented shows conclusively that this property will not support a merchantable stand of timber, of sufficient production capability, to meet or exceed the Marginal Lands Income test:

1) The subject property produces less than 85 cu. ft./ac./yr. of conifer timber volume; only 62.97 cubic feet. The above mentioned figure has been determined by Lane County to be measuring parameter for marginal soils.

2) The estimated gross income based on a 50 year rotation for the 113.74 acre site would have been $254,940 in 1983. The average annual gross income would have been $5,099/year. Because $5,099 is less than $10,000/year, the property meets the following statutory test for Marginal Lands: ORS 197.247 (1)(a) "The proposed marginal land was not managed during three of the five calendar years preceding January 1, 1983, as part of a ... forest operation capable of producing an average, over the growth cycle, of $10,000 in annual gross income."

In summary, I find from the specific site conditions present, empirical yield tables, SCS data, Lane County Data and experience with similar lands, that this property is ill suited to the production of timber and use as land for forestry purposes. It is my opinion that this parcel should be classified as marginal land.

Sincerely,

Marc E. Setchko

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EXHIBIT P
FORESTER'S REPORT

FOREST PRODUCTIVITY ANALYSIS
for
Brad Ogle and Mark Childs

60 yr. cycle

EXHIBIT 5

SUBJECT PARCEL: ASSESSORS MAP NO. 18-04-11
Tax Lots 303 & 304, totalling ±113.76 acres.

I. INTRODUCTION

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The Lane County Soil Ratings for Forestry and Agriculture (see Exhibit 4) show a 100 year site class rating for only two of these soil types, the McDuff clay loam and the Ritner cobbly silty clay loam. A cu.ft./ac./yr. figure is also shown for these two soil types; only a cu.ft./ac./yr. figure is shown for the Dixonville-Philomath-Hazelair complex, it does not have a site class rating. The remaining soil types are very poor conifer growing soils and are not assigned any forestland site class rating, in the Lane County Soil Ratings. The cu.ft./ac./yr. growth, for these soil types, was obtained from the soil ratings shown in the Office of the State Forester Memorandum (see Exhibit 5). All of these soils are incapable of producing 85 cu.ft./ac./yr., the parameter used by Lane County for determining marginal soils.

III. RESULTS OF PRODUCTIVITY AND INCOME CALCULATIONS

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Once a total volume at harvest age has been calculated, the average gross annual income can be found by dividing the total revenue at the time of harvest by the number of years in the rotation. Since the Empirical Yield Tables are based on Douglas-fir volumes, Douglas-fir log prices were used. This should also give the highest figure because Ponderosa pine has never been worth as much as Douglas-fir and incense cedar has only recently approached Douglas-fir prices.

Using industry-recognized price information from the Oregon State Department of Forestry Quarterly Report of Douglas-fir log prices for 1983, the gross worth of a fully stocked stand on this parcel can be calculated, for the time period required by the Marginal Lands Statute ORS 197.247 (1)(a). By calculating a gross worth based on a fully stocked stand of Douglas-fir, a maximum gross worth scenario for the applicant can be shown.

CALCULATIONS:

Site Index Ratings from Tables (see Exhibits 6, 7 and 8)

	100 Year Site Index	50 Year Site Index
McDuff clay loam	112	98
Ritner cobbly silty clay loam	107	95

Dixonville-Philomath-Hazelair complex - no Site Index given due to multiple soil types.

Panther silty clay loam - poorly suited for conifer growth, no Site Index given
Philomath silty clay - poorly suited for conifer growth, no Site Index given
Philomath cobbly silty clay - poorly suited for conifer growth, no Site Index given
Ritner cobbly silty clay loam - poorly suited for conifer growth, no Site Index given
Steiwer loam - poorly suited for conifer growth, no Site Index given

The soil types above which have no Site Index given were assigned a Site Index in order to obtain a growth figure from the Empirical Yield Tables. This was accomplished by comparing the Cu.Ft./Ac./Yr. figures shown in the Lane County Soil Ratings for Forestry and Agriculture or the Lane County Soil Ratings taken from the Office of the State Forester Memorandum (see calculations shown in previous section) with the Cu.Ft./Ac./Yr. figures shown in the CMAI (Culmination of Mean Annual Increment) FOR DOUGLAS-FIR Tables. From these comparisons it can be seen that the Cu.Ft./Ac./Yr. figures, for the five soil types not assigned a Site Index, do not even equal the figures shown for the lowest site class shown on the tables. Therefore, for the purposes of this analysis, the volume figures from the lowest site class shown on the tables, Site Class 70, will be used for these five soil types. This will actually show a higher volume projection than could be expected on the site, but will serve the purpose needed for this analysis. These calculations are shown below.

McDuff clay loam - 5.6 acres @ 27,953 bd.ft./ac.* =	156,537 bd.ft.
Ritner cobbly silty clay loam - 13.38 acres @ 26,012 bd.ft./ac.* =	348,041 bd.ft.
Remaining soil types - 94.76 acres @ 12,572 bd.ft./ac.* =	1,191,323 bd.ft.
Total	1,695,901 bd.ft.

*See Exhibit 9.

Marc E. Smithko
CONSULTING FORESTER

5-4

870 Fox Glenn Avenue
Eugene, Oregon 97405
Phone: (541) 344-0473
FAX: (541) 344-7791

A 60 year old stand on this site should have approximately 40% 2 SAW, 50% 3 SAW and 10% 4 SAW. If anything, these grade estimates err on the high side. In all probability there would be less 2 SAW and more 4 SAW. However, these figures are used to represent the highest possible log price scenario for the applicant.

Total Volume - 1,695.90 MBF (thousand board feet)

678.36 MBF of 2 SAW @ $255/MBF**	$172,982
847.95 MBF of 3 SAW @ $215/MBF**	182,309
169.59 MBF of 4 SAW @ $200/MBF**	33,918
Total Projected Gross Revenue	$389,209

**See Exhibit 10.

AVERAGE GROSS INCOME -- $389,209 ÷ 60 YEARS = $6,487/YEAR

IV. CONCLUSION

The analysis presented shows conclusively that this property will not support a merchantable stand of timber, of sufficient production capability, to meet or exceed the Marginal Lands Income test:

1) The subject property produces less than 85 cu. ft./ac./yr. of conifer timber volume; only 62.97 cubic feet. The above mentioned figure has been determined by Lane County to be measuring parameter for marginal soils.

2) The estimated gross income based on a 60 year rotation for the 113.74 acre site would have been $389,209 in 1983. The average annual gross income would have been $6,487/year. Because $6,487 is less than $10,000/year, the property meets the following statutory test for Marginal Lands: ORS 197.247 (1)(a) "The proposed marginal land was not managed during three of the five calendar years preceding January 1, 1983, as part of a ... forest operation capable of producing an average, over the growth cycle, of $10,000 in annual gross income."

In summary, I find from the specific site conditions present, empirical yield tables, SCS data, Lane County Data and experience with similar lands, that this property is ill suited to the production of timber and use as land for forestry purposes. It is my opinion that this parcel should be classified as marginal land.

Sincerely,

Marc E Smithko

EXHIBIT 6

Current log prices
Compared to 1983 prices for selected grades

Source:
Oregon Department of Forestry
Forest Management Division, Salem
503-945-7381
http://www.odf.state.or.us/divisions/management/asset_management/logprices/logP404.HTML

LOG PRICES
Domestically Processed Logs
(Delivered to a mill; "Pond Value")

2004 4th QUARTER

REGION 1 - NORTHWEST OREGON &
WILLAMETTE

Species & Grade	4th QUARTER 2004	Setchko	x 1983 price
Douglas-Fir	POND VALUE	1983	
1P	$ 1050		
2P	$ 925		
3P	$ 770		
SM	$ 695		
2S	$ 615	$ 255	2.41
3S	$ 585	$ 215	2.72
4S	$ 540	$ 200	2.70
3S(12"+)	$ 290		
SC	$ 235		
Utility	$ 55		

EXHIBIT 7

LOG PRICES 1983-2004[1]

Douglas Fir, grade 2S, 1st Quarter, Region 1 (Northwest Oregon & Willamette)

83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04
258	255	245	250	240	295	360	490	365	490	825	740	705	710	690	590	610	660	535	545	550	605

[1] Source: ODF Timber Sales, Log Price & Scaling Information, delivered to a mill, "pond value." http://www.odf.state.or.us/divisions/management/asset_management/LOGPPAGE.asp

Electrical Permit Application

Lane County Land Management Division – Public Works Department
125 E 8th Ave, Eugene, OR 97401 (541) 682-3823, Fax (541) 682-3947

TYPE OF WORK

☐ New construction ☐ Addition/alteration/replacement
☐ Demolition ☐ Other:

CATEGORY OF CONSTRUCTION

☐ 1- and 2-family dwelling ☐ Commercial/industrial ☐ Accessory building
☐ Multi-family ☐ Master builder ☐ Other:

JOB SITE INFORMATION AND LOCATION

Job address:

City/State/ZIP:

Suite/bldg./apt. no.: | Project name:

Directions to job site:

Subdivision: | Lot no.:

Tax map/parcel no.:

DESCRIPTION OF WORK

☐ PROPERTY OWNER | ☐ TENANT

Name:

Address:

City/State/ZIP:

Phone: | Fax:

Owner installation: This installation is being made on property that I own, which is not intended for sale, lease, rent, or exchange.

Owner signature: _____ Date: _____

CONTRACTOR

Business name:

Address:

City/State/ZIP:

Phone: | Fax:

Lic. No.: | CCB Lic. No.:

Supervising Electrician signature:

Print name: | Date:

Authorized signature:

Print name: | Date:

PAYMENT

Make check or money order payable to Lane County. If paying by credit card, applicant must sign credit card information box. Do ***not*** fax; do ***not*** send cash.

☐ Visa ☐ Mastercard | Credit card number: CSC#

Expiration date: | Amount: $

Name of cardholder as shown on credit card:

Cardholder Signature:

PLAN REVIEW

Please check all that apply:

☐ Service over 225 amps, comm'l
☐ Service over 320 amps – rating of 1- and 2-family dwellings
☐ System over 600 volts nominal
☐ Building over three stories
☐ Occupant load over 99 persons
☐ Egress/lighting plan
☐ Health-care facility
☐ Hazardous location
☐ Buildng over 10,000 sq. ft., 4 or more new residential units in one structure
☐ Feeders, 400 amps or more
☐ Manufactured structures or RV park
☐ Other:

Submit 2 sets of plans with any of the above.
The above are not applicable to temporary construction service.

FEE* SCHEDULE

Description	Qty.	Fee.	Total	**
New residential single- or multi-family dwelling unit. Includes attached garage.				
1,000 sq. ft. or less		119.00		4
Ea. add'l 500 sq. ft. or portion		21.00		
Limited energy, residential		28.00		2
Limited energy, non-residential		28.00		2
Each manufactured or modular dwelling, service and/or feeder		71.00		2
Services or feeders installation, alteration, and/or relocation				
200 amps or less		88.00		2
201 amps to 400 amps		105.00		2
401 amps to 600 amps		175.00		2
601 amps to 1,000 amps		228.00		2
Over 1,000 amps or volts		525.00		2
Reconnect only		71.00		1
Temporary services or feeders installation, alteration, and/or relocation				
200 amps or less		71.00		2
201 amps to 400 amps		90.00		2
401 amps to 600 amps		140.00		2
Branch circuits – new, alteration, or extension, per panel				
A. Fee for branch circuits *with* service or feeder fee, each branch circuit		4.00		2
B. Fee for branch circuits *without* service or feeder fee, each branch circuit		60.00		2
Each add'l branch circuit		4.00		
Miscellaneous (service or feeder not included)				
Pump or irrigation circle		71.00		2
Sign or outline lighting		71.00		2
Signal circuit(s) or limited-energy panel, alteration, or extension. Describe:		71.00		2
Each additional inspection over allowable in any of the above				
Per inspection		62.00		
Investigation fee				
Other:				
ELECTRICAL PERMIT FEES*				
Subtotal				
Plan review(25% of permit fee)				
State surcharge (8%)				
Long-Range Planning (7.5%)				
Administrative fee (15%)				
New Technology fee		10.00		
TOTAL PERMIT FEE				

This permit application expires if a permit is not obtained within 180 days after it has been accepted as complete

** Number of inspections allowed per permit.

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February 15, 2005

Lane County Planning Commission

RE: Lane County File #PA 04-6092, Dahlen; Response to Goal One Coalition Letter dated February 9, 2005

Members of the Planning Commission:

In conjunction with my Forest Productivity Analysis, completed in December, 2003, I have enclosed the following written response to a letter written by Jim Just of Goal One Coalition, dated February 9, 2005. I have addressed each issue as presented in the letter, most of which I have already addressed in my analysis. I am answering these questions as a qualified, Society of American Foresters Certified Professional Forester (#2953), with 27 years of experience including 17 years as a consultant, with Bachelor of Science (Cal Poly, SLO) and Master of Forestry (Oregon State) Degrees. As a consultant I have extensive experience in drawing up forest management plans, handling the administration of these plans and the merchandising of logs to maximize the return to my clients.

Following are responses to questions raised in Goal One Letter:

Mr. Just states (in his most recent letter, dated February 9, 2005) that my report does not contain a cf/ac/yr rating for the subject property, nor reveal how the conclusion is reached that the property cannot produce 85 cf/ac/yr of merchantable timber. Therefore, I will **repeat** what was in my **original report** and the **subsequent followup analysis,** which was presented to supplement the original report. Apparently Mr. Just did not read any of my reports.

In my original analysis I stated that the Land Management Division of Lane County had previously determined that the above described parcel does not produce more than 85 cu.ft./ac./yr., the standard used to determine if the land meets the criteria for marginal lands status (see letter to Jim Belknap from Jerry Kendall dated October 14, 2003).

Mr. Just previously asserted that just because the NRCS data has no productivity figures does not mean that productivity is zero. Several soils present on the parcel have no rating in the 1997 NRCS soils data. Therefore I used data from the Lane County "Green Sheet" and the State Forester memorandum of January 27, 1989, as well as data presented by Mr. Just to compile the following tables presented below that are in the record as attachments to my supplemental analysis of February 23, 2004.

That supplemental data was included in my response to Goal One Coalition's February 5, **2004,** letter, in which Mr. Just made all of the **same statements** he made in his February 15, **2005** letter.

All of the ratings shown below are from Exhibits previously included in my original analysis and/or responses to previous Goal One Letters. Most of these ratings have been presented **several** times. Mr. Just also states that I have only provided data for 78.561 acres. I believe he obtained this acreage from the first table shown below. This was the original table presented by Mr. Belknap in the subdivision application. In response to Goal One's assertion (in the February 5, 2004 letter) that zero cannot used, I compiled five more tables, using data from several SCS (now NRCS) soils tables.

Dec #8 - 12 pp.

Using 1997 Lane County Soil Ratings for Forestry and Agriculture (NRCS Data). This table was presented in the original subdivision application and was not prepared by me.

Soil Unit	Acres	Species	Site Index	Cf/Ac/Yr	Total Cu.Ft. Productivity
28C	79.842	DF	NA	none	0
41C	12.157	DF	109	152	1,847.864
43C	10.161	DF	NA	54	548.694
43E	28.514	DF	NA	63	1,796.382
52D	13.864	DF	NA	none	0
78	15.009	DF	NA	none	0
102C	34.574	DF	NA	none	0
105A	11.637	DF	NA	none	0
108C	9.746	DF	NA	none	0
113C	0.371	DF	107	149	55.279
125C	9.042	DF	NA	none	0
125D	3.950	DF	NA	none	0
135E	27.358	DF	110	154	4,213.132
138E	27.256	DF	NA	none	0
138G	37.011	DF	NA	none	0
	320.492				8,461.351

Total - 8,461.351 cu.ft. ÷ 320.492 ac. = 26.401 cf./ac./yr.

Using Lane County "Green Sheet" Soil Ratings (SCS Data).

Soil Unit	Acres	Species	Site Index	Cf/Ac/Yr	Total Cu.Ft. Productivity
28C	79.842	DF	NA	40	3,193.680
41C	12.157	DF	97	130	1,580.410
43C	10.161	DF	NA	45	457.245
43E	28.514	DF	NA	45	1,283.130
52D	13.864	DF	NA	40	554.560
78	15.009	DF	125	184	2,761.656
102C	34.574	DF	NA	45	1,555.830
105A	11.637	DF	NA	45	523.665
108C	9.746	DF	NA	45	438.570
113C	0.371	DF	102	140	51.940
125C	9.042	DF	NA	30	271.260
125D	3.950	DF	NA	30	118.500
135E	27.358	DF	110	154	4,213.132
138E	27.256	DF	NA	70	1,907.920
138G	37.011	DF	NA	70	2,590.770
	320.492				21,502.268

Total - 21,502.268 cu.ft. ÷ 320.492 ac. = 67.091 cf./ac./yr.

Using Office of State Forester Forest Soil Ratings Memorandum (SCS Data).

Soil Unit	Acres	Species	Site Index	Cf/Ac/Yr	Total Cu.Ft. Productivity
28C	79.842	DF	NA	40	3,193.680
41C	12.157	DF	120	115	1,398.055
43C	10.161	DF	NA	45	457.245
43E	28.514	DF	NA	45	1,283.130
52D	13.864	DF	NA	40	554.560
78	15.009	DF	159	169	2,536.521
102C	34.574	DF	NA	45	1,555.830
105A	11.637	DF	NA	45	523.665
108C	9.746	DF	NA	45	438.570
113C	0.371	DF	131	131	48.601
125C	9.042	DF	NA	30	271.260
125D	3.950	DF	NA	30	118.500
135E	27.358	DF	160	170	4,650.860
138E	27.256	DF	90	70	1,907.920
138G	37.011	DF	90	70	2,590.770
	320.492				21,529.167

Total - 21,529.167 cu.ft. ÷ 320.492 ac. = 67.175 cf./ac./yr.

Selecting the highest productivity figures from the three tables presented.

Soil Unit	Acres	Species	Site Index	Cf/Ac/Yr	Total Cu.Ft. Productivity
28C	79.842	DF	NA	40	3,193.680
41C	12.157	DF	109	152	1,847.864
43C	10.161	DF	NA	54	548.694
43E	28.514	DF	NA	63	1,796.382
52D	13.864	DF	NA	40	554.560
78	15.009	DF	125	184	2,761.656
102C	34.574	DF	NA	45	1,555.830
105A	11.637	DF	NA	45	523.665
108C	9.746	DF	NA	45	438.570
113C	0.371	DF	107	149	55.279
125C	9.042	DF	NA	30	271.260
125D	3.950	DF	NA	30	118.500
135E	27.358	DF	160	170	4,650.860
138E	27.256	DF	90	70	1,907.920
138G	37.011	DF	90	70	2,590.770
	320.492				22,815.490

Total - 22,815.490 cu.ft. ÷ 320.492 ac. = 71.189 cf./ac./yr.

Selecting the highest productivity figures from all tables, then including ponderosa pine figures (with no exhibits to show where this figures came from) as presented by Mr. Just, in his February 5, 2004 letter.

Soil Unit	Acres	Species	Site Index	Cf/Ac/Yr	Total Cu.Ft. Productivity
28C	79.842	DF	NA	40	3,193.680
41C	12.157	DF	109	152	1,847.864
43C	10.161	DF	NA	54	548.694
43E	28.514	DF	NA	63	1,796.382
52D	13.864	PP	92	113	1,566.632
78	15.009	DF	125	184	2,761.656
102C	34.574	DF	NA	45	1,555.830
105A	11.637	DF	NA	45	523.665
108C	9.746	PP	104	141	1,374.186
113C	0.371	DF	107	149	55.279
125C	9.042	DF	NA	30	271.260
125D	3.950	DF	NA	30	118.500
135E	27.358	DF	160	170	4,650.860
138E	27.256	DF	90	70	1,907.920
138G	37.011	DF	90	70	2,590.770
	320.492				24,763.178

Total - 24,763.178 cu.ft. ÷ 320.492 ac. = 77.266 cf./ac./yr.

Selecting the highest productivity figures from all tables, then including ponderosa pine figures from the Office of State Forester Forest Soil Ratings Memorandum (SCS Data).

Soil Unit	Acres	Species	Site Index	Cf/Ac/Yr	Total Cu.Ft. Productivity
28C	79.842	DF	NA	40	3,193.680
41C	12.157	DF	109	152	1,847.864
43C	10.161	DF	NA	54	548.694
43E	28.514	DF	NA	63	1,796.382
52D	13.864	PP	92	88	1,220.032
78	15.009	DF	125	184	2,761.656
102C	34.574	DF	NA	45	1,555.830
105A	11.637	DF	NA	45	523.665
108C	9.746	PP	104	110	1,072.060
113C	0.371	DF	107	149	55.279
125C	9.042	DF	NA	30	271.260
125D	3.950	DF	NA	30	118.500
135E	27.358	DF	160	170	4,650.860
138E	27.256	DF	90	70	1,907.920
138G	37.011	DF	90	70	2,590.770
	320.492				24,114.452

Total - 24,114.452 cu.ft. ÷ 320.492 ac. = 75.242 cf./ac./yr.

Mr. Just states I have excluded 242 acres from my calculations. From the tables presented above, it can be seen that **all** of the acreage on the parcel has been included.

All of these tables presented **show** the subject property produces **less than 85 cu. ft./ac./yr. of "merchantable" timber volume**. This has been determined by Lane County, and the State of Oregon, to be the measuring parameter for marginal soils.

After stating that an alternative method (to NRCS data and/or Dept. of Forestry methodology) for determining productivity cannot be used, Mr. Just presents estimates of cf/ac/yr data, including productivity numbers with no supporting data. Mr. Just also uses ponderosa pine data from the publication *Establishing & Managing Ponderosa Pine in the Willamette Valley.* In that publication the authors **clearly state** it is preliminary information without a large enough data base to be statistically accurate. The authors further state that use of this data should keep in mind that it was derived, in most instances, from only **one** study site.

Mr. Just has compiled his table from multiple sources, including figures from the 1990 Office of State Forester Memorandum, General File 7-1-1. He has used these figures after **stating** in an earlier rebuttal letter to Lane County (see Lane County File #PA 02-5838, Ogle), that **this file does not exist.**

Mr. Just then presents a table showing the productivity of the parcel to be 71 cf/ac/yr. This brings the total number of tables presented to seven; **all of these tables show conclusively that the parcel will not produce 85 cf/ac/yr.**

Mr. Just then addresses the subject of income calculations for the parcel. He states that I show no report of field plots taken. I walked through the clearcut areas, now growing scattered seedlings, and took 1/10th acre plots, counting the stumps in the plot circle. I then obtained the average number of stumps per plot by dividing the total number of stumps by the total number of plots, giving me an average of 4.86 stumps per plot. I then multiplied that number by 10 (because the plots taken were **1/10th** of an acre) to arrive at a per acre figure; this number is 48.6 stumps per acre, which corresponds to 48.6 trees per acre. I rounded this figure up to 50 trees per acre for my analysis. This method for determining the number of trees per acre is **standard** procedure for calculating stocking levels. The only variation in this procedure is the size of the plot. It is not a methodology for determining forest productivity.

Mr. Just then states that this methodology does not assess the potential productivity of the soils, or reflect reasonable forest management, as it assumes that the existing stocking rate is identical to the potential stocking rate. The stands that existed before the parcel was logged were established by natural regeneration. While management of the stands could **possibly** increase the stocking levels, and therefore the productivity, it is by no means certain. The current stocking levels are even lower than the previous stands, and the parcel was planted after the logging activities. However, the planted seedlings have suffered a high mortality rate. At this point the next thing to do would be to replant, ideally spray for brush and grass control, and continue to carry out other management activities for stand improvement. Even carrying out these activities does not **guarantee** that a fully stocked stand will become established. The seedlings are competing with grass, brush and animals to grow. The soils are poor and the south and west slopes are extremely dry in the summer months, with moisture being a severe limiting factor on this site.

This brings us to the reason so few soils have site index ratings in Lane County's data base. The productivity of the soil itself is only **one** determining factor of a soil's potential site index rating. Other factors include aspect, ground water levels and moisture content, rainfall amounts, temperature averages and variations, slope and elevation. These are the reasons that growth and/or productivity of a tree species growing in a specific soil type are a **reflection** of **all** of the site conditions, not just the soil itself.

Establishing a site index, for a particular soil type, requires large amounts of data from many sites. Collecting this data from high site soils is generally easier than collecting this data from low site soils. The simple reason for this is that stands of trees, and **fully stocked stands**, are relatively easy to find in areas of high site indexes and collect data on. The soil data tables reflect this; most high site soils include a site index number.

This is not the case for poor soils and sites. Poorer sites rarely grow fully stocked stands, and in many cases barely grow trees, making the collection of good data extremely difficult. Stands on south slopes generally consist of widely spaced conifers intermixed with hardwoods. In most cases there is simply not enough moisture to support a fully stocked stand. The existing trees are competing for the limited resources; the end result is fewer trees per acre than a hypothetical fully stocked stand.

The variation within a particular soil type can be large. Given the same soil, trees on a north slope will grow faster than trees on a south slope; trees in an area of high rainfall will grow faster than trees in an area of low rainfall. A good example of this is in the coast range. Trees on the western slopes will grow faster than trees on the eastern slopes in the "rain shadow"; **growing in the same soil type.** Ground water dramatically effects tree growth, in most cases negatively. Two examples of this are Douglas-fir and ponderosa pine. Both of these species grow poorly, with high mortality rates in saturated soils, and/or swampy areas, with high water tables. These conditions exist throughout the lower evlevations of the Dahlen parcel. In summation, trees must be able to use available moisture for growth. Just because moisture is present does not always mean it will increase a tree's growth.

These are all of the reasons that a site index number applied to a particular soil is an **average** site index number for the soil type in question. This is why there are many soil types with no site index numbers, simply because not enough data has been collected to assign a site index number to that particular soil type.

For all of the reasons discussed above it is extremely difficult to define the **potential** productivity of one particular soil type. Tables printing potential productivity assume that particular conditions extist within that soil type and a fully stocked stand of healthy trees exists. This does not mean that the projected growth is guaranteed, hence it is called **potential** productivity. This is the reason for boring site trees, calculating stocking levels and measuring the volume (productivity) of trees growing on a specific site. Since tree growth reflects only the potential of the **specific** site they are growing on, the site index obtained from these measurements cannot be applied across the board to a particular soil type.

This is particularly difficult when considering the use of "reasonable management practices" to establish fully stocked stands, capable of acheiving the maximum "potential" productivity. As a practicing forester, I have planted lands similar to the Dahlen parcel, in the same soil types, over and over, in an attempt to establish a fully stocked stand. In a high percentage of cases I have not been able to establish a **poorly** stocked stand, due to factors such as drought years and high summer temperatures, particularly on grassy south to southwest aspects similar to the Dahlen parcel. It is especially difficult to establish trees in natural and/or "native" grasslands, because grass is such a fierce competitor for moisture. It is equally difficult to establish trees in swampy wet low areas which appear to be ideal for trees.

An additional note on "reasonable forest management". Mr. Just repeatedly states I have not used or reflected ideas of reasonable forest management. Activities proposed by him would be prohibitively expensive and in many cases would not work regardless. As a practicing forest consultant and forest manager, there is a limit to how much time, effort and money can be spent, and still be considered "reasonable forest management". Timber companies and small woodlot owners cannot spend unlimited amounts of the three mentioned resources. Timber companies operate with long term profits in mind; most small woodland owners do to. While there may be some small woodland owners who manage their forest as a hobby, and operate at a loss, the majority of small woodland owners simply do not have the money to operate in the red. In **no** instance would a prudent forest manager consider losing money to "reasonable forest management".

For all of the above discussed reasons, there are soil types on parcels which cannot achieve the maximum predicted potential productivity. This is the reason that all sites are looked at individually.

CONCLUSION:

An aerial photo history of the property (see Exhibits 1-5) shows many areas of the Dahlen parcel which have not grown any trees in the past 54 years. Historical photos of adjoining properties, as well the subject parcel, show large areas of the southwest hills of Eugene without trees as far back as 1936. One could also make the logical assumption that if no trees existed in 1936, there was most likely a period of time, prior to the photo being taken, when no trees existed as well. Most of these areas have been, and are currently, thin, rocky soils, which are incapable of supporting anything other than grass and the occasional small, scrub oak. Conifers need a soil depth deep enough to support a root system. While the occasional stunted tree can be found growing from a rock cliff, it is not a rapidly growing, productive tree and it is certainly not growing within a fully stocked stand. From many years of experience planting trees, supervising the planting of trees and advising clients, I can state that **there are** areas where establishing a fully stocked stand is impossible. This is especially true in the south hills of Eugene, where large areas have existed as grassland, and/or grassland/mixed oak savannah, for decades.

For purposes of the income capability, the parcel must have been managed during three of five calendar years preceding January 1, 1983. The income generated from a forest operation during that time period must be $10,000 per year or more. With large areas of the Dahlen parcel devoid of trees, particularly in areas of the Witzel soil (soil type 138) and Chehulpum silt loam (soil type 28), it was not possible during the time period in question to generate $10,000 per year in income from a forest operation. Another soil type devoid of trees on the Dahlen parcel is the McAlpin silty clay loam (soil type 78). There is too much ground moisture in the area underlain by this soil type. Most conifers cannot tolerate a high water table. All of the above mentioned soils have a rating of none in the 1997 NRCS data. The figures for cubic foot productivity which I used came from older data tables and are **estimates** of **potential** productivity, possible **only** site conditions are conducive to tree growth. The same conditions described above exist today; as a consequence there are **still** no trees in these areas. Nothing has changed, a forest operation could not generate $10,000 per year in income during the time period in question and can still not generate income from a forest operation today.

For all of the above reasons, combined with 27 years of professional experience and years of trying to manage sites similar to this, I have typed 104 acres of the Dahlen parcel as being incapable of establishing fully stocked stands of productive **"merchantable"** timber. All of the data for my projections are in my original analysis; I will not repeat them here.

Sincerely,

Mark E Setchell



EXHIBIT 1

DAHLEN PROPERTY
T18S-R4W - SEC 24
T18S-R3W - SEC 19
EXHIBIT 5

2000 PHOTO

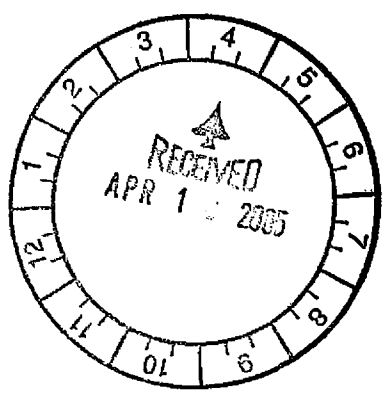
AREAS CRUISED MARCH, 2005

HARDWOOD (NONCOMMERCIAL) AREAS

AREAS LOGGED IN 1990-91

HERSHNER HUNTER LLP

STEVE CORNACCHIA
scornacchia@hershnerhunter.com



April 18, 2005

Lane County Planning Commission
125 E. 8th Avenue
Eugene, OR 97401

Re: PA 04-6092 (Dahlen)
Our File No. 22186.30005

Dear Commissioners:

We represent Karen Dahlen regarding PA 04-6092. This letter provides the Lane County Planning Commission, and the record of this proceeding, with additional testimony and evidence regarding the provisions of ORS 197.247, specifically the farm and forest income tests (ORS 197.247(1)(a) and the forest productivity test (ORS 197.247(1)(a). Opponents of the application have recently raised several issues regarding the tests and this letter provides the applicant's response to the arguments contained in those issues.

Recently raised issues include the following:

- **The applicant's demonstration of compliance with the forest income test is incomplete because it does not include an analysis of the adjoining 67 acres in common ownership (Moshofsky) during the 1978-1983 test period of ORS 197.247(1)(a);**

- **The affidavits of Mr. Moshofsky, dated April 15, 1997 and December 17, 2003, did not take into account the grazing of cattle that occurred on the subject property during the 1978-1983 test period;**

BCC #9 - 21 pp.

- **The applicant's demonstration of compliance with the forest income test did not include all Moshofsky-owned property and mills existing during the 1978-1983 test period.**

ORS 197.247(1)(a) forest income test analysis of entire 387.65 acres in common ownership during the 1978-1983 test period.

In response to this issue, the applicant requested that the consulting forester, Marc Setchko, conduct an additional forest income analysis of the subject property, to include the entire 387.65 acres of common ownership in 1983. Enclosed herewith are copies of a report issued by Marc Setchko, dated March 27, 2005. In that report Mr. Setchko calculates the average gross annual income of the property through a complete rotation. He calculates what the forest operation on the subject property was capable of, in terms of income, based on actual stocking of the property during the 1978-1983 period. His calculation is based upon the actual volume of timber removed from the property in 1990 by Mr. Moshofsky (Mr. Moshofsky's affidavit of that timber removal, dated March 15, 2005, is attached hereto as Exhibit A) and a timber cruise of the remaining portion of the property containing stands of merchantable Douglas Fir conducted by Mr. Setchko. Included in Mr. Setchko's report is a map of the property with areas of timber harvest and existing stands of merchantable Douglas Fir delineated. Mr. Setchko's earlier reports, currently in the record of this proceeding, and incorporated herein by this reference, demonstrate that significant portions of the property have not had any merchantable trees growing thereon for at least 50 years, due primarily to the steep, rock-laden, barren slopes of the northern portion of the property and the continually moist bottom land throughout the middle of the property. Those areas of the property contain poor soils for timber production (138G, 52 D, and 28C) as shown in Mr. Setchko's numerous reports in the record of this proceeding. The record of this proceeding includes aerial photos of the property, dated back to 1952, that display that those same areas have been devoid of any trees, merchantable or otherwise, long before the 1978-1983 period and continue to this day to be devoid of trees. Mr. Setchko was not required to make any assumptions on stocking levels in his analysis and calculations—he used the actual condition of the property during the applicable time period and its ability, at that time, to produce forest income over the growth cycle of the merchantable stands of timber existing at that time.

The applicant asserts that the income capability of the property in this case can be calculated by actual stocking conditions of the property before, during and after the applicable 1978-1983 period. Mr. Setchko's analysis and calculations of the actual timber available for harvest, throughout the growing cycle, demonstrates that the entire property was and is not capable of producing over $10,000.00 in annual income over the growing cycle from a forest operation.

Grazing of cattle on the subject property during the period 1978-1983.

Mr. Moshofsky's earlier affidavits regarding the absence of farm operations on the subject property during the period 1978-1983 did not take into account an informal agreement with a third party that allowed a limited number of cattle to graze upon the subject property. Mr. Moshofsky has clarified the earlier affidavits with his affidavit, dated March 15, 2005 (Exhibit A). In that affidavit, Mr. Moshofsky makes it very clear that the cattle grazing occurred for the purpose of establishing a human presence on the property during his absence, apparently to dissuade trespassing and interloping on the property during that absence. Mr. Moshofsky's affidavit also demonstrates that the grazing of the cattle never produced anywhere near $20,000.00 in annual income. Mr. Moshofsky's testimony that he did not manage the property for any other farm use during the 1978-1983 period and that the cattle grazing never produced $20,000.00 in annual income demonstrates the applicant's compliance with the ORS 197.247(1)(a) income test for farm operations. In other words, at no time during the applicable period did any farm operation actually produce more than $20,000.00 annually. Therefore, the property was not managed as part of a farm operation capable of producing that same amount and the test of the statute is satisfied.

All Moshofsky-owned property and mills existing in the world during the 1978-1983 test period must be included in the application of the income test.

Goal One Coalition raised this issue in its letter to the Commission, dated February 25, 2005. The letter provides no authority for the proposition that the legislature intended the statute to cover all land and industrial operations, wherever located on the planet, of an individual in the analysis of what the subject property could contribute to the forestry economy of the state. The legislative history of the statute is clear that the legislature was attempting to address certain properties and their ability to contribute significantly within a snapshot in time (using the 1978-1983 time period). Lane County's 1997 interpretation of the statute, currently in the record as Exhibit D. to the application, provides that "the law creates a general presumption that all **contiguous** land owned during 1978-82 was part of the owner's 'operation' (emphasis added)." The interpretation includes no direction that non-contiguous property or operations of the applicant be considered in the income analysis. Lane County has consistently required Marginal Lands applicants to address the income tests on a contiguous property basis only. That requirement is an objective criteria authorized by ORS 197.247(5).

Not only has Lane County not required that all of the applicant's lands or operations in other counties or states be considered in the analysis, but to do so is so unreasonably beyond what the legislature intended to require in the statute. If the legislature had intended such a result, which could place worthless property (from a resource perspective) of a larger, non-contiguous, ownership in a totally unusable condition, it would have stated such an intent in

the body of the statute. Goal One's assertion that the income capability analysis of a particular piece of property must include all other lands and operations owned by the property owner defeats the intent of the legislature to capture particular, non-contributing, properties and to allow both residential and resource use of them through application of the Marginal Lands statute. Goal One's assertion in this issue is without any legal foundation, is supported by no substantial evidence of its requirement and should be rejected by the Commission.

Mr. Setchko does not provide substantial evidence concerning forest productivity.

This issue is included in the February 22, 2005, Goal One Coalition letter to the Commission and is a restatement of its assertion earlier in the proceeding. The applicant has addressed this issue in our letter to the Commission, dated February 15, 2005, and incorporates, by this reference, the responses therein. Mr. Setchko has responded to the arguments of Goal One Coalition in his letters contained in the record of this proceeding, dated February 23, 2004, April 8, 2004, February 15, 2005, and March 27, 2005 (a copy of which is enclosed herewith).

Once again, as we asserted in our earlier letter, Goal One Coalition is either confusing forest productivity with forest income capability or is deliberately attempting to confuse the proceedings by making both of the ORS 197.247 tests (income capability of subparagraph (1)(a) and forest productivity of subparagraph (1)(b)(C)) into productivity tests that require using the same evidentiary basis for analysis. The tests and the manner in which compliance with the tests is demonstrated are separate and distinct. Not only are these Goal One Coalition assertions confusing to the proceeding, they are without merit. Furthermore, its assertion on page 3 of its letter is just plain wrong. It states "The subject property is designated as forest land and is zoned for forest use." No, it is not. It is designated as agricultural land and zoned Exclusive Farm Use. Goal One Coalition's incorrect assertion in this issue only serves to confuse the proceedings and, like the remainder of its assertions, must be rejected as unfounded, unsupported and without merit.

Mr. Setchko fails to explain the use of 1983 prices.

Goal One Coalition is correct in asserting that the calculation of the annual gross income for the ORS 197.245(1)(a) income test can be accomplished by the use of timber values. However, it is incorrect in its assertion that the calculation must use timber prices other than 1983 prices.

Mr. Setchko used 1983 Douglas-fir log prices and volumes in his calculation of the projected gross forest operation income of the proposed marginal land. In this case Mr. Setchko is the

qualified expert with 27 years of forest management experience, including 17 years as a private consultant and a Master's Degree in Forestry. Goal One Coalition has not established that it has any experience or credentials in forest management. Furthermore, it has not provided any testimony from a qualified expert in forest management to support its assumptions and conclusions.

Lane County, in response to and in reliance upon *DLCD v. Lane County*, 23 Or LUBA 33 (1992), issued its interpretations of the Marginal Lands statutes in the Board of Commissioners' 1997 Supplement to Marginal Lands Information Sheet. A copy of the supplement and the information sheet is in the record of this proceeding. It is a binding policy statement providing guidance and direction to applicants, staff, the public and to the Lane County Planning Commission and Board of Commissioners regarding the statute. The Board direction stated in ISSUE 4 of the supplement provides:

> **"ISSUE 4: <u>What price date should be used to calculate gross annual income for forest lands?</u>**
>
> **Board's Direction:**
> The legislative intent of the "management and income test" of the Marginal Lands
> Law was to identify those lands which were not, at the time the Marginal Lands law was enacted (1983), making a "significant contribution" to commercial forestry. Therefore, it is appropriate and statistically valid to use the following methodology:
>
> 1. Based on the best information available regarding soils, topography, etc., determine the optimal level of timber production for the tract assuming reasonable management.
>
> 2. Assume that the stand was, in 1983, fully mature and ready for harvest.
>
> 3. **Using** the volumes calculated in step (1), and **1983 prices**, calculate the average gross income over the growth cycle." (Emphasis added)

The Board's direction to use 1983 prices was an essential and reasonable approach to determining the productivity of forest lands at that time and obviates the need to make annual adjustments for inflation as the years go by (by adjusting the $10,000 income figure). That direction is also consistent with the statute. ORS 197.247(5) provides:

> "A county may use statistical information compiled by the Oregon State University Extension Service **or other objective**

> **criteria** to calculate **income** for the purposes of paragraph (a) of subsection (1) of this section." (Emphasis added)

In Issue No. 4 of the 1997 Interpretation Lane County established the timber price criteria for addressing the income test of the statute. The timber price criteria is an objective criteria with an adequate and reasonable foundation. The establishment of the timber price criteria is an act authorized by the Oregon Legislature by its enactment of the legislation creating the statute.

Ignoring the authority to use objective criteria granted to the county by the Oregon Legislature, Goal One Coalition wants the analysis process of the income test to change to favor its opposition to the designation of lands as Marginal Lands. While it opines that the analysis should use ever-changing (and ever-increasing) timber prices, usually increasing over time with inflation, it does not suggest that the $10,000 income threshold of the statute also be adjusted over time for inflation. Taking the Goal One Coalition argument to its most ridiculous conclusion, eventually inflation will drive timber prices to a point when no land would be able to meet the $10,000 test. Even the strictest reading of the statute results in a conclusion that the Oregon Legislature did not intend for a gradual and eventual phasing-out of the Marginal Lands designation process over time as inflated timber prices outstripped the $10,000 income test. That same strict reading results in a reasonable conclusion that, by including the time period and income threshold in the statute, the Legislature was establishing the base criteria (setting the goal posts) for the analysis as a snapshot in time (1978-1983) which corresponds to the 1983 session that created the Marginal Lands statute. As the county states in its interpretation, "the legislative intent of the 'management and income test' of the Marginal Lands Law was to identify those lands which were not, at the time the Marginal Lands law was enacted (1983), making a 'significant contribution' to commercial forestry." To suggest that the Legislature intended for the goal posts to move every time the nation experienced an inflationary period and for those goal post to eventually be torn down as a result of inflation is as "absurd" as Goal One Coalition's description of the county's interpretation.

Mr. Setchko's use of 1983 prices to determine average annual gross income is consistent with Lane County interpretations and policy and is directed by the Board of Commissioners' binding local level policy statement in the aforementioned supplement. Using the objective criteria established by Lane County pursuant to the statute, Mr. Setchko has determined that the subject property was not capable of being managed for forest operations producing at least $10,000 in annual gross income. Mr. Just has provided no evidence that contradicts Mr. Setchko's conclusions.

The use of 1983 log prices in the income test has been adequately and reasonably explained by the applicant, the forester and Lane County. The argument suggesting otherwise is without foundation, support or merit and should be rejected for those reasons.

Mr. Setchko fails to explain his use of a 50-year growth cycle.

In Issue No. 4 of the 1997 Interpretation, Lane County established the rotation criteria for addressing the income test of the statute. The rotation criteria is an objective criteria with an adequate and reasonable foundation. The establishment of the rotation criteria is an act authorized by the Oregon Legislature by its enactment of the legislation creating the statute. That act is authorized by ORS 197.247(5) and is consistent with the statute. (See earlier discussion of the use of 1983 timber prices)

The accompanying property line adjustment cannot be approved.

This issue was raised by Goal One Coalition in its letter to the Commission, dated February 22, 2005. Once again, Goal One Coalition has asserted an issue and failed to provide any legal foundation, authority or substantial evidence to support its assertion. It tries to use ORS 92.190(3) to support its argument that Lane County did not meet applicable approval criteria in approving the legal lot determination of the subject property as configured pursuant to the property line adjustment. However, while Lane County issued a legal lot determination, it did not approve of the adjustment, and is not required to regulate or approve that or any other property line adjustment. Goal One Coalition makes a huge leap from that Lane County legal lot action to asserting that Lane County must approve property line adjustments and must approve them in a manner prescribed by Oregon statutory provisions (ORS Chapter 92). That assertion is without merit. Goal One Coalition's reliance on ORS 92.190(3) to support its assertion is misplaced. The statute does not require local government regulation or approval of property line adjustments. What it says is that during a county's approval of an adjustment it may use certain procedures. In other words, if a county regulates and approves adjustments it may perform that regulatory function in a certain way. It does not say, and no Oregon statute says, that a county is required to regulate or approve such adjustments.

Lane County does not regulate property line adjustments and is not required to do so by Oregon law. Goal One Coalition is without any legal authority to support its assertion otherwise.

Conclusion

Throughout the record of this proceeding, and with the inclusion therein of the information and argument contained herein, the applicant has demonstrated that the designation of subject property as Marginal Land complies with ORS 197.247 and all other applicable criteria. Throughout the proceeding Goal One Coalition has presented issues and arguments that are without legal foundation, are not supported by substantial evidence and are without

merit. Therefore, the Commission should recommend to the Lane County Board of Commissioners that the application be approved.

Best regards,

STEVE CORNACCHIA

PSC:ss
Enclosures

Cc: Karen Dahlen (with enclosures)

Marc E. Setchko
CONSULTING FORESTER

870 Fox Glenn Avenue
Eugene, Oregon 97405
Phone: (541) 344-0473
FAX: (541) 344-7791

March 27, 2005

FOREST PRODUCTIVITY
& INCOME ANALYSIS
for
Dahlen Trust

SUBJECT PARCEL:

ASSESSORS MAP NO. 18-04-24, TL #300: ±320.492 acres and

ASSESSORS MAP NO. 18-03-19, TL #1300: ±67.16 acres

QUALIFICATIONS: Society of American Foresters Certified Professional Forester (#2953), with 27 years of experience including 17 years as a consultant, with Bachelor of Science (Cal Poly, SLO) and Master of Forestry (Oregon State) Degrees. As a consultant I have extensive experience in all phases of forestry, including drawing up forest management plans, handling the administration of these plans and maximizing the return to my clients. My productivity analyses are based on sound and "reasonable" forest management practices. This includes carrying out activities in a manner which generates a long term profit, rather than a loss. There are management activities which could be carried out which could benefit a forest operation but result in a loss to the owner. For these reasons all productivity analyses must be conducted from the standpoint of "reasonable forest management" practices.

I. SUMMARY

An evaluation of the site, from a timber productivity and income producing standpoint is reviewed in this analysis, in order to determine if the parcel meets the criteria for marginal lands designation. The analysis will show that the subject property qualifies for the following reasons:

1. The income generated from the subject property averages less than $10,000/year, based on 1978 through 1983 log prices. This level of income meets the following statutory test for Marginal Lands: ORS 197.247 (1)(a) "The proposed marginal land was not managed during three of the five calendar years preceding January 1, 1983, as part of a ... forest operation capable of producing an average, over the growth cycle, of $10,000 in annual gross income."

The income test must be calculated for the entire parcel (±387.65 acres), which includes both tax lots (#300 & #1300), as it existed for the five calendar years preceding January 1, 1983.

2. The subject property produces less than 85 cu.ft./ac./yr. of merchantable timber volume. This has been determined by Lane County, and the State of Oregon, to be the measuring parameter for marginal soils west of the Cascade Range; as defined in ORS 197.247 (1) (b) (C).

The productivity test must be calculated on the parcel, or portion(s) of the parcel, which is being submitted for marginal land designation. On the Dahlen parcel this includes tax lot #300, totaling ±320.492 acres. **This test was addressed in my February 15, 2005, letter submitted previously.**

Six tables are presented in my February 15, 2005, letter; these tables show a productivity range of 26 to 77 cubic feet per acre per year for the parcel. Goal One also submitted a table showing a productivity of 71 cubic feet per acre per year. To sum up; seven tables have been submitted regarding the **potential** productivity of the Dahlen parcel, **all** of them show the parcel is not capable of 85 cubic feet per acre per year.

II. RESULTS OF INCOME CALCULATIONS

Average Gross Annual Income Through A Complete Rotation

The income figures were calculated using the following data:

1. The **actual** timber volume growing on the property. These figures were obtained by two methods. Using actual cutout (scaled, or measured, volume removed) data from when past logging was done on the parcel and cruising (the method for measuring the merchantable volume in a stand of timber) the standing trees to detemine the volume that is **actually** growing on the parcel at the present time. This cutout volume and the cruised volume were added together to calculate the total volume for the entire parcel. The volume figures obtained by these methods are expressed in thousand board feet (MBF).

The income test can only be calculated using volume figures expressed in thousands of board feet, because this is how timber is purchased by mills buying timber. Although some timber is purchased by the ton, this is primarily low value pulpwood. Timber is not purchased by the cubic foot, the measurement used for potential productivity of a soil.

The actual recorded cutout data from logging conducted approximately 14 years ago is available and will be submitted by Mr. Steve Cornacchia. This data can then be combined with the volume left on the property at the present time to come up with a total merchantable volume on the parcel.

Ideally all of the merchantable timber should be cruised at the same point in time, preferably at rotation age. However, since a large portion of the timber was logged in the past (1990-91), the volume removed then must be added to the volume left at the present time. This should actually show considerably **more** volume than existed at the time of logging, due to 14 years of growth adding merchantable volume onto the remaining trees. This means the totals used for this analysis are actually **higher** than what the volume would be if the entire property had been cruised **before** any logging took place. In other words, the figures shown below are much more optimistic than if the merchantable volume was calculated at a single point in time. The trees logged 14 years ago were 45-60 years old; the trees cruised at the present time are 50-70 years old. This type of age variation is normal, even in stands which were originally planted in the same year. This is due to natural seeding in, mortality and trees replacing other trees. Using these numbers will present a figure representative of a 50 year rotation, the standard accepted by Lane County.

For the total board foot volume I have used a combination of the recorded volume logged and the cruised volume from a March, 2005 timber cruise of the entire parcel. The areas logged and cruised are delineated on the aerial photo attached as Exhibit 1.

Total Merchantable Volume:

Douglas-fir -- 900 MBF (thousand board feet) logged by Moshofsky (see Exhibit 2)

711 MBF from timber cruise completed in March, 2005 (see Exhibit 3)

Ponderosa Pine -- 34 MBF from timber cuise completed in March, 2005 (see Exhibit 3)

For the 900 MBF logged by Moshofsky I have used the breakdowns listed below for grades.

A 50 year old stand on this site should have approximately 40% 2 SAW, 50% 3 SAW and 10% 4 SAW. If anything, these grade estimates err on the high side. In all probability there would be less 2 SAW and more 4 SAW. However, these figures are used to represent the highest possible log price scenario for the applicant.

Total Volume - Logged Volume - Douglas-fir -- 900 MBF (thousand board feet)

360 MBF of 2 SAW @ $255/MBF*	$ 91,800
450 MBF of 3 SAW @ $215/MBF*	96,750
90 MBF of 4 SAW @ $200/MBF*	18,000
Total Gross Value	$206,550

*See Exhibit 4.

The value for the merchantable volume still growing on the parcel was determined by using the grade breakout from a timber cruise completed in March, 2005 (see Exhibit 2). To present the most optimistic scenario possible I have lumped the rough 3M grade (which is worth approximately 40% of the 2M grade) with the 3M grade. This will show a higher value than what a mill would have paid, because a large portion of the timber on the property is rough, lower value wood. This is typical of stands growing on poor sites (such as the Dahlen parcel), with hardwoods such as oak scattered throughout the conifers. Conifer growing intermixed with high percentages of hardwoods are much more likely to be deformed from growing up through the hardwoods and have large limbs due to high numbers of open grown trees. The highest quality wood comes from fully stocked **pure** stands of conifer. The rocky (in many areas boulder fields are present on the surface) areas and shallow, poor soils are not conducive to growing pure stands of conifer. There are many hardwoods, the majority of which are noncommercial, which will outcompete conifers in this type of growing condition.

Total Volume - Cruised Volume - Douglas-fir -- 711 MBF (thousand board feet)

173.2 MBF of 2 SAW @ $255/MBF*	$ 44,166
435.8 MBF of 3 SAW @ $215/MBF*	93,697
102.0 MBF of 4 SAW @ $200/MBF*	20,400
Total Gross Value	$158,263

*See Exhibit 4.

Total Volume - Cruised Volume - Ponderosa Pine -- 33.9 MBF

20.5 MBF of 4 SAW @ $250/MBF*	$ 5,125
13.0 MBF of 5 SAW @ $180/MBF*	2,340
0.4 MBF of 6 SAW @ $150/MBF*	60
Total Gross Value	$7,525

*See Exhibit 4.

The above three totals are then added together to arrive at a total volume for the entire parcel.

TOTAL GROSS VALUE OF LOGGED AND CRUISED VOLUME: $372,338

AVERAGE GROSS INCOME -- $372,338 ÷ 50 YEARS = $7,447/YEAR

III. CONCLUSION

The analysis presented shows conclusively that this property will not support a merchantable stand of timber, of sufficient production capability, to meet or exceed the Marginal Lands Income test:

1) Total gross income for 1983 was based on the volume of rotation aged merchantable timber which was logged 14 years ago, and adding the remaining standing merchantable timber (most of which is currently 55 to 70 years old) together. From these figures it can be seen that the gross income for the entire 387.652 acre site would have been $372,338 in 1983. The average annual gross income would have been $7,447/year. Because $7,447 is less than $10,000/year, the property meets the following statutory test for Marginal Lands: ORS 197.247 (1)(a) "The proposed marginal land was not managed during three of the five calendar years preceding January 1, 1983, as part of a ... forest operation capable of producing an average, over the growth cycle, of $10,000 in annual gross income."

In summary, from the data collected on the merchantable volume growing on the above described parcel, this property is ill suited to the production of merchantable timber and use as land for forestry purposes. It is my opinion that this parcel should be classified as marginal land.

Sincerely,

Marv E Setzke

TIMBER CRUISE
DAHLEN PROPERTY

Prepared
for
Karen Dahlen

Prepared by
Marc E. Setchko
Consulting Forester
March 25, 2005

EXHIBIT 3

TIMBER CRUISE
DAHLEN PROPERTY

Location: The subject property is located in Section 19, T18S, R3W, and Section 24, T18S, R4W, WM., on the south edge of Eugene, Oregon, on Willamette Street. It is ±387 acres in size with approximately 50 acres of merchantable timber, in stands which can be delineated. There are also scattered conifers throughout the remaining acreage, both merchantable sized and reproduction which is not merchantable at this time. However, most of the scattered, merchantable sized timber consists of open grown, rough trees of low quality. These trees do not add much volume and would be best used as leave trees if the property was logged. Access is via a paved road to the homesite and dirt roads throughout the timber.

Terrain throughout the property is gentle to moderate, except for a couple of short, steep pitches along the northern boundary. All of the timber can be logged using ground equipment, with timber lined out from the steep stretches.

Timber cover is Douglas-fir intermixed with a trace of ponderosa pine. There are also scattered hardwoods throughout the property. However, most are noncommercial or low quality, with little value.

Cruise Method: The timbered areas were variable plot cruised using a 3 chain by 3 chain grid and a 20 basal area factor. A total of 46 plots were taken.

All trees were cruised to 30% of DBH (minimum of 5").

Conifer volumes were calculated using the PRO-CRUISE program which uses form class rules established by James Girard and Donald Bruce with Behre's hyperbolic formula used to calculate scaling cylinders. The trees were graded using the rules established by the Columbia River Scaling Bureau.

Summary of Cruise Results: 50.0 cruised acres - **32' logs**

	Gross Vol/ac (bd ft)	Net Vol/ac (bd ft)	Grade (% of Net Vol) 2M	3M	Rough 3M	4M	5M	6M	Total Net Vol (MBF)
Douglas-fir	16,404	14,220	24	44	18	14			711.0
Ponderosa Pine	736	678				60	38	2	33.9
Totals	17,140	14,898							744.9

Oregon Department of Forestry
Forest Management [illegible]sion, Salem
503-945-7381

LOG PRICES
Domestically Processed Logs
(Delivered to a mill; "Pond Value")

(1st QUARTER PRICES, GRANTS PASS UNIT)

1983

Ponderosa Pine	
Peeler	$ 575
1S	$ 495
SM	$ 300
2S	$ 400
3S	$ 280
4S	$ 250
5S	$ 180
6S	$ 150
CR	$ 260
Utility	$ 80

LOG PRICES - 3rd Quarter 1983

WEST OREGON, SANTIAM, LANE, FOREST GROVE, TILLAMOOK AND ASTORIA UNITS

Douglas-Fir	
#1P	$505
#2P	425
#3P	340
SM	285
#2S	255
#3S	215
#4S	200
SC	140
Utility	75
CR	240

EXHIBIT 4

Hemlock	
P	$375
SM	260
#2S	220
#3S	190
#4S	175
Utility	65
CR	190

Spruce	
SM	$255
#2S	230
#3S	180

AFFIDAVIT

STATE OF OREGON)
)
County of Clackamas)

Before me this day personally appeared Art Moshofsky, who, first being duly sworn, deposes and says:

1. I owned property located in Lane County, Oregon, described as Assessor's Map No. 18-04-24, tax lot 0300, during the period from January 1, 1978 through January 1, 1983.

2. On December 17, 2003, I signed an Affidavit that stated: "At no time during the period stated in paragraph 1. above was the above described property managed as part of a farming operation. By "farm operation" I mean the employment of the subject property for the primary purpose of obtaining a profit in money. By "farm operation" I also mean all uses and activities defined as "farm use" and "current employment" of land in ORS 215.203(2)."

3. This affidavit clarifies that affidavit, a copy of which is attached hereto and by this reference incorporated herein.

4. During the aforementioned time period I allowed a third party to graze a limited number of cattle on the subject property. The number of cattle was limited and never exceeded 25 head. My purpose in allowing the grazing was to create an activity and human presence on the property in our absence. The consideration received for allowing the grazing was the activity and presence and annual fence repair. In the years that I accepted a nominal payment for the grazing, the payment and the other stated consideration never exceeded $1,000 in annual value. At no time during the aforementioned time period was the subject property managed as part of a farm operation capable of producing $20,000 in annual income.

5. In 1990 I harvested 900,000 board feet of Douglas Fir on the subject property.

Art Moshofsky

Personally appeared the above-named Art Moshofsky, being duly sworn, who signed this affidavit in my presence as his voluntary act and deed.

Before me this 15th day of March, 2005.

OFFICIAL SEAL
RAAKHI BATRA-SHARMA
NOTARY PUBLIC-OREGON
COMMISSION NO. 386883
MY COMMISSION EXPIRES NOVEMBER 15, 2008

Raakhi Batra
Notary Public for Oregon
My commission expires: Nov 15, 2008

EXHIBIT "F"

AFFIDAVIT

STATE OF OREGON)
) ss.
County of Lane)

I, Art Moshofsky, after being duly sworn, depose and say:

1. I owned property located in Lane County, Oregon, described as Assessor's Map No. 18-04-24, tax lot 0300, during the period from January 1, 1978 through January 1, 1983.

2. At no time during the period stated in paragraph 1. above was the above described property managed as part of a farming operation. By "farm operation" I mean the employment of the subject property for the primary purpose of obtaining a profit in money. By "farm operation" I also mean all uses and activities defined as "farm use" and "current employment" of land in ORS 215.203(2).

3. This affidavit is consistent with and further clarifies that affidavit of mine, dated April15, 1997, a copy of which is attached hereto and by this reference incorporated herein.

Art Moshofsky

SIGNED AND SWORN to before me this 17 day of December, 2003, by Art Moshofsky.

OFFICIAL SEAL
SHAUN BOYLAN
NOTARY PUBLIC-OREGON
COMMISSION NO. 364541
MY COMMISSION EXPIRES JAN 9, 2007

Notary Public for Oregon
My commission expires: 1/9/07

Mr. Just then states that red cedar and cottonwood could grow in the poorly drained areas. First, cottonwood is **not** a merchantable species. Second, red cedar is slow growing and produces a low volume per acre. For both of these reasons, red cedar would simply produce lower numbers than my current analysis presents. He also proposed red alder. This species will not grow on this property, because there is not enough **year round** moisture.

Sincerely,

Marc E Settles

May 24, 2005

HAND DELIVERED

Lane County Planning Commission
ATTN; Jerry Kendall
125 E. 8th Avenue
Eugene, OR 97401

Re: PA 04-6092 (Dahlen)
Our File No. 22186.30005

Dear Commissioners:

We represent Karen Dahlen, the applicant, regarding PA 04-6092. This letter provides the Lane County Planning Commission, and the record of this proceeding, with the applicant's rebuttal of additional testimony provided by Goal One Coalition in its letter to the Commission, dated April 21, 2005.

Goal One Coalition argues the following:

> **The applicant's demonstration of compliance with the forest income test, by the report of Marc Setchko, dated March 27, 2005, is incomplete because it assumes a 50-year rotation, it assumes 1983 log prices, fails to consider Ponderosa Pine and assumes actual stocking levels rather than potential stocking levels.**

Mr. Setchko is the applicant's professional forestry consultant and produced the March 27, 2005, as he has produced all of his reports in the record, consistent with the 1997 Lane County interpretation of ORS 197.247. The interpretation contains objective criteria developed by Lane County for use in the income calculations required by the statute. The use of that objective criteria by Lane County is authorized by ORS 197.247(5). Fifty-year rotations are the interpretation's adopted standard as is the use of 1983 log prices. The applicant has responded to this argument regarding the rotation standard and the use of 1983 log prices throughout this proceeding and incorporates herein all previous responses thereto.

The interpretation also directs that applicants "assume the stand was, in 1983, fully mature and ready for harvest. Goal One Coalition argues that the interpretation means to assume

PC #16 – 3 pgs.

"potential stocking levels." Its argument is not consistent with the language of the interpretation. In fact, Mr. Setchko provided the actual harvest (at 1990 maturity levels) and the actual maturity level of the remaining timber on the property in his cruise and then applied 1983 prices to that volume. That volume is obviously higher than it would have been in 1983 and produces an even higher income calculation than if Mr. Setchko had attempted to determine what the actual volume would have been in 1983. Even with the higher volumes, the resultant calculations produced an annual income level below the required $10,000 threshold of the statute.
The applicant and Mr. Setchko have responded to the Ponderosa Pine argument in earlier submittals to the record in response to earlier Goal One Coalition arguments.

The applicant is required to produce income information from the third party that grazed of cattle on the subject property during the period 1978-1983.

The applicant continues to rely upon the 1997 interpretation which provides that all operations on contiguous property must be analyzed in the income calculations. Goal One Coalition again rejects the direction of the interpretation and argues for a different approach to the calculations. Goal One Coalition's argument would require an analysis of farm and forestry operations, wherever located by whomever, rather than an analysis of the income-producing capability of the subject property. That approach is inconsistent with the stated purpose of the tests--determining whether the subject property was making a significant contribution to the forest and farm economy of Oregon during the subject period.

All Moshofsky-owned property and mills existing in the world during the 1978-1983 test period must be included in the application of the income test.

The applicant responded to this argument in our correspondence to the Commission, dated April 18, 2005.

Conclusion

Throughout the record of this proceeding, and with the inclusion therein of the information and argument contained herein, the applicant has demonstrated that the designation of subject property as Marginal Land complies with ORS 197.247 and all other applicable criteria. Throughout the proceeding Goal One Coalition has presented issues and arguments that are without legal foundation, are not supported by substantial evidence and are without

merit. Therefore, the Commission should recommend to the Lane County Board of Commissioners that the application be approved.

Best regards,

STEVE CORNACCHIA

PSC:ss
Cc: Karen Dahlen

HERSHNER HUNTER LLP

STEVE CORNACCHIA
scornacchia@hershnerhunter.com

July 25, 2005

HAND DELIVERED

Jerry Kendall
Lane County Land Management Division
Public Service Building
125 E. 8th Avenue
Eugene, OR 97401

Re: Karen Dahlen (PA 04-6092)
Our File No. 22186.30005

Dear Jerry:

Enclosed are documents and materials that are delivered to you with our request that you include the same in the record of PA 04-6092. The enclosures are provided to the record to support the Dahlen application as evidence addressing applicable criteria, issues raised during the Lane County Planning Commission proceedings and issues raised by opponents of the application. We will be providing you with draft findings of fact supporting a county approval of the application that will incorporate the current record and the enclosures provided herein.

The following documents and materials, with a brief explanation of each and its purpose, are enclosed:

1. **Pages ii and xi of the 1987 U.S. Department of Agriculture Soil Conservation Service (SCS) Soil Survey of Lane County Area, Oregon (1987 Soil Survey).** Page ii provides evidence that the publication is the product of fieldwork completed in 1980 and contains soil names and descriptions approved by the SCS in 1981. Page xi is the Foreward of the publication and provides evidence that the SCS intended the publication to be used for land use planning programs in Lane County. Both pages provide evidence that the publication contains the soil capability classes in the Agricultural Capability Class Classification System in use by the United States Department of Agriculture

Dec# 11 - 125pg.

Conservation Service on October 15, 1983. (as required in ORS 197.247(1)(b)(C)) The application incorporates the soil capability classifications of the 1987 Soil Survey in determining the classifications of the subject property's soils and to address the criteria of ORS 197.247.

In addition, we request that Lane County incorporate into the record, by reference, the entire 1987 Soil Survey.

2. **Forward of the 1987 Soil Survey currently posted on the NRCS web site.** The Forward on the website is a reproduction of the Foreword of the published 1987 Soil Survey that also includes the boxed statement: "This is a scanned version of the text of the original Soil Survey report of Lane County Area, Oregon, issued September, 1987. Original tables and maps were deleted. There may be references in the text that refer to a table that is not in this document." Reviewing the text following that statement on the Foreword reveals that it is a mirror image of the text of the published 1987 Soil Survey. A review of the text of the 1987 Soil Survey on the website reveals that the text of each soil map unit is a mirror image of the text of the published 1987 Soil Survey. That text reveals that the NRCS has not modified or changed the soil capability classifications of any soils listed in the published 1987 Soil Survey.

3. **Lane County Agricultural Lands Working Paper of the Lane Rural Comprehensive Plan ("Working Paper") published in November 1981, and its 1983 Addendum.** The Working Paper, and its 1983 Addendum, is listed by ordinance as supportive technical information used in preparation of the Lane Rural Comprehensive Plan and serves as a part of the factual basis of that comprehensive plan. The two documents include a 1980 SCS publication that lists soil capability classifications for soils in Lane County. The Working Paper and its Addendum also contain myriad references to the SCS Land Capability System and SCS data. They demonstrate that the soil capability classifications within the SCS Land Capability System were being used in 1981, and that that use included the county's use of it (and the SCS's use in providing the information to the public) and its classifications in 1981 and thereafter. The soil capability classifications in use by the SCS and the public in 1981 are mirror images of the soil capability classifications contained in the 1987 Soil Survey.

4. **Page 1 of 9 of the Lane County Soil Ratings for Forestry and Agriculture (1997 Soil Survey).** That page includes a statement that the Natural Resources Conservation Service (NRCS) participated in the creation of the 1997 Soil Survey. That statement provides evidence that the survey contains NRCS data regarding forest capability. (as required by ORS 197.247) The application incorporates some of the cubic feet per acre per year designations contained in the 1997 Soil Survey for particular soils of the subject property.

5. Office of State Forester (Oregon Department of Forestry) February 8, 1990 Memorandum (General File 7-1-1) including attached Lane County Forest Soils Ratings. The memorandum provides evidence that the Oregon Department of Forestry has published forest soil ratings for Lane County and that those ratings are based upon SCS data. The applicant's profession forestry consultant, Marc Setchko used ratings published in the memorandum in his calculations regarding forest productivity and the memorandum provides evidence that the ratings he used were based upon SCS data.

6. LUBA Decision No. 2005-029, *James Just v. Land County* (Carver). The LUBA decision contains LUBA's resolution of a variety of Marginal Land issues raised in the Carver application, including the use of the Lane County 1997 Supplement to Marginal Lands Information Sheet ("Lane County Supplement") in Marginal Land applications. In the Carver decision LUBA affirmed the county's use of 1983 log prices and 50-year rotations, as provided in the Lane County Supplement, for determining forest income as required by ORS 197.247. The decision is provided to assist the Lane County Board of Commissioners in their deliberation on the subject application.

7. Affidavit of Art Moshofsky. Mr. Moshofsky provides evidence that the subject property was not managed as a part of any other business or forest operation that he was involved with during the applicable period and that he owned no other property adjacent to, contiguous with or in the vicinity of the subject property.

8. Affidavit of Mark Minty. Mr. Minty provides evidence affirming information contained in an earlier affidavit of Mr. Moshofsky and states that C&M Livestock, Inc., did not own or manage any property adjacent to, contiguous with or in the vicinity of the subject property while it grazed cattle on the subject property.

Please place this correspondence and its enclosures into the record of PA 04-6092. If you have any questions regarding this matter please contact me.

Best regards,

STEVE CORNACCHIA

PSC:ss
Enclosures
Cc: Karen Dahlen (with enclosures)

APPENDIX A

This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other federal agencies, state agencies including the Agricultural Experiment Stations, and local agencies. The Soil Conservation Service has leadership for the federal part of the National Cooperative Soil Survey. In line with Department of Agriculture policies, benefits of this program are available to all, regardless of race, color, national origin, sex, religion, marital status, or age.

Major fieldwork for this soil survey was completed in 1980. Soil names and descriptions were approved in 1981. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1981. This survey was made cooperatively by the Soil Conservation Service, the Bureau of Land Management, the Oregon Agricultural Experiment Station, and Lane County. It is part of the technical assistance furnished to the North Lane, Siuslas, and Upper Willamette Soil and Water Conservation Districts. Financial assistance was provided by Willamette Industries.

Soil maps in this survey may be copied without permission. Enlargement of these maps, however, could cause misunderstanding of the detail of mapping. If enlarged, maps do not show the small areas of contrasting soils that could have been shown at a larger scale.

Cover: Typical area of Yellowstone soils and Rock outcrop in foreground and Keel and Hummington soils in center. Three Sisters Mountains in background mark the western boundary of Lane County.

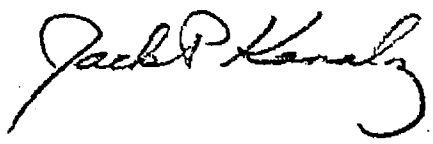
Foreword

This soil survey contains information that can be used in land-planning programs in Lane County Area, Oregon. It contains predictions of soil behavior for selected land uses. The survey also highlights limitations and hazards inherent in the soil, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

This soil survey is designed for many different users. Farmers, ranchers, foresters, and agronomists can use it to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the survey to plan land use, select sites for construction, and identify special practices needed to insure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the survey to help them understand, protect, and enhance the environment.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are shallow to bedrock. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. Broad areas of soils are shown on the general soil map. The location of each soil is shown on the detailed soil maps. Each soil in the survey area is described. Information on specific uses is given for each soil. Help in using this publication and additional information are available at the local office of the Soil Conservation Service or the Cooperative Extension Service.



Jack P. Kanalz
State Conservationist
Soil Conservation Service

APPENDIX D

This is a scanned version of the text of the original Soil Survey report of Lane County Area, Oregon, issued September, 1987. Original tables and maps were deleted. There may be references in the text that refer to a table that is not in this document.

Updated tables were generated from the NRCS National Soil Information System (NASIS). The soil map data has been digitized and may include some updated information. These are available from http://soildatamart.nrcs.usda.gov.

Please contact the State Soil Scientist, Natural Resources Conservation Service (formerly Soil Conservation Service) for additional information.

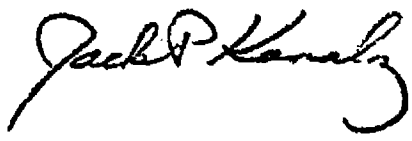
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Jack P. Kanalz
State Conservationist
Soil Conservation Service

Lane County

Public Works

LANE COUNTY
RURAL COMPREHENSIVE PLAN

WORKING PAPER
Agricultural Lands (Nov. 1981)

WORKING PAPER - AGRICULTURAL LANDS

I. INTRODUCTION

A. Purpose of Working Paper

The purpose of the Agricultural Land working paper is to address Statewide Planning Goal No. 3 (Agricultural Lands). It discusses: 1) the need to preserve agricultural lands; 2) Statewide Goal No. 3 - what it says and what is required for compliance with the Goal; 3) natural characteristics of agriculture in Lane County; 4) certain economic and social characteristics of agriculture in Lane County; 5) definition of commercial farm units; and 6) the County's role in creating an acceptable program for goal compliance, including suggested Policies as a starting point for Policy development.

B. Abstract

1. Statewide Planning Goal No. 3 requires the preservation and maintenance of agricultural lands. Local governments must inventory agricultural lands, employ a standard of minimum lot sizes that are appropriate for the continuation of the existing commercial enterprise within the area, and apply exclusive farm-use zoning to agricultural lands.

2. Upon review, LCDC found that Lane County's Plan and zoning, as it applied to agricultural lands, did not meet requirements of Goal No. 3.

3. Lane County's variety of natural physical characteristics is reflected in a diverse agricultural industry. Conditions range from intensely farmed lands to less intensely used pastureland and woodlots. Physical characteristics include topographic, climatic, and soils, which are examined in this working paper.

4. The US Soil Conservation Service's Land Capability Classification System and Important Farmland Inventory are presented as a basis to agricultural land designations.

5. Economic and social characteristics of Lane County agriculture, such as: farm composition, crops, farm sales and income, production trends, marketing and employment are discussed as additional factors affecting farming in the County.

6. Existing commercial farm enterprises are identified and discussed according to Assessment and Taxation Agricultural Land Rent Zones.

C. Need to Preserve Agricultural Lands

Besides acknowledging that agricultural land must be preserved in order to comply with Goal No. 3, there is the legislative agricultural land

use policy adopted by the 1973 Legislative Assembly (see text of policy in Appendix A). In summary, the policy states the public purposes for preserving agricultural land are:

- Maintenance of open space constitutes an important physical, social, aesthetic and economic asset.

- The agricultural land base is in limited supply and must be maintained to support the agricultural economy and to feed the people of the state and nation. Farming is often an exporter of goods and therefore adds to the basic income of the state and local areas. Farming also supports other businesses such as food processors, warehouses, farm implement dealers, feed stores, hardware stores, grocery stores, etc.

- Urban development into rural areas creates unnecessary public costs, conflicts between farm and non-farm activities and the loss of open space and natural beauty. Farm lands retain natural systems and natural processes such as wetlands, watersheds, aquifer recharge areas, floodplains, and wildlife habitats, all of which benefit urban and rural areas alike. Urban sprawl costs public money because of less efficient use of public facilities. Public costs can be controlled by controlling the timing, rate, or location of urban development. Farmers tend to irritate non-farm residents, and non-farm residents tend to irritate farmers, because of normal practices and lifestyle conducted by both.

- Application of exclusive farm use zoning limits alternatives to the use of land, but this is offset through such practices as tax deferral programs (reduction in taxes), exemption from certain special district tax assessments, and prohibition against restrictive local ordinances of accepted farm practices.

II. STATEWIDE PLANNING GOAL 3*

Statewide Planning Goal 3 reads as follows:

Goal: To preserve and maintain agricultural lands.

Agriculture lands shall be preserved and maintained for farm use, consistent with existing and future needs for agricultural products, forest and open space. These lands shall be inventoried and preserved by adopting exclusive farm use zones pursuant to ORS Chapter 215. Such minimum lot sizes as are utilized for any farm use zones shall be appropriate for the continuation of the existing commercial agricultural enterprise with the area. Conversion of rural agricultural land to urbanizable land shall be based upon consideration of the following factors: (1) environmental, energy, social and economic consequences; (2) demonstrated need consistent with LCDC goals; (3) unavailability of

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* The following discussion is taken from the published Goal No. 3, LCDC Policy Papers on Goal No. 3, Land Use Board of Appeals and other Court decisions, and information from Oregon State University Extension Service.

an alternative suitable location for the requested use; (4) compatibility of the proposed use with related agricultural land; and (5) the retention of Class I, II, III and IV soils in farm use. A governing body proposing to convert rural agricultural land to urbanizable land shall follow the procedures and requirements set forth in the Land Use Planning goal (Goal 2) for goal exceptions.

(See Appendix B for Goal definition of agricultural land and farm use)

Goal requirements are as follows:

1) Inventory of agricultural lands including:

   a) Class I-IV soils, and

   b) "Other lands" that are: i) suitable for farm use taking into consideration certain factors (see Appendix B); and ii) adjacent or nearby lands necessary to permit farming practices in the area. This category must consider soil classes outside of classes I-IV which are suitable for grazing, and lands needed for the conduct of accepted farming practices.

2) Provide for the preservation of agricultural lands exclusive of those lands already committed or developed with non-farm uses. The required method of preservation of inventoried agricultural land is the application of a farm use zone that qualifies under ORS 215 (Exclusive Farm Use Zone-EFU).

3) Employ a standard of minimum lot sizes that are "appropriate for the continuation of the existing commerical agricultural enterprise within the area". This standard must be applied when approving the creation of new parcels and dwellings, and development of preexistng lots (lots created prior to the zoning of land EFU.)

   The standard can be applied in various ways:

   a) One fixed acreage size.

   b) Different fixed sizes for different types of farm activities (crops or location).

   c) No minimum lot size, but lot sizes determined on a case-by-case basis in accordance with performance standards.

   In determining the minimum lot sizes it is necessary to consider: types of crops grown in the area, yields, acres in production, existing processing and marketing practices, type of farms (practices and crops), and amount and type of land needed (includes the entire farm unit, not just the individual parcel).

   A minimum lot size determination is necessary inasmuch as the EFU zone requires that: 1) divisions of land that create lots smaller than the minimum farm standard are considered non-farm parcels; 2) dwellings are allowed outright only on farm parcels; dwellings on non-farm parcels are subject to review pursuant to specific criteria (ORS 215.213(3)); and 3)

creation of non-farm parcels are subject to the same review. New dwellings on pre-existing lots cannot be allowed outright, subject to Senate Bill 419.

Commercial farm parcels are not specifically defined, however, a recent Land Use Board of Appeals decision found that the "farm use" definition from the statute (ORS 215.203) is not adequate as the standard for commerical farm parcels (LUBA No. 81-21, January 13, 1981).

In explaining the concept of a commercial agricultural unit, the LCDC Goal 3 policy paper states that a commercial agricultural operation is one which will: 1) contribute in a substantial way to the area's existing agricultural economy; and 2) help maintain agricultural processors and established farm markets. In other words, the commercial agricultural enterprise of an area not only includes the crops grown but also includes the marketing system from processing to selling. Furthermore, the marketing system can only exist on volumes of produce. There is a presumption that commercial agricultural enterprises may be supported by less than full-time farmers, but not maintained by those operators. Prime consideration in determining a lot size appropriate for the continuation of the existing commercial agricultural enterprise in an area is the amount and type of land needed for a given farm unit. It is LCDC's policy that acreage homesites, even though they relate to farm use in a peripheral or secondary sense, are not to be considered commercial agriculture for the purpose of determining minimum lot sizes.

In summary, in order to meet compliance with Goal No. 3, a county should:

1) Inventory agricultural lands and commerical agriculture enterprises in the county by determining:

   a) The types of agriculture conducted.

   b) The location of different types of agriculture in the county.

2) Apply EFU zone to agricultural land.

3) Establish a minimum lot size(s) for commerical agricultural enterprise(s) for each type of agriculture. For example, if it can be determined that the substantial volume of produce is produced by farm units of a given size or by farms with a given sale volume, and that a typical farm is so many acres, then the typical farm acreage would be considered the minimum lot size for the purpose of establishing a farm unit or non-farm unit.

   A jurisdiction may choose not to pre-determine a minimum lot size(s) for farm units, but instead review each land use action on a case-by-case basis. In this case the same information would have to be generated to meet the requirements of Goal No. 3.

   In its review of materials submitted in September, 1980, for acknowledgement of the County Comprehensive Plan, the Oregon Land Conservation and Development Commission concluded that Lane County did not comply with Statewide Goal 3, based on the following items:

- The agricultural land inventory was deficient as it did not assess "other lands suitable for farm use" and "adjacent or nearby lands."

- None of the County's farm zones are qualified exclusive farm use zones pursuant to ORS Chapter 215.

- The County failed to designate all agricultural lands for farm use.

- The County's farm zones did not meet the Goal 3 standard on minimum lot sizes.

- None of the zones ensures that farm-related dwellings will be only on lots appropriate for commercial agriculture. Dwellings must be sited as either farm or nonfarm dwellings subject to the appropriate review standards.

To address the above issues, the LCDC adopted the following requirements:

In order to comply with Goal 3, Lane County must:

- Inventory all agricultural lands as defined by Goal 3.

- Designate all agricultural lands for farm use and zone Exclusive Farm Use pursuant to ORS Chapter 215. Any agricultural lands designated or zoned for nonresource uses requires a plan amendment and Exception to Goal 3.

- Amend the EFU-20, A-1, and A-2 zones to be qualified exclusive farm use zones pursuant to ORS Chapter 215. This requires that:

  a. Only the permitted and conditional uses authorized by ORS 215.203 and 215.213 be allowed;

  b. All divisions of land be reviewed pursuant to ORS 215.263; and

  c. The A-2 zone review the creation of nonfarm lots against the standards in ORS 215.213(3).

- Provide justification that any minimum lot size used is "appropriate for the continuation of the existing commercial agricultural enterprise." If the existing 20-acre lot size cannot be justified then the County must either establish a new minimum lot size consistent with the size of existing commercial farms or enact a method of review that ensures that all farm use land divisions will meet the Goal's standard as set forth in 5 below. (Based on the 1978 Census of Agriculture data, it is doubtful the 20-acre lot size can be justified.)

- Amend the A-1 and A-2 zones to require that new farm parcels and dwellings on existing parcels will be "appropriate for the continuation of the existing commercial agricultural enterprise." Each zone must be amended to:

a. Include appropriate factors to determine what constitutes "commercial" agriculture;

b. Require that only commercial farm units are used to determine what are the appropriate lot sizes;

c. Define the area to be considered when making these determinations; and

d. Remove all provisions that exempt pre-existing lots from review.

Agricultural/Forestry Goal Interrelationship

In an inventory of agricultural lands and forest lands there will be many instances where land will meet Goal definitions for both categories. According to Oregon Land Conservation and Development Commission's policy, farm and forestry uses are compatible and either designation may be made without taking an exception to the other Goal. The factors used to select a designation need to be documented in the Plan. The policies within the Plan will support one designation over another depending on the situation.

The County should consider the following items in addressing overlapping lands:

a. Identify Agricultural and Forest Lands Goal definitions and inventories.

b. Segregate overlapping lands from single resource lands.

c. Apply evaluations of local circumstances and Goal factors to overlapping lands to determine appropriate designation.

d. Designate overlapping lands as agricultural, forest or agricultural/forest through Plan policies and diagrams.

e. Protect designated lands for appropriate uses through the zoning ordinance and other implementation measures.

It is intended that agricultural and forest practices be able to coexist without mutual interference while conserving those resource lands.

III. FACTORS AFFECTING AGRICULTURE IN LANE COUNTY

A. Natural Characteristics*

1. Physical Setting

Within Lane County, agricultural land is generally located at the

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* The following discussion is based on "An Agricultural Atlas of Lane County," "Resource Data for Agricultural Development in Linn, Lane and Benton Counties," and published and unpublished information from the US Soil Conservation Service.

head of the Willamette Valley plus narrow irregular strips of land that extend up the tributaries of the Willamette River, scattered stream bottomlands; and flat-bottomed coastal estuaries. The Willamette Valley floor, with an average elevaton of 400 feet, is fairly flat and slopes downward gradually toward the north. The valley floor consists mainly of alluvial soils, with slightly higher terraces also of alluvial origin.

The eastern part of the County is a heavily forested high lava plateau with an elevation of 5,000 to 6,000 feet. Peaks of the Cascade Range rise to 10,000 feet and more at the extreme eastern edge of the County. The mostly timbered plateau slopes downward toward the west, ending at the edge of the Willamette Valley where slopes drop abruptly to the valley floor from heights of 2,000 feet and more.

West of the Willamette Valley is the Coast Range with an average elevation of about 1,000 feet; some peaks reach an elevation of 2,500 feet. The mostly timbered Coast Range is cut by the highly meandering course of the Suislaw River, along which some agricultural activity is conducted.

The Coastal area consists of the estuary of the Suislaw River, extensive sand dune areas, and areas where steep slopes of the Coast Range abruptly meet the Pacific Ocean. Consequently, little agricultural activity exists.

2. Climate

The climate of Lane County is dominated by moist, mild air from the Pacific Ocean. Winters are cloudy and wet, with mild temperatures. In January, the average monthly temperature decrease inland and upslope as follows: Coast 45°F; Coast Range Valleys 41°F; Willamette Valley 39°F; and Cascades (5,000') 28° F. Eighty percent of the annual precipitation comes in the winter months from October through March, also decreasing inland but increasing upslope. The Coast receives about 80 inches of rainfall, the Coast Range over 100 inches, the Valley about 40 inches, and up to 80 inches in the high Cascades. Gentle rains extending over many days are characteristic.

Although the air masses are generally from the northwest in the summer, they are relatively moist but stable. Along the coast the weather is cool and foggy. Inland the temperatures increase and rainfall is limited to an occasional thunder storm in the higher parts of the Cascades. The average monthly temperatures in July varies as follows: Coast 61°F; Coast Range Valleys 64°F; Willamette Valley 66°F; and Cascades (5,000') 59°F.

Relatively constant, mild temperatures in the Upper Willamette Valley produce a long growing season. However, when air does flow into the Valley from the east, dry, hot weather develops in the summer causing extreme fire hazard, while in the winter this situation causes clear, sunny days and cool, frosty nights. The average period for non-freezing temperatures is April 9 to October 31. The average growing period between killing frosts is

approximately 210 days.

The Valley, partially in the rain shadow of the Coast Range, has the least precipitation, the mildest winters, and the longest, driest summers. Growing season precipitation totals about six inches and during the summer months (July, August, September) averages less than one inch per month. Irrigation is necessary to obtain maximum production for many crops. Temperature, growing season, amount of sunshine and character of soils are all favorable for the growth of a variety of crops.

3. Agricultural Land Base

Knowledge of soil types is basic to understanding and defining agricultural lands. As Goal 3 defines agricultural land in terms of the Land Capability Classification System of the US Soil Conservation Service (SCS), a brief discussion of the system is in order.

SCS has identified approximately 210 mapping units or soil types within the County as is indicated in Appendix C. Those soil types are grouped into eight classes; the higher the class number the more severe the limitations for farm uses. The classification system is based on soil characteristics such as permeability, water-holding capacity, depth, inherent fertility, texture, structure, wetness, acidity, flooding, slope, and climatic conditions as they influence use, management and productivity of the land.

Subclasses designate types of limitations:

e = susceptible to wind or water erosion;

w = wetness or prolonged frequent inundation from overflow;

s = soil problem (depth, stoniness, texture); and

c = climatic limitation.

The classification can be placed in two divisions:

1) Class I through Class IV are well-suited for cultivation.

2) Class VI through Class VIII are best suited for range, forestry, and wildlife.

The classes are defined as follows:

Class I soils have few or no limitations or hazards. They may be used safely for cultivated crops, pasture, range, woodland or wildlife.

Class II soils have few limitations or hazards. Simple conservation practices are needed when cultivated. They are suited to cultivated crops, pasture, range, woodland or wildlife.

Class III soils have more limitations and hazards than those in Class II. They require more difficult or complex conservation practices when cultivated. They are suited to cultivated crops, pasture, range, woodland or wildlife.

Class IV soils have greater limitations and hazards than Class III, still more difficult or complex measures are needed when cultivated. They are suited to cultivated crops, pasture, range, woodland or wildlife.

Class V soils are not found in Lane County.

Class VI soils have severe limitations or hazards that make them generally unsuited for cultivation. They are suited largely to pasture, range, woodland or wildlife.

Class VII soils have very severe limitations of hazards that make them generally unsuited for cultivation. They are suited to grazing, woodland or wildlife.

Class VIII soils and landforms have limitations and hazards that prevent their use for cultivated crops, pasture, range or woodland. They may be used for recreation, wildlife or water supply.

Completion of the Soil Survey of Lane County publication by SCS is some years away. However, the necessary field work has been completed along with a preliminary draft of the text and a general soil map by associations. Lacking the SCS Soil Survey, cartographers in the County Planning Divison under the direction of the Lane County Soil Scientist in close cooperation with the local SCS office, produced soil maps at a scale of 1" = 3000'. The resulting maps, while not at the degree of accuracy as an SCS-produced County survey would be, represent the best County-wide information available and will remain so until publication of the Lane County Soil Survey by SCS. These maps are on file in the Lane County Department of Environmental Management offices in Eugene.

While the Land Capability Classification System has certain advantages, it does have some drawbacks. The primary one being the classes relate management suitability and not soil productivity. As the Lane County Agricultural Advisory Committee recognized soil productivity as the most important factor that affected the agricultural value of land in Lane County, it was suggested that the SCS Important Farmlands Inventory supplement the classification system.

For the purpose of this report, three categories of farmland based on the Farmlands Inventory are depicted:

a. Prime Farmlands

Prime Farmlands are defined by the US Department of Agriculture as land that is best suited to producing food, feed, forage, fiber, and oilseed crops. It has the soil quality, growing season, and moisture supply needed to economically produce a

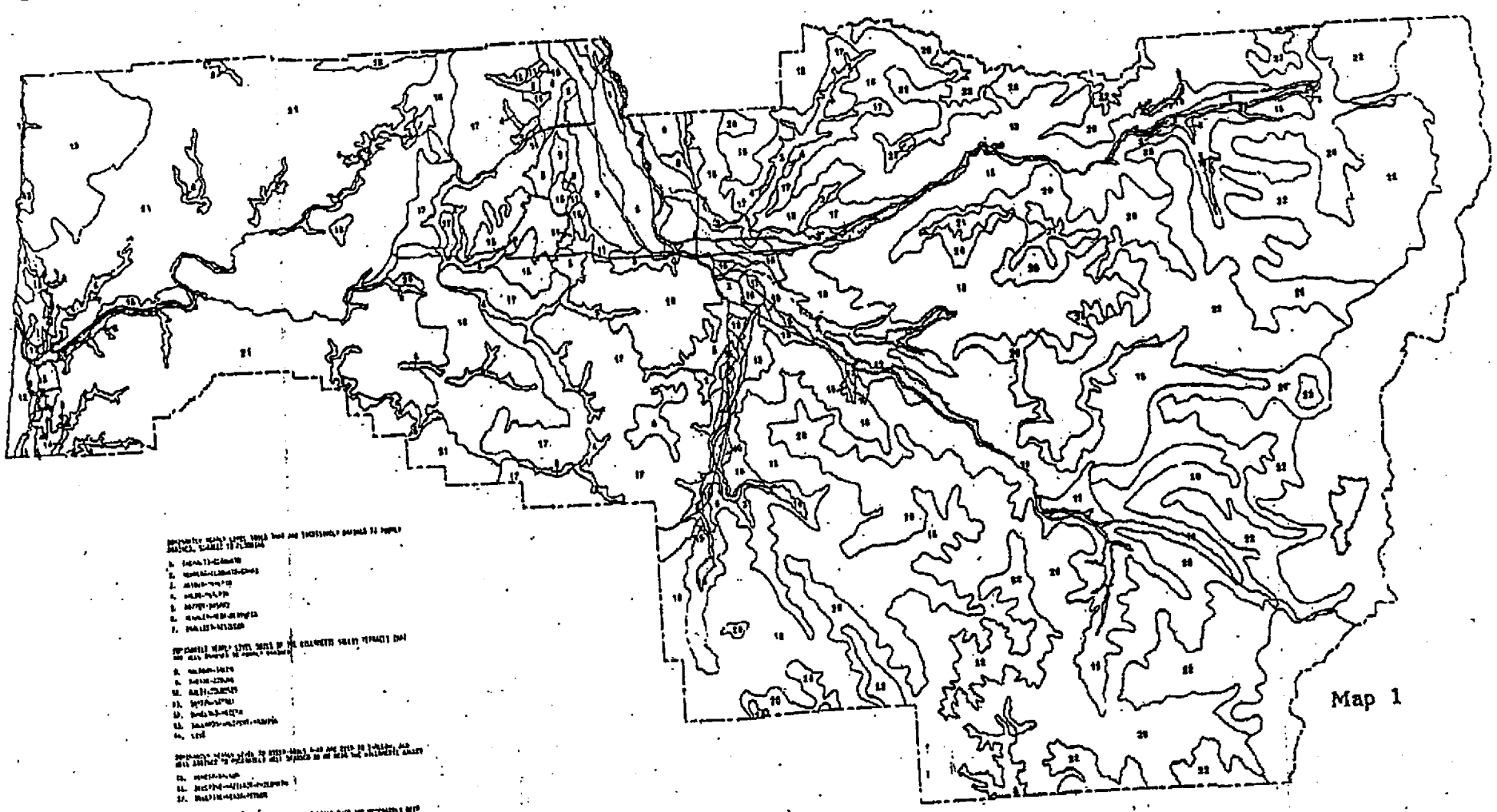
substantially high yield of crops when it is treated and managed using acceptable farming methods. Prime farmland produces the highest yields with minimal inputs of energy and economic resources, and farming it results in the least damage to the environment.

According to an unpublished SCS report, about 160,000 acres or less than six percent of Lane County meets the soil requirements for prime farmland. These lands are located mostly in the central portion of the County, in and adjacent to the Willamette Valley, mainly in Map Units 1, 2, 3, 8, 15 and 17 of the General Soil Map shown on Map I. Approximately 60,000 acres of this prime farmland is used for crops, 40,000 acres are in forest, nursery and Christmas tree production, and 15,200 acres are in urban areas. Crops grown on this land (mainly corn, snapbeans, wheat, peppermint and filberts) account for an estimated 50 percent of Lane County's total agricultural income for 1980. The loss of this prime farmland to other uses puts pressure on marginal lands, which are less suited for cultivation, and usually less productive.

Soil map units that make up prime farmland in Lane County are listed below. These map units are prime farmland except when the use is urban or built-up land, or fail to meet the criteria indicated by footnote.

Map Symbol	Map Unit 1/	Approx. Acres	Capability Class
80A	Abiqua silty clay loam, 0-3% slopes	5,210	I
81B	Abiqua silty clay loam, 3-5% slopes	1,230	IIe
480B, 635C	Bellpine silty clay loam, 3-12% slopes	15,850	IIIe
31A	Chapman loam	3,800	I
30A	Chehalis silty clay loam, occasional overflow	9,300	IIw
4A	Cloquato silt loam	5,170	IIw
270A 201A	Coburg silty clay loam	13,480	IIw
234A	Holcomb silty clay loam 2/	1,560	IIIw
385B	Jimbo silt loam, 0-3% slopes	2,550	I
550B	Jory silty clay loam, 2-12% slopes	4,560	IIe
351A	Linslaw loam 2/	5,700	IIIw
260A	Malabon silty clay loam	15,350	I
90A	McAlpin silty clay loam, 0-3% slopes	11,860	IIw
40A	McBee silty clay loam	5,200	IIw
420B, 425B	Nekia silty clay loam, 2-12% slopes	4,860	IIIe
10A	Newberg fine sandy loa	8,970	IIw
11A	Newberg loam	9,490	IIw
120A, 121A	Pengra silt loam, 1-4% slopes 2/	5,070	IIIw
290A	Salem gravelly silt loam	7,550	IIs
335B	Salkum silt loam, 2-6% slopes	5,060	IIe
330B	Salkum silty clay loam, 2-8% slopes	5,160	IIe
322A, 320A	Sifton gravelly loam 3/	650	IIIs
360B	Veneta loam, 0-7% slopes	11,930	IIe
361B	Veneta Variant silt laom, 0-7% slopes	1,320	IIe
490B	Willakenzie clay loam, 2-12% slopes	2,500	IIIe
203A	Woodburn silt loam, 0-3% slopes	215	IIw

GENERAL SOILS MAP



Map 1

TAKEN FROM A PRELIMINARY SOIL MAP FROM U.S. DEPT. OF AGRICULTURE SOIL CONSERVATION SERVICE

1/ Urban and built-up is defined to be any continguous unit of land 10 acres or more in size that is used for residences, industrial sites, commerical sites, construction sites, institutional sites, public administrative sites, railroad yards, small parks, cemeteries, airports, golf courses, sanitary landfills, sewage treatment plants, water control structures and spillways, shooting ranges, and so forth.
2/ Where drained sufficiently for cropland.
3/ Where there is a developed irrigation water supply that is dependable and of adequate quality.

b. Additional Farmland of Local Importance

This is land, in addition to prime farmland, that is of local importance for the production of food, feed, fiber, forage, and oilseed crops. This category includes those that are near prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods. Some may produce as high a yield for selected crops as prime farmland, if conditions are favorable.

Map Symbol	Map Unit	Approx. Acres	Capability Class
	Willamette Valley Foothills		
421C	Nekia silty clay loam, 12-20% slopes	15,520	IIIe
481C	Bellpine silty clay loam, 12-20% slopes	58,520	IIIe
331C	Salkum silty clay loam, 8-16% slopes	2,160	IIIe
551C	Jory silty clay loam, 12-20% slopes	6,940	IIIe
491C	Willakenzie clay loam, 12-20% slopes	7,320	IIIe
	Coast Range Valleys, Terraces and Gently Sloping Foothills:		
235B	Lint silt loam, 0-7% slopes	1,120	IIe
236C	Lint silt loam, 7-12% slopes	1,510	IIIe
560S	Honeygrove silty clay loam, 3-25% slopes	31,050	VIe
575S	Preacher loam, 0-25% slopes	10,950	VIe
395B	Meda loam, 2-12% slopes	10,650	IIIe
380B	Ellertsen silt loam, 0-7% slopes	1,590	IIe
150A	Nehalem silt loam	5,950	IIw
130A	Nekoma silt loam	7,170	IIIw
145A	Nestucca silt loam	5,830	IIw
	Large Wet Terraces (Ryegrass areas):		
280A	Awbrig silty clay loam	9,890	IVw
60A	Bashaw clay	9,650	IVw
55A	Conser silty clay loam	4,200	IIIw
221A	Dayton silty loam, clay substratum	4,280	IVw
110A	Natroy silty clay loam	15,170	IVw
111A	Natroy silty clay	2,100	IVw
100A	Waldo silty clay loam	7,550	IIIw
50A	Wapato silty clay loam	2,320	IIIw

c. Other Class I through VII Soils*

This category of soils includes soil types identified as Classes I, II, III and IV not listed as prime farmland nor additional farmland of local importance, and Classes VI and VII if the USDA Soil Conservation Service, OR-1 Soil Interpretive Guide Forms (OR-1) indicate crop or pastureland potential. Classes VI and VII are included based on their suitability for pasture, range, and woodland, however, the inclusion of any soil within this category must be mitigated according to their actual current condition and suitability for farm uses. For example, if the soils are covered by vegetation such as timber or scrub growth; or irrigation is not feasible; or certain climatic conditions limit the duration of the growing season; or an excessive amount of energy would be needed to render the soils usable; then the soils would not be designated for agriculture.

Soil map units included in this category are listed below:

Map Symbol	Map Unit	Capability Class
1A, 2A	Camas gravelly sandy loam	IV w
20A	Brallier Muck, (drained)	IV w
135A	Willanch Fine Sandy Loam	III w
140A	Brenner Silty Clay Loam	III w
165B	Haffinger-Jimbo Complex, 0-5% slopes	VI s
166B	Jimbo-Haflinger Complex, 0-5% slopes	III s
204A	Heceta Fine Sand, 0-2% slopes	VI w
214B	Bandon Sandy Loam, 0-7% slopes	VI s
215C	Bandon Sandy Loam, 7-12% slopes	IV e
225A	Yaquina Loamy Fine Sand	IV w
230B	Bullards-Ferrelo Complex, 0-7% slope	III s
231C	Bullards-Ferrelo Complex, 7-12% slopes	III e
232D	Bullards-Ferrelo Complex, 12-30% slopes	IV e
237D	Lint Silt Loam, 12-20% slopes	IV e
250D	Neskowin Silt Loam, 12-20% slopes	IV e
251F	Neskowin Silt Loam, 20-40% slopes	VI e
256D, 255C	Hembre Silt Loam, 5-25% slopes	VI e
300A	Oxley Gravelly Silt Loam	III w
301A	Courtney Gravelly Silt Clay Loam	IV w
350A	Noti Loam	IV w
374C	Dixonville-Philomath-Hazelair Complex, 3-12% slopes	VI e
375S, 523C	Dixonville-Philomath-Hazelair Complex, 12-35% slopes	VI e
406D	Dixonville Silty Clay Loam, 12-30% slopes	IV e

* This category is not included in SCS report. It is included in this report for the purpose of a complete agricultural land inventory.

407B	Marcola Cobbly Silty Clay Loam, 2-7% slopes	IV	s
408C	Dixonville Silty Clay Loam, 3-12% slopes	III	e
409E	Dixonville Silty Clay Loam, 30-50% slopes	VI	e
414C, 415C	Philomath Cobby Silty Clay, 3-12% slopes	VI	s
416C, 416S	Philomath Silty Clay, 3-12% slopes	VI	e
422E, 422D, 427E	Nekia Silty Clay Loam, 20-30% slopes	IV	e
430B	Steiver Loam, 3-12% slopes	III	e
431C	Steiver Loam, 12-20% slopes	IV	e
445B	Saturn Clay Loam	III	s
446B	Briedwell Cobby Loam, 0-7% slopes	III	e
469C	Ritner Cobbly Silty Clay Loam, 2-12% slopes	IV	s
474E, 470S, 405C	Ritner Cobbly Silty Clay Loam, 12-30% slopes	VI	s
475C, 365B	Panther Silty Clay Loam, 2-12% slopes	VI	w
477C	Dupee Silt Loam, 3-20% slopes	III	e
482E, 637E	Bellpine Silty Clay Loam, 20-30% slopes	IV	e
492D	Willakenzie Clay Loam, 20-30% slopes	IV	e
500C, 500S	Chehulpum Silt Loam, 3-12% slopes	VI	e
501E, 501F	Chehulpum Silt Loam, 12-40% slopes	VI	e
515S, 510B	Hullt Loam, 2-30% slopes	IV	e
511C, 512D			
520B	Hazelair Silty Clay Loam, 2-7% slopes	III	e
521C	Hazelair Silty Clay Loam, 7-20% slopes	IV	e
552E	Jory Silty Clay Loam, 20-30% slopes	IV	e
561K	Honeygrove Silty Clay Loam, 25-50% slopes	VI	e

In summary, agricultural land is defined as all Class I through IV soils and all Class VI and VII except those areas subject to limiting factors. The final determination will be made at the time land use designations are assigned to the Comprehensive Plan Diagram.

4. Irrigation Capabilities

According to a 1972 Upper Willamette Resource Conservation and Development Project report, there are approximately 243,200 acres of land suitable for, or having a potential for, irrigation in Lane County. This figure is based on soil interpretations and when mapped it is evident that the best suited land for irrigation is located along the Main stem, Coast Fork and Middle Fork of the Willamette River, along the McKenize River and the Mohawk River and Long Tom River.

The 1978 US Agriculture Census reports 32,002 acres of irrigated land, 26,424 acres of which is cropland. As noted in Table IV those irrigated lands primarily produce vegetables, peppermint, and hay.

The above noted 1972 report states that conditions present in the Valley are conducive for additional irrigation. The irrigation suitability map reveals that many more thousands of acres can be irrigated and thereby expand crop potentials.

B. Economic and Social Characteristics

I. Farm Composition

The 1978 US Census of Agriculture reported 1,709 farms* within Lane County, occupying 266,765 acres or 9.2 percent of the land area. There were 983 farms with sales of $2,500 or more, occupying 226,380 acres resulting in an average farm size of 230 acres. Value of land and buildings of farms with sales of $2,500 or more averages $1,579 per acre; up from $716 per acre in 1974. Following are various statistical data about Lane County farms.

TABLE I
Selected Agricultural Characteristics in Lane County, All Farms, 1978-1969

Item	Unit	1978	1974	1969
Farms	No.	1,709	1,592	1,840
Land in Farms	Acres	226,765	264,123	270,587
Average Size	Acres	156	166	147
Harvested Cropland	Acres	89,102	85,060	79,403
Pasture Cropland	Acres	31,263	38,589	43,046
Woodland	Acres	68,302	67,609	81,465
Pastured Woodland	Acres	32,905	--	--
Pasture, other land	Acres	58,539	--	--
Pasture, all types	Acres	122,707	--	--
Irrigated Land	Acres	32,002	27,026	28,809
Operators				
Full owners	No.	1,310	1,214	1,383
	Acres	115,134	121,614	144,459
Part owner	No.	289	303	356
	Acres	124,005	123,723	111,462
Reside on Farm	No.	1,459	1,258	1,526
Reside Off Farm	No.	161	166	176
Organization				
Individual or Family	No.	1,479	--	--
	Acres	164,333	--	--
Partnership	No.	194	--	--
	Acres	78,733	--	--
Corporation	No.	34	--	--
Value of Land and Buildings				
Average per acre	Dollars	1,677	774	550

Source: 1978 and 1974 Census of Agriculture, US Department of Commerce, Bureau of Census.

* US Census of Agriculture defines a farm as any place from which $1,000 or more of agricultural products were sold or normally would have been sold during the census year. This definition differs from that used in the 1959, 1964, and 1969 censuses. Land in farms is an operating unit and includes land owned and rented from others.

TABLE II
Selected Agricultural Characteristics in Lane County,
Farms with sales of $2,500 or more, 1978-1969

Item	Unit	1978	1974	1969
Farms	No.	983	782	770
Land in Farms	Acres	226,380	213,730	200,831
Average Size	Acres	230	273	261
Harvested Cropland	Acres	82,745	77,509	70,704
Pasture Cropland	Acres	22,468	24,786	28,506
Woodland	Acres	50,228	46,791	56,497
Pastured Woodland	Acres	25,236	23,967	34,363
Pasture, other land	Acres	55,103	52,375	29,087
Pasture, all types	Acres	102,807	101,128	91,956
Irrigated Land	Acres	29,937	24,895	26,316
Operators				
Full owners	No.	670	498	449
	Acres	81,473	79,994	90,280
Part owners	No.	229	229	264
	Acres	118,972	116,707	100,019
Reside on farm	No.	824	586	641
Reside off farm	No.	111	94	65
Organization				
Individual or family	No.	803	696	662
	Acres	128,861	152,128	149,257
Partnership	No.	147	72	99
	Acres	75,250	49,893	46,565
Corporation	No.	32	14	7
	Acres	--	11,709	4,569
Value of Land and Buildings				
Average per acre	Dollars	1,579	716	530

Source: 1978 and 1974 Census of Agriculture, US Department of Commerce, Bureau of Census

TABLE IIa

Farms by Value of Sales and Occupation: 1978
Farms With Sales of $20,000 or More

Occupation	Number	Total
Farming	209	
Other than farming	53	262

Farms With Sales of Less Than $20,000

Occupation	Number	Total
Farming	375	
Other than farming	1,075	1,447

Source: 1978 Census of Agriculture, US Department of Commerce, Bureau of Census

The number of farms with sales of $2,500 or more increased 26 percent between 1974 and 1978. The total acreage for the same farms increased only 6 percent. The disparity in the percentage of increase is due to an exceptionally large increase in the number of farms in the size category 1 to 9 acres, and generally in the increase of farms less than 100 acres in size. This would also account for some of the increase in the per acre value of land and buildings from 1974 to 1978, as the unit value of land tends to increase the smaller tracts become. The smaller tracts have more value as home sites than for agricultural use.

In 1978, the type of farm organization for farms with sales of $2,500 or more, consisted of the following percentages: individual or family - 82%; partnership - 15%; corporation and others - 3%. The relative percentages for acreage within each type are: 57%; 33%; and 10%, respectively. These statistics indicate that 82 percent of the owners (individual or family category) control only 57 percent of the land.

In 1978, 88 percent of the operators of farms with $2,500 or more reported residing on the farm operated. Ninety percent of the operators of all farms reside on the farm. The percentage of farmers residing on the farm remained essentially unchanged between 1969 and 1978.

From the above listed statistics and other data from the 1978 Census of Agriculture, the character of farms and land in farms in Lane County can be summarized as:

1) Farms consist of acreages ranging from 1-9 acres to several thousand acres;

2) 55 percent of the land is in farms with harvested cropland in farm units of 500 acres or more;

3) 87.5 percent of land reported is in farm units of 100 acres or more;

4) Farm operators generally reside on the farm;

5) The value of land and buildings more than doubled between 1974 and 1978; and

6) 48 percent of land in farms is cropland, 46 percent is pasture, 26 percent is woodland, 12 percent is irrigated and 4 percent is non-productive (house lot, wasteland, etc).

2. Crops

Major components of field seed crops include 20.2 million pounds of ryegrass, 2.3 million pounds of fescue, and 814,600 pounds of orchardgrass produced on 17,309 acres, 2,630 acres, and 1,277 acres, respectively. Within the vegetable category beans, beets, carrots, and sweet corn occupy 3,210 acres, 920 acres, 368 acres, and 3,690 acres, respectively. Within the grain category, wheat and oats account for more than 16,000 acres and over one million dollars of products sold. Harvested hay crops involve 27,800 acres. Vegetables are grown on over 8,000 acres with a market value of 4.9 million dollars. Within the livestock-poultry category, cattle and calves, poultry and poultry products, and dairy products amount to sales of over 16 million dollars. See Tables III and IV for details.

TABLE III
Livestock and Poultry Inventory and Sales
Lane County, 1978

	Number	Sales $1,000	Farms
Cattle and calves			
Inventory	36,604		1,076
Sales	20,247	6,367	992
Dairy Products			
Sales		4,726	53
Hogs and pigs			
Inventory	2,830		143
Sales	4,955	253	129
Sheep and lambs			
Inventory	22,546		218
Sales	17,017		196
Goats			
Inventory	586		59
Sales	378	32	35

Horses and ponies				
Inventory	7,369			488
Sales	385		406	125
Broilers and other meat-type chickens				
Inventory	567,258			50
Sales	3,701,891			30

Source: 1978 Census of Agriculture, US Department of Commerce, Bureau of Census.

TABLE IV
Selected Crops Inventory
Lane County, 1978

Crop	Farms	Acres Harvested	Quantity	Acres Irrigated
Corn				
Grain or seed (bushels)	3			
Silage (tons)	25		22,640	1,012
Wheat (bushels)	128	13,183	432,320	267
Oats (bushels)	88	3,039	127,225	
Barley (bushels)	25	801	37,520	
Hay, all (tons)	802	27,852	52,645	5,846
Field seed crops	45	22,525		1,673
Sugar beet seed	7	428	1,038,711	428
All vegetables	121	8,361		8,360
Orchards (fruits and nuts)	334	4,417		997
Apples (bushels)	119	122	338,909	
Peaches (bushels)	40	118	521,895	
Grapes (lbs)	38	53	20,859	
Filberts (lbs)	14	2,091	4,179,528	
Walnuts (lbs)	66	263	223,412	
Berries	72	312		305
Strawberries	28	186	1,023,672	184
Mint Oil	4	6,865	300,127	6,865
Nursery and Greenhouse Products	32	351		158

Source: 1978 Census of Agriculture, US Department of Commerce, Bureau of Census.

3. Value of agricultural products

Lane County ranks [illegible] for farm marketing income, ninth for crop products sold, and [illegible] for poultry and poultry products sold.

In 197[illegible] products sold for all farms [illegible] of $2,500 or more [illegible] $41,928,000. [illegible] sold directly to individuals [illegible] for all farms, and $702,0[illegible] or 2% and 1.7%,

respectively.

In 1978, there were 726 farms with sales of less than $2,500. These farms amounted to 42 percent of all farms, but accounted for only 2% of the total value of agricultural products sold. The same percentage existed in 1974.

These figures indicate that a very small portion of agricultural products are sold directly for human consumption, and conversely, the vast majority of agricultural products are processed through the marketing system. Also, the greatest share of agricultural products are produced on farms with sales of $2,500 or more.

TABLE V
Market Value of Agricultural Products Sold
Lane County, 1978

Market value of agricultural products sold	$42,808,000
Crops	24,668,000
Grains	1,761,000
Field seeds, hay, forage, and silage	5,168,000
Vegetables, sweet corn, and melons	4,922,000
Fruits, nuts, and berries	2,891,000
Nursery and greenhouse products	4,720,000
Other crops	5,206,000
Livestock, poultry and their products	18,140,000
Poultry and poultry products	5,058,000
Dairy products	4,726,000
Cattle and calves	6,367,000
Hogs and pigs	253,000
Sheep, lambs, and wool	1,071,000
Other livestock and livestock products	666,000

Source: 1978 Census of Agriculture, US Department of Commerce, Bureau of Census.

TABLE VI
Estimated Gross Agricultural Income ($1,000) 1976-1980
Lane County

Item	1976	1980	Percentage Change
All grains	$ 3,475	$ 4,945	+42
All hay crops	637	482	-24
Grass and legume seeds	3,080	4,533	+47
Field crops (ind. mints)	5,149	3,652	-29
Tree fruits and nuts	1,627	3,665	+125
Small fruits (berries)	536	713	+33
Vegetables	4,840	5,309	+10
Horticulture*	3,200	5,970	+87
Farm-Forest Products*	2,300	5,575	+142
Cattle and calves	3,673	7,110	+94
Hogs	270	304	+13
Sheep and lambs	677	1,155	+71
Dairy products	4,210	6,600	+57
All chickens	4,158	6,222	+50
Eggs-chicken	1,532	1,480	-3
Other livestock and poultry	508	756	+49
	$39,872	$58,471	+47

* In 1979, Christmas trees sales were included with Horticulture, prior to 1979 their income was included with Farm-Forest Products.

Source: Estimated Cash Receipts from Farm Marketing (Annual Reports), Lane County Agriculture, OSU Extension Service.

4. Production Trends

In addition to listing estimated acres, yields, and agricultural farm income the annual Estimated Cash Receipts from Farm Marketing reports briefly describe fluctuations of agricultural production and income. From the annual reports between 1976 and 1980, the following trends are apparent:

Grains - Acreage in wheat decreased, but yields and prices increased resulting in an increase of income.

Due to exceptional yield in wheat, higher acreage and higher prices, the income within the grains category reached a high value of $6,896,000 in 1979. Production in 1980 dropped drastically from 1979 (from 90 bushels per acre to 70 bushels per acre) due to disease.

Oats - A doubling of acreage, increases in yields and prices resulted in a doubling of income.

Wheat, oats and barley are commonly rotated with other crops such as peppermint and vegetables.

Hay crops - An overall decrease in income was caused by decreased in acreage and yields. Prices increased slightly except for corn silage which remained the same ($20.00 per ton).

Seed production - Although the number of acres decreased slightly, increases of yields of tall fescue, annual and perennial ryegrasses and a slight increase in prices resulted in an overall increase of income. Income from seed production was lowest in 1978 ($3,002,000) due to lower yields and lower prices in some cases.

Field crops - A substantial overall decrease in income from field crops is primarily a result of a drop in the price of peppermint as production was greater than demand. Income from peppermint reached a high of $4,710,000 in 1977 when the price per unit ($14.55 per pound) was the highest. The price dropped to $9.00 per pound in 1980, with an estimated total value of $2,970,000.

Tree fruits and nuts - A doubling of income for this category is largely due to nearly a doubling of yield and prices of filberts. Income from apples has risen, while income from cherries, prunes and plums has dropped.

Vegetables - Loses in incomes from beans and beets has been offset by increases in sweet corn and carrots. Slight decreases in acreage, yields, and prices caused the drop of income for beans and beets, while an increase in acreage and prices have aided the value of sweet corn and carrots.

Small fruits - A substantial increase in this category is aided by increases in acreage, and prices of strawberries, caneberries, and blueberries. Income from grapes has risen by 700% but a value of only $58,000.

Livestock - Except for a slight decrease in income from chicken eggs, all items listed under livestock and poultry products have increased their value mainly due to increased prices.

Although gross incomes are higher overall, the price of every item of production input has also risen. The Extension Service reports that net income for farmers has not increased to the same degree as gross income.

5. Food processing and markets.

The production, processing and marketing of agricultural products is a complex industry. A variety of products, farm practices, and techniques, and regulations help to complicate the picture. For example, agricultural products may be produced for: a) direct consumption on farms where grown or other direct human and/or animal consumption; b) delivery to assembly points where products are graded and stored for future use; and c) delivery directly to a processing plant. Additionally, products may move across county/state lines in either raw or finished form. The marketing process will vary not only between commodities but also for the same commodity. The extent of movement of farm products from farm to consumer depends upon the type of commodity, its perishability, major market outlets and transportation costs. Some recent comments from Agripac, Inc., the major processor in Lane County, illustrate such mechanisms for vegetable and fruit processing and marketing.

"At the present time, growers and processors are faced with increasing costs which are difficult to pass on to the consumer because of a surplus of vegetables. The profit margin for processors is small. Market areas are becoming smaller and more regional in nature due to energy and shipping costs. The western grower can no longer compete with the midwest in supplying the eastern market.

With major companies cutting back, there is a trend toward grower-owned co-op processors. Growers are forced to buy the processing facilities in order to provide a home for the product they raise. This is probably the major factor in maintaining processors. Vegetable production can be very profitable for the grower if he has a market. Today, to get to the market, growers have to be the processor.

Changing market conditions influence processors. At the present time, there is surplus canning capacity because people are not buying canned vegetables as in the past. However, the demand for frozen foods is increasing and freezer capacity is limited. Processors are shifting fom canned to frozen and some obsolete plants are being closed.

Product quality is an important factor. The consumer demands top quality products. Many older plants are limited in their ability to process a quality vegetable. The equipment has to be updated or the plants are closed. This modernizing of equipment can be difficult for smaller companies because of today's interest rates.

Prime agricultural land in sufficient quantity is a factor. There is a critical mass of land required to support a food processor. Soil types have to be Class I or II to economically raise vegetables.

Other factors such as environmental restrictions, government regulations, tax systems, location, weather patterns and labor costs also play an important part in maintaing processors.

Currently, the Agripac plants in Eugene and Junction City process green beans, wax beans, romano beans, beets, carrots, corn, sour cherries, sweet cherries, rhubarb, and squash amounting to 95,800 tons of products."

6. Farm Employment

Given the variety and seasonality of farm operations, tenure of operators and the type of organization, it is difficult to assign employment figures to farming. Nevertheless, the following information from the 1978 Census of Agriculture is presented in an attempt to depict the nature of farm employment.

Tenure of Operator
- Full time - 1,310
- Part time - 289
- Tenants - 110

Characteristics of Operators
- Male - 1,582
- Female - 127
- Average age - 50.3

Operators by Principal Occupation
- Farming - 584
- Other - 1,125

Hired Farm Labor
- Number of Farms - 662
- Expenses - $4,876,000

Farms Reporting Only Workers Working Less than 150 Days
- Number of Farms - 534
- Workers - 2,650
- Expenses - $633,000

Farms Reporting Only Workers Working 150 Days or More
- Number of Farms - 35
- Workers - 240
- Expenses - $1,292,000

Farms Reporting Workers Working
- Number of Farms - 93
- Less than 150 days - 1,211
- 150 days or more - 283
- Expenses - $2,951,000

Directly tied to agricultural production is the area's food products manufacturing industry. Again, employment in this sector of the economy varies within a given year, however, generally employment has remained at the same level and it is expected to remain at about 1,200 employees (annual average) in the future. During months of peak production over 1,600 are employed.

7. Markets

As was implied earlier, markets for Lane County farm products range from on-the-farm consumption to international destinations. More specifically these are:

Grains - Most grain is transported to Portland; some may be temporarily stored locally. From Portland, grains reach state, national and international markets.

Hay crops - A large portion of the hay crop is marketed locally; much remains on the same farm.

Seed production - Following harvesting, seed is processed and warehoused locally awaiting shipment to national and international markets.

Field crops - For the most part, this category involves mint for oil. Peppermint is processed and stored locally. Its destination is primarily to chewing gum producers across the nation, with some used by toothpaste manufacturers.

Tree fruits and nuts - Sweet cherries, sour cherries, filberts and walnuts are processed locally for national markets. Much of the apples, peaches and other fruits is consumed locally.

Vegetables - Over 94,000 tons of vegetables will be processed through Lane County Agripac plants to be marketed locally and regionally. Fresh market produce is sold through roadside stands or as "u-pick".

Small fruits - For the most part, berries are consumed locally through roadside stands and "u-pick" fields. Although still small in production numbers, grapes for wine is increasing. Currently, it appears wine distribution is local.

Livestock - Most of the steers and calves produced in the County are exported from the County to feeder lots in the region.

Dairy products - Milk produced in the County is generally marketed locally.

Sheep and lambs - Lambs sold for meat are marketed regionally.

Some of the major agricultural processors are listed in Appendix IV.

8. Agricultural Land Rent Zones

In order to administer the State agricultural land tax program, the local Assessor must establish farm use values for agricultural lands. In cases where values for agricultural land must be determined by utilizing an income approach, rent rates for various portions of the County are calculated. In Lane County, three different rent zones (based on rent rates) are recognized and mapped. The zones are described as: 1) Row Crops; 2) Grains and Grass Seed; and 3) Range Land. The rent values for these zones are based on three factors: water availability, predominant soil type, and distance to market.

Within each zone there is a range of rent values depending upon the above-noted factors. Each zone has a predominance of certain soil types and type of agriculture, hence, the descriptive headings. According to the Assessor's Office, the rent rates and zones are generally accepted by the farming community inasmuch as the rates are reviewed and accepted by a Farm Review Board, which consists of farmers. Rent zones are depicted on Map II.

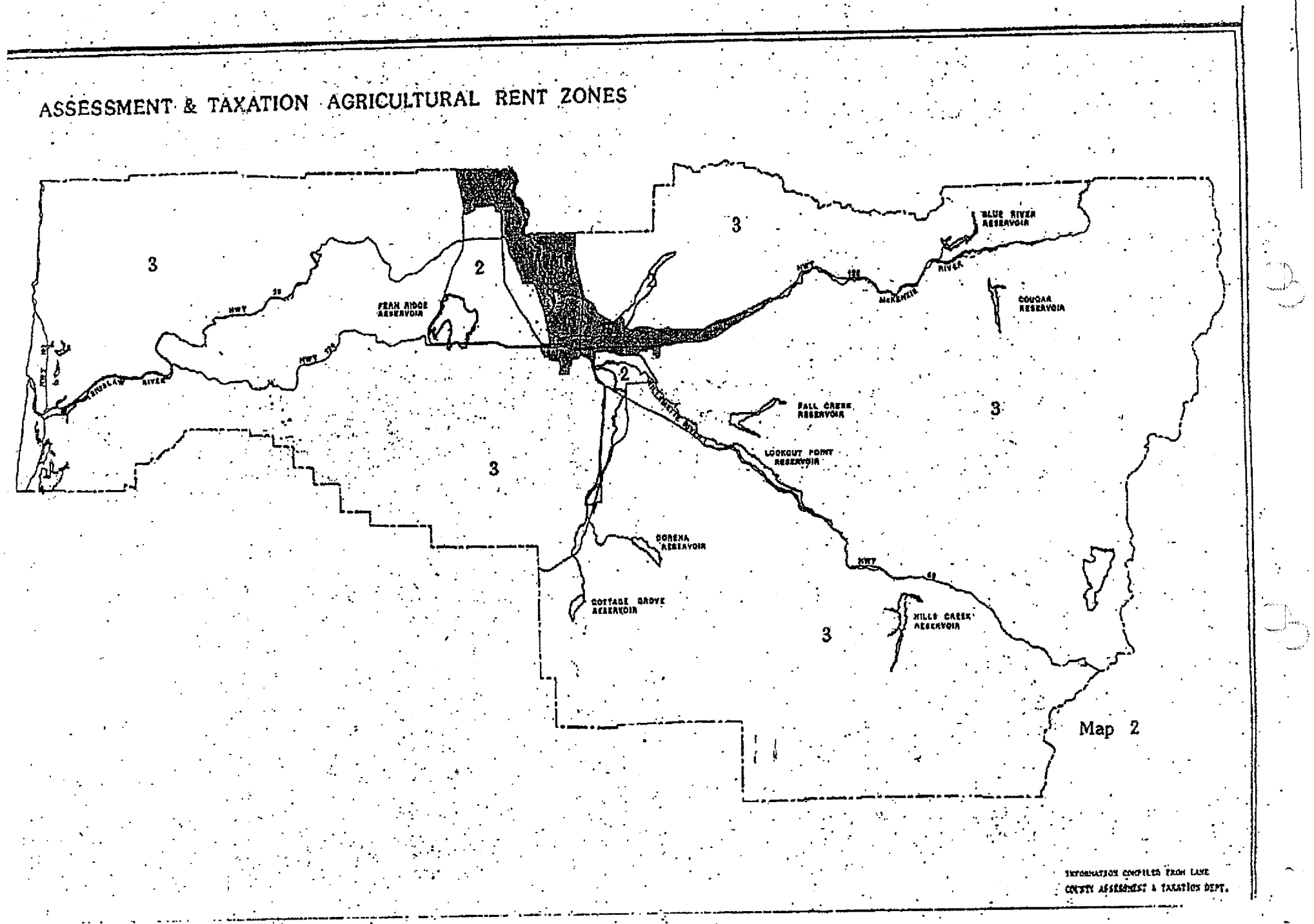
Zone 1 consists of an area located generally along the Willamette River from Eugene north to the County line and along the McKenzie River from its confluence with the Willamette River eastward to Leaburg. Irrigation is presently utilized or the potential for irrigation exists. The area includes processing plants in Eugene and Junction City, and is near plants in Harrisburg. The population center of Eugene/Springfield also serves as a market place for fresh produce. Six soil associations are found in the zone, primarily: Chehalis-Cloquato; Newberg-Cloquato-Camas; Malabon-Salem; and Awbrig-Coburg.

Zone 2 values are found in three locations: 1) between Territorial Road and Highway 99 - River Road, and from Route F to Junction City; 2) from South Springfield south along the Coast Fork Willamette River to Cottage Grove; and 3) along the Mohawk River. Irrigation is used to a lesser degree than zone 1, but does have suitable soil types for irrigation. Much of this zone is situated on the following soil associations: Natroy-Bashaw and Awbrig-Coburg.

The remainder of the County comprises Zone 3. Within Zone 3, less than favorable conditions exist in all or some of the three determining factors.

These zones are pragmatic evidence that there exists a variety of agricultural types within the County. The program has been developed over the years by farm experts, and is adjusted annually.

ASSESSMENT & TAXATION AGRICULTURAL RENT ZONES



Map 2

INFORMATION COMPILED FROM LANE COUNTY ASSESSMENT & TAXATION DEPT.

V. DEFINING EXISTING COMMERCIAL FARM ENTERPRISE

Current farming practices including crops grown, size of operations, location of fields and other features which comprise commercial farm enterprises are based on years of adjustment. Constant adjustment occurs as a result of individual operator's decisions in response to changing market conditions, type of land at his/her disposal and the desire to stay in agriculture. The commercial farmer will attempt to organize operations to be productive in the long term as well as the short term. This involves investment in time and equipment and assembly of acreage, and requires a certain level of management skills.

As noted earlier, in determining minimum lot sizes that are appropriate for the continuation of this existing commercial agricultural enterprise within the area, several factors must be considered which are discussed in this report.

Prior to examining acreage requirements of commercial farm units for the Lane County situation, a brief review of other efforts appears relevant, as they (singularly and combined) helped in formulating the direction of this report.

- Douglas County's agricultural report stated that 50 acres was the minimum unit needed for farms (such as horticultural agriculture) on better soils; and 200 acres is needed for grazing and rangeland operations.

- Polk County's agricultural report presented ranges of acreage for various types of farms:

grain or seed production	1,000 - 1,100 acres
filbert	100 - 200 acres
small fruit	80 - 90 acres
orchard	200 - 300 acres
row crops	100+ acres
horticulture	15 - 20 acres
livestock and grain	260 - 300 acres

- A recent correspondence from Agripac, Inc., indicated that the average Agripac row crop farmer farms about 400 acres. Farms range in size from 200 to over 600 acres (only 2/3 of their row crop land will be in vegetable production during any one year; 1/3 of the land will be in a rotation crop such as wheat).

- In a 1975 publication, Smith stated that a minimum farm size can be inferred from changes in farm numbers in different size categories in the US Census of Agriculture. His study was based on data from a midwest state where more homogeneous farm operations occur as opposed to the Lane County situation where a variety of farm products are grown very often within the same operation.

- Recently, in an unpublished report, the Oregon State University Extension Service proposed a method of determining an appropriate minimum lot size for various types of agriculture. The system involved obtaining data on the volume of products sold, the number of farms and farm sizes within various categories of volume sold. For example, if 60 percent of the total volume sold for a particular type of agriculture product was sold by farms having sales of $100,000 and the typical size of that type of operation in this sales volume category is 100 acres, then 100 acres would be considered the minimum lot size for a commerical farm enterprise for that type of agricultural operation.

- In Oregon State University Extension Service Circular 983, "What Size Farm Does it Take to Earn Your Living in Oregon?", budget summaries for various types of farms for three levels of disposable annual incomes are presented. One type of farm which would be located in Lane County is a vegetable, wheat and small fruit operation. And for this type of farm to produce a disposable family income (before income taxes) of $15,000 (approximate 1979 median family income in the US) 75 acres was used. This summary does not include costs for a dwelling. So if a dwelling were to be placed on the farm, its investment and maintenance would have to be added to the ledger. It must also be noted that the circular is oriented to different levels of family income and not necessarily to commercial agriculture as described in Goal 3 or the LCDC policy paper.

In attempting to relate the amount and type of land needed for a given type of farm unit within Lane County, it became apparent that such information was not readily available. In retrospect, this is not unusual given the variety of crops, and the diversity of farm practices and physical settings found in Lane County.

Lacking a correlation between crops grown and the number of acres involved with various farming units, along with any definitive information on spatial concentrations of types of agriculture, the Planning Division with the aid of the Extension Service, conducted a mail survey in an attempt to gain such information.

A questionnaire was mailed to 809 addresses from the Extension Service mailing list, and 208 responses were tabulated. The questionnaires consisted of four sections: 1) lands owned, lands rented from others and to others, and total acreage in operation; 2) location of operation; 3) types and acreage of crops and pasture; and 4) disposition of the majority of products, either to processors or direct to consumer.

The responses from within Lane County represent about 12 percent of the number of farmers listed in the 1978 Census of Agriculture and accounted for 19 percent of the acreage in farms. The following information was derived from the responses.

1. Of the total acreage involved in the farms, 47 percent was land rented from others. Farm operations range in size from one acre to 2000+ acres.

2. Fifty-three percent of the respondents sold a majority of their products to processors as opposed to directly to consumers. However, farms

l. Pasture - cattle and sheep

m. Pasture - dairy products

4. The vast majority of farms have more than one product type. Typically, different associations of product types occur within different areas (rent zones), as will be indicated below.

5. Plotting the location of the reported types of agricultural products on a map of this County reveals a vague pattern of spatial concentration of agricultural types. Overlaying Assessment and Taxation Rent Zones* helps define a pattern. In order to quantify the character of the distribution of agricultural types, product types within each rent zone were ranked according to: 1) number of occurrences and 2) total acreage, for all farms and for farms indicating a majority of products sold to processors. The following is a comparison of the above-noted data (product types are listed in decreasing order of occurrence and acreage for the upper one-half of the respective listing):

Associations For All Farms Reporting

Rent Zone 1

Frequency: Orchards, Grain, Vegetables, Field Crops, Hay - Cattle*, Woodlot

Acreage: Grain, Grass Seed, Vegetables, Field Crops, Orchards, Woodlot, Other Seed

Rent Zone 2

Frequency: Orchards, Hay, Grain, Cattle, Woodlot, Small Fruit - Vegetables

Acreage: Grain, Grass Seed, Orchard, Hay, Woodlot, Vegetables, Field Crops

Rent Zone 3

Frequency: Woodlot, Cattle, Hay, Orchard, Grain, Small Fruit - Miscellaneous

Acreage: Woodlot, Cattle, Hay, Grass Seed, Grain

* For the purpose of describing spatial concentrations of types of agriculture, Assessment and Taxation Rent Zones are considered a valid system inasmuch as: 1) it is based on an intimate knowledge of farming practices, 2) it has been developed over many years, allowing annual adjustments in rates within more or less fixed boundaries, and 3) it reflects economic conditions.

Associations for Farms Reporting a
Majority of Products Sold to Processors

Rent Zone 1

Frequency: Grain, Orchards, Vegetables, Field Crops, Other Seed, Hay - Woodlot - Cattle

Acreage: Grain, Vegetables, Grass Seed, Field Crops, Orchard, Woodlot, Other Seed

Rent Zone 2

Frequency: Orchard, Grain, Hay, Grass Seed, Woodlot - Cattle, Field Crops

Acreage: Grain, Grass Seed, Hay, Orchard, Field Crops, Vegetables, Woodlot

Rent Zone 3

Frequency: Woodlot, Cattle, Hay, Orchard, Grain, Grass Seed, Field Crops - Vegetables - Christmas trees

Acreage: Woodlot, Cattle, Hay, Grain, Grass Seed, Dairy, Vegetables

From the data derived from the farm survey, average farm size, and the 20 and 25 percentiles of total acreage, were calculated for farms reporting a majority of products sold to processors by rent zone. These figures will reveal some quantitative indicators of acreage involved in commercial farm enterprises within three different areas of the County.

Rent Zone	Average Farm Size (acres)	20 Percentile+ (acres)	25 Percentile+ (acres)
1	390	423	550
2	225	160	210
3	235	190	200

* Hyphenated words denote equal ranking.

\+ Percentiles were calculated in an attempt to justify a value more reflective of a minimum acreage for commercial operations other than average farm size. Average farm size indicates a central tendency of the data and not necessarily a value associated with an acceptable minimum threshold.

The above-listed data reveals:

1. Agricultural operations vary between Rent Zones.

2. There is a close association between all farms and farms reporting a majority of products sold to processors (commercial farms) within the same Rent Zone.

3. The average farm size (total land in farm operation, contiguous and noncontiguous lands) varies between Rent Zones.

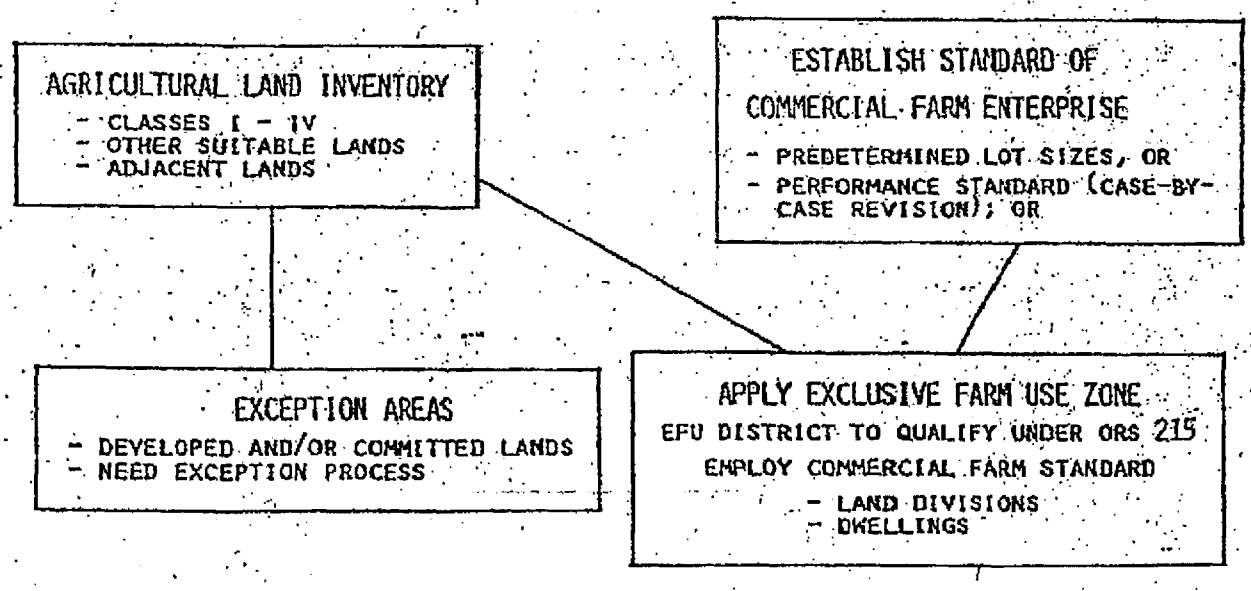
4. Percentile values are larger than average farm size because there are many parcels with small acreage compared to fewer large parcels containing the bulk of farm acreage. This fact reinforces data from the 1978 US Census of Agriculture.

5. The 20th percentile indicates that 80 percent of the acreage within the commercial farms category are in farm units larger than 423 acres in Rent Zone 1; 160 acres in Rent Zone 2; and 190 acres in Rent Zone 3.

VI. COUNTY'S ROLE

Information contained in the report as it is currently published or as it may be amended in the future will be the basis for setting the direction of policies and implementing measures which will constitute the County's program to preserve and maintain agricultural lands.

At this point a review of the interrelations between the Goal and statute requirements would help focus on those items needing attention. The following diagram and explanation illustrates the interrelationships.



- Agricultural lands must be inventoried.

The County's previous effort emphasized two categories of agricultural land; important, and limited, with another category of "marginal agricultural land" being designated rural land. Goal No. 3 does not allow different treatment for differing types of agricultural land; specifically, pasture or grazing land is considered agricultural land and must be inventoried and be zoned accordingly. Section III, A.3. describes the SCS Land Capability Classification System and presents three categories of farmland based on the SCS Farmland Inventory. These three categories are intended to represent the inventory of agricultural land in Lane County.

- Goal No. 3 requires that the standard for minimum lot sizes in EFU zones must be "appropriate for the continuation of existing commercial agricultural enterprise within the area."

As Noted in Section II,3. executing this requirement involves:

1. Commerical agriculture enterprise(s) must be identified and only such enterprises can be used in setting the standard.

2. The distinction between commercial farm parcels and noncommercial farm parcel is needed for:

   a) approving land divisions
   b) issuing building permits for residences and other structures for farm uses only.

3. All lands involved in farm operation must be considered when evaluating commercial farm parcels. This includes lands owned plus land rented; contiguous and noncontiguous.

4. Establishing a method of applying minimum lot standard, either fixed acreage(s) or case-by-case process, or a combination of the two.

   Currently, Lane County's Agricultural Policy No. 3 states that performance standards, rather than arbitrary minimum parcel requirements, should be emphasized. Attempts have been made to develop an exclusive farm use zone that is flexible and would reflect local variations in farming types. Thus far, a workable zoning district has not been developed. This may have been caused by a lack of definitive information about the spatial distribution of farming types and perhaps a general reluctance by the County to impose large lot zoning to any property. Regardless of why a standard or process has not been found workable, it would be well to review the pros and cons of applying fixed minimum lot size(s) or a case-by-case process. The following matrix ranks features of each system in three levels: good, fair, poor. Following the matrix is a brief discussion of each feature.

Feature	Fixed Minimum Lot Size(s)	Case-by-Case process
Predictability	Good	Poor
Flexibility	Fair	Good
User Comprehension	Good	Fair
Efficiency		
- Time	Good	Fair
- Expense	Good	Poor

Predictability. This feature has to do with the fact that a land owner knows in advance how much area is needed per parcel for a land division or to locate a farm dwelling. With a fixed standard, the area requirement is known. With no fixed standard, every time a party wished to locate a dwelling on a parcel or wished to divide land, an inventory of all farms within a given radius would have to be conducted. A property owner would not know in advance what parcel size would be acceptable.

Flexibility. This feature recognizes that farming is a variable enterprise in terms of natural physical conditions, crops grown, and other conditions. A variation in any one condition could create different needs in the amount of land needed for farming. A fixed parcel size would presumably be applied to a large area, with local differences not taken into account. All farms would be treated uniformly. A case-by-case process would treat each farm operation as a unique enterprise and would be evaluated on the basis of other operations in the more immediate vicinity.

User Comprehension. A comprehendible requirement is one that can be understood by everyone without confusion as to what is being required plus ... how a flexible system even works would be harder to fathom. As noted above, a fixed minimum parcel size would be known before or after the need for any permits. A flexible standard could result in neighboring farms having different requirements based on different inventory areas. The farm operator could question requirements and not willing to accept the difference particularly if his requirement is larger than his neighbor's.

Efficiency. Efficiency can be looked at in terms of time and expense, but in the final analysis both involve costs to the property owner and the County. A fixed parcel size standard would involve relatively less time and expense inasmuch as a request for a dwelling or land division either does or does not meet the standard. In a case-by-case process time and expense would be involved first of all in an inventory of farms and secondly in a public review process. Such a process includes appeal rights by anyone who may disagree with the inventory or any decision. In other words, every application for a dwelling or land division is appealable, which involves time delays and expense, both for the applicant and County.

This review of the pros and cons of two ways of applying the standard for minimum parcel sizes in EFU zones is intended to aid the reader in determining which system ought to be utilized in the County's efforts to

comply with Goal 3 zoning requirements.

- Inventoried agricultural lands must be zoned Exclusive Farm Use (EFU) unless they are designated forest land or the lands qualify for an exception according to Goal No. 2 procedures. Furthermore, the County's EFU zone(s) must qualify under ORS 215.

ORS 215 lists permitted farm and nonfarm uses. Dwellings are permitted outright if in conjunction with a farm use. Nonfarm dwellings are subject to review and must meet certain criteria. Goal No. 3 through the minimum lot size standard, establishes the threshold for farm uses.

VII. Policies

A. Current Policies

Although the Oregon Land Conservation and Development Commission concluded that Lane County did not comply with statewide Goal 3, it did state that the submitted Policies were adequate. For that reason those Policies* are listed below:

1. Encourage agricultural activities by preserving and maintaining agricultural lands through the use of exclusive farm use zones.

2. Reserve the use of the best agricultural soils exclusively for agricultural purposes.

3. Insure that zoning districts applied to agricultural lands encourage valid agricultural practices in a realistic manner; emphasis shall be placed on performance rather than arbitrary requirements such as minimum parcel sizes.

4. Distinguish prime and locally important lands from other agricultural lands. Use planning and implementation techniques that reflect appropriate uses and treatment for each type of land.

5. Encourage irrigation, drainage and flood control projects that benefit agricultural use with minimum environmental degradation in accordance with existing state and federal regulations.

6. Discourage the use of drainage projects to convert planned agricultural and other natural resource land to nonnatural resource land uses.

7. Some agricultural land in Lane County is not suitable or available for agricultural use by nature of being built upon, committed to, or needed for nonagricultural uses. The County shall plan and zone such lands for nonagricultural uses by using the exceptions process of LCDC Goal 2, Part II.

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* Reprinted from County Goals and Policies Tabloid, 1980.

8. Provide maximum protection to agricultural activities by minimizing activities, particularly residential, that conflict with such use. Whenever possible, planning goals, policies and regulations should be interpreted in favor of agricultural activities.

9. Actively explore better methods of identifying agricultural lands than those currently used. Such methods should accurately reflect the productive capacity of the land taking into account fertility, suitability for management, climatic conditions, availability of water, land use patterns and accepted farm practices.

10. Such minimum lot sizes or land division criteria as are used in exclusive farm use zones shall be appropriate for the continuation of the existing commercial agricultural enterprise in the area.

11. Conversion of rural agricultural land to urbanizable land shall follow the process and criteria set forth in LCDC Goal 3.

B. Comments

Policy 3 implies performance standards on a case-by-case basis. If the County decides to apply fixed and minimum lot size(s), this policy will have to be amended.

Because of their acceptance by LCDC, existing policies should be given consideration for continued use with the possible exception of the Policy 3 as noted above.

Appendix A

"Agricultural Land Use Policy"

(see Oregon Revised Statute 215.243)

(1) Open land used for agricultural use is an efficient means of conserving natural resources that constitute an important physical, social, aesthetic and economic asset to all of the people of this state, whether living in rural, urban or metropolitan areas of the state.

(2) The preservation of a maximum amount of the limited supply of agricultural land is necessary to the conservation of the state's economic resources and the preservation of such land in large blocks is necessary in maintaining the agricultural economy of the state and for the assurance of adequate, healthful and nutritious food for the people of this state and nation.

(3) Expansion of urban development into rural areas is a matter of public concern because of the unnecessary increases in costs of community services, conflicts between farm and urban activities and the loss of open space and natural beauty around urban centers occurring as the result of such expansion.

(4) Exclusive farm use zoning as provided by law, substantially limits alternatives to the use of rural land, and with the importance of rural lands to the public, justifies incentives and privileges offered to encourage owners of rural lands to hold such land in exclusive farm use zones.

Appendix B

Definitions from Statewide Planning Goal No. 3

AGRICULTURAL LAND -- in western Oregon is land of predominantly Class I, II, III and IV soils and in eastern Oregon is land of predominantly Class I, II, III, IV, V and VI soils as identified in the Soil Capability Classification System of the United States Soil Conservation Service, and other lands which are suitable for farm use taking into consideration soil fertility, suitability for grazing, climatic conditions, existing and future availability of water for farm irrigation purposes, existing land use patterns, technological and energy inputs required, or accepted farming practices. Lands in other classes which are necessary to permit farm practices to be undertaken on adjacent or nearby lands, shall be included as agricultural land in any event.

More detailed soil data to define agricultural land may be utilized by local governments if such data permits achievement of this goal.

FARM USE -- is as set forth in ORS 215.203 and includes the non-farm uses authorized by ORS 215.213.

Appendix C

SOIL MAPPING UNITS

Lane Soil Survey Area

Map Symbol	Mapping Unit (Soil Name)	Capability Class
1A, 2A	CAMAS Gravelly Sandy Loam, occasionally flooded	IVw
4A	CLOQUATO Silt Loam	IIw
5A	PITS	
8A	BEACHES	
10A	NEWBERG Fine Sandy Loam	IIw
11A	NEWBERG Loam	IIw
20A	BRALLIER Muck, drained	IVw
21A	BRALLIER VARIANT Muck	Vw
30A	CHEHALIS Silty Clay Loam, occasionally flooded	IIw
31A	CHAPMAN Loam	I
40A	McBEE Silty Clay Loam	IIw
50A, 51A	WAPATO Silty Clay Loam	IIIw
55A	CONSER Silty Clay Loam	IIIw
60A, 61A	BASHAW Clay	IVw
72K	DUNE LAND	VIIIe
72KS	WALDPORT Fine Sand, thin surface, 0-30% slopes	VIIe
75A	RIVERWASH	VIIIw
76A	FLUVENTS, nearly level (Alluvial Land)	VIIw
77K	TERRACE ESCARPMENT (Ochrepts & Umbrepts, very steep)	VIe
80A	ABIQUA Silty Clay Loam, 0-3% slopes	I
81B	ABIQUA Silty Clay Loam, 3-5% slopes	IIe

Map Symbol	Mapping Unit (Soil Name)	Capability Class
90A	McALPIN Silty Clay Loam	IIw
100A	WALDO Silty Clay Loam	IIIw
110A, 223A	NATROY Silty Clay Loam	IVw
111A	NATROY Silty Clay	IVw
120A, 121A	PENGRA Silt Loam, 1-4% slopes	IIIw
130A	NEKOMA Silt Loam	IIIw
135A	WILLANCH Fine Sandy Loam	IIIw
140A	BRENNER Silty Clay Loam	IIIw
145A	NESTUCCA Silt Loam	IIw
150A	NEHALEM Silt Loam	IIw
165B	HAFLINGER-JIMBO COMPLEX, 0-5%	VIs
166B	JIMBO-HAFLINGER COMPLEX, 0-5% slopes	IIIs
203A	WOODBURN Silt Loam	IIw
204A	NECETA Fine Sand, 0-2% slopes	VIw
205C	WALDPORT Fine Sand, 0-12% slopes	VIe
206D	WALDPORT Fine Sand, 12-30% slopes	VIIe
207H	WALDPORT Fine Sand, 30-70% slopes	VIIe
210C	CUPOLA Cobbly Loam, 3-12% slopes	VIs
211D	CUPOLA Cobbly Loam, 12-30% slopes	VIs
214B	BANDON Sandy Loam, 0-7% slopes	IVs
215C	BANDON Sandy Loam, 7-12% slopes	IVe
216D, 217H	BANDON Sandy Loam, 12-50% slopes	VIe
221A, 222A	DAYTON Silt Loam, clay substratum	IVw
225A	YAQUINA Loamy Fine Sand	IVw
230B	BULLARDS-FERRELO COMPLEX, 0-7% slopes	IIIs
231C	BULLARDS-FERRELO COMPLEX, 7-12% slopes	IIIe

Map Symbol	Mapping Unit (Soil Name)	Capability Class
232D	BULLARDS-FERRELO COMPLEX, 12-30% slopes	IVe
233F	BULLARDS-FERRELO COMPLEX, 30-60% slopes	VIe
234A	HOLCOMB Silty Clay Loam	IIIw
235B, 245B	LINT Silt Loam, 0-7% slopes	IIe
236C	LINT Silt Loam, 7-12% slopes	IIIe
237D	LINT Silt Loam, 12-20% slopes	IVe
238F	LINT Silt Loam, 20-40% slopes	VIe
240C	NETARTS Fine Sand, 3-12% slopes	VIe
241D	NETARTS Fine Sand, 12-30% slopes	VIe
250D	NESKOWIN Silt Loam, 12-20% slopes	IVe
251F	NESKOWIN Silt Loam, 20-40% slopes	VIe
252K	NESKOWIN-SALANDER COMPLEX, 40-60% slopes	VIIe
256D, 255C	HEMBRE Silt Loam, 5-25% slopes	VIe
257K	HEMBRE Silt Loam, 25-60% slopes	VIe
260A	MALABON Silty Clay Loam	I
270A	COBURG Silty Clay Loam	IIw
280A	AWBRIG Silty Clay Loam	IVw
290A	SALEM Gravelly Silt Loam	IIs
300A	OXLEY Gravelly Silt Loam	IIIw
310A	COURTNEY Gravelly Silty Clay Loam	IVw
322A, 320A	SIFTON Gravelly Loam	IIIs
330B	SALKUM Silty Clay Loam, 2-8% slopes	IIe
331C	SALKUM Silty Clay Loam, 8-16% slopes	IIIe
335B	SALKUM Silt Loam, 2-6% slopes	IIe
350A	NOTI Loam	IVw
351A	LINSLAW Loam	IIIw

Map Symbol	Mapping Unit (Soil Name)	Capability Class
360B	VENTETA Loam, 0-7% slopes	IIe
361B	VENETA VARIANT Silt Loam, 0-7% slopes	IIe
374C	DIXONVILLE-PHILOMATH-HAZELAIR COMPLEX, 3-12% slopes	VIe
375S, 523C	DIXONVILLE-PHILOMATH-HAZELAIR COMPLEX, 12-35% slopes	VIe
380B	EILERTSEN Silt Loam	IIe
385B	JIMBO Silt Loam	I
395B	MEDA Loam, 2-12% slopes	IIIe
406D	DIXONVILLE Silty Clay Loam, 12-30% slopes	IVe
407B	MARCOLA Cobbly Silty Clay Loam, 2-7% slopes	IVs
408C	DIXONVILLE Silty Clay Loam, 3-12% slopes	IIIe
409F	DIXONVILLE Silty Clay Loam, 30-50% slopes	VIe
414C, 415C	PHILOMATH Cobbly Silty Clay, 3-12% slopes	VIs
415S, 417F	PHILOMATH Cobbly Silty Clay, 12-45% slopes	VIs
416C, 416S	PHILOMATH Silty Clay, 3-12% slopes	VIe
420B, 425B	NEKIA Silty Clay Lom, 2-12% slopes	IIIe
421C, 426C	NEKIA Silty Clay Loam, 12-20% slopes	IIIe
422E, 422D 427E	NEKIA Silty Clay Loam, 20-30% slopes	IVe
423F	NEKIA Silty Clay Loam, 30-50% slopes	VIe
430B	STEIWER Loam, 3-12% slopes	IIIe
431C	STEIWER Loam, 12-20% slopes	IVe
432E	STEIWER Loam, 20-50% slopes	VIe
440S	WITZEL Very Cobbly Loam, 3-30% slopes	VIs
441K	WITZEL Very Cobbly Loam, 30-75% slopes	VIIs
445B	SATURN Clay Loam	IIIs

Map Symbol	Mapping Unit (Soil Name)	Capability Class
446B	BRIEDWELL Cobbly Loam, 0-7% slopes	IIIe
450S	KINNEY Cobbly Loam, 3-20% slopes	VIe
451K	KINNEY Cobbly Loam, 20-50% south slopes	VIe
451KN	KINNEY Cobbly Loam, 20-50% north slopes	VIe
452H	KINNEY Cobbly Loam, 50-70% south slopes	VIIe
452HN	KINNEY Cobbly Loam, 50-70% north slopes	VIIe
453S, 619S 655S	KINNEY Cobbly Loam, slump, 3-30% slopes	VIe
460S	BLACHLY-McCULLY COMPLEX, 3-30% slopes	VIe
461K	BLACHLY Clay Loam, 30-50% slopes	VIe
461KN	BLACHLY Clay Loam, 50-70% slopes	VIIe
462H	McCULLY Clay Loam, 30-50% slopes	VIIe
462HN	McCULLY CLAY LOAM, 50-70% slopes	VIIe
464S	BLACHLY Silty Clay Loam, 3-30% slopes	VIe
465K, 466K	BLACHLY Silty Clay Loam, 30-50% slopes	VIe
469C	RITNER Cobbly Silty Clay Loam, 2-12% slopes	IVs
471K	RITNER Cobbly Silty Clay Loam, 30-60% slopes	VIIs
474E, 470S 405C	RITNER Cobbly Silty Clay Loam, 12-30% slopes	VIs
475C, 365B	PANTHER Silty Clay Loam, 2-12% slopes	VIw
477C	DUPEE Silt Loam, 3-20% slopes	IIIe
480B	BELLPINE Silty Clay Loam, 3-12% slopes	IIIe
481C, 636D	BELLPINE Silty Clay Loam, 12-20% slopes	IIIe
482E, 637E	BELLPINE Silty Clay Loam, 20-30% slopes	IVe
483F	BELLPINE Silty Clay Loam, 30-50% slopes	VIe
484D, 638D	BELLPINE Cobbly Silty Clay Loam, 2-30% slopes	IVe
486S	PEAVINE Silty Clay Loam, 3-30% slopes	VIe

Map Symbol	Mapping Unit (Soil Name)	Capability Class
487K, 488H	PEAVINE Silty Clay Loam, 30-60% slopes	VIe
490B	WILLAKENZIE Clay Loam, 2-12% slopes	IIIe
491C	WILLAKENIZE Clay Loam, 12-20% slopes	IIIe
492D	WILLAKENZIE Clay Loam, 20-30% slopes	IVe
493F	WILLAKENZIE Clay Loam, 30-50% slopes	VIe
496K	ATRING-ROCK OUTCROP COMPLEX, 30-60% slopes	VIIe
500C, 500S	CHEHULPUM Silt Loam, 3-12% slopes	VIe
501E, 500S 501F	CHEHULPUM Silt Loam, 12-40% slopes	VIe
515S, 510B 511C, 512D	HULLT Loam, 2-30% slopes	IVe
516K	HUULT Loam, 30-60% slopes	VIe
520B	HAZELAIR Silty Clay Loam, 2-7% slopes	IIIe
521C	HAZELAIR Silty Clay Loam, 7-20%slopes	IVe
525S	HUMMINGTON Gravelly Loam, 5-25% slopes	VIs
526K	HUMMINGTON Gravelly Loam, 25-50% slopes	VIs
527H	HUMMINGTON Gravelly Loam, 50-75% slopes	VIIs
530S, 531S	MULKEY Loam, 5-25% slopes	VIe
540S	ASTORIA VARIANT Silt Loam, 3-30% slopes	VIe
541K	ASTORIA VARIANT Silt Loam, 30-60% slopes	VIe
543H	FORMADER-HEMBRE-KLICKITAT COMPLEX, 50-80% slopes	VIIe
546S	ASTORIA Silt Loam, 5-30% slopes	VIe
550B	JORY Silty Clay Loam, 2-12% slopes	IIe
551C	JORY Silty Clay Loam, 12-20% slopes	IIIe
552E	JORY Silty Clay Loam, 20-30% slopes	IVe
560S	HONEYGROVE Silty Clay Loam, 3-25% slopes	VIe
561K	HONEYGROVE Silty Clay Loam, 25-50% slopes	VIe

Map Symbol	Mapping Unit (Soil Name)	Capability Class
562S	FORMADER Loam, 3-30% slopes	VIe
563K	FORMADER Loam, 30-60% slopes	VIe
566D, 565D	FENDALL Silt Loam, 3-30% slopes	IVe
567S, 568K	TAHKENITCH Loam, 20-45% slopes	VIe
569H	TAHKENITCH Loam, 45-75% slopes	VIIe
570S	BOHANNON Gravelly Loam, 3-25% slopes	VIe
571K	BOHANNON Gravelly Loam, 25-50% slopes	VIe
572H	BOHANNON Gravelly Loam, 50-90% slopes	VIIe
575S	PREACHER Loam, 0-25% slopes	VIe
576K	PREACHER Loam, 25-50% slopes	VIe
577H	PREACHER-BOHANNON-SLICKROCK COMPLEX, 50-75% slopes	VIIe
580S	DIGGER Gravelly Loam, 10-30% slopes	VIe
581K	DIGGER Gravelly Loam, 30-50% slopes	VIe
582H	DIGGER Gravelly Loam, 50-85% slopes	VIIe
585S	SLICKROCK Gravelly Loam, 3-25% slopes	VIe
586K	SLICKROCK Gravelly Loam, 25-50% slopes	VIe
590S	SALANDER Silt Loam, 12-30% slopes	VIe
600K	KILCHIS Stony Loam, 30-60% slopes	VIs
601H	KILCHIS Stony Loam, 60-90% slopes	VIIs
616S	KLICKITAT Stony Loam, 3-30% slopes	VIs
617K	KLICKITAT Stony Loam, 30-50% south slopes	VIs
617KN	KLICKITAT Stony Loam, 30-50% north slopes	VIs
618H	KLICKITAT Stony Loam, 50-75% south slopes	VIIs
618HN	KLICKITAT Stony Loam, 50-75% north slopes	VIIs
620S	HEMBRE-KLICKITAT COMPLEX, 3-30% slopes	VIe
621K	KEMBRE-KLICKITAT COMPLEX, 30-60% slopes	VIe

Map Symbol	Mapping Unit (Soil Name)	Capability Class
625S	HOLDERMAN Extremely Cobbly Loam, 5-25% slopes	VIs
626K	HOLDERMAN Extremely Cobbly Loam, 25-50% slopes	VIs
627H	HOLDERMAN Extremely Cobbly Loam, 50-75% slopes	VIIs
630S	CRUISER Gravelly Clay Loam, 3-25% slopes	VIe
631K	CRUISER Gravelly Clay Loam, 25-50% slopes	VIe
632H	CRUISER Gravelly Clay Loam, 50-75% slopes	VIIe
640S	KEEL Cobbly Clay Loam, 3-25% slopes	VIe
641K	KEEL Cobbly Clay Loam, 25-45% slopes	VIe
642H	KEEL Cobbly Clay Loam, 45-75% slopes	VIIe
650S	CUMLEY Silty Clay Loam, 2-20% slopes	VIe
670S	McDUFF Clay Loam, 3-25% slopes	VIe
671K	McDUFF Clay Loam, 25-50% slopes	VIe
672H	McDUFF Clay Loam, 50-70% slopes	VIIe
690S, 620S	MINNIECE Silty Clay Loam, 0-8% slopes	VIw
700K	ROCK OUTCROP-KILCHIS COMPLEX, 30-90% slopes	VIIIs
700KX	ROCK OUTCROP-WITZEL COMPLEX, 10-70% slopes	VIIIs
701K, 702H	WINBERRY Very Gravelly Loam, 10-45% slopes	VIIs
706K	YELLOWSTONE-ROCK OUTCROP COMPLEX, 10-60% slopes	VIIIs
W	Water - bodies less than 40 acres or one-eighth mile wide	

Source: US Department of Agriculture, Soil Conservation Service, Preliminary Draft of Lane County Soil Survey

Appendix D

Selected Agricultural Processors

in Lane County and Vicinity

Product and Firm	Location
Field and Seed Processors	
Agricultural Service Corporation	Harrisburg
Forbes Seed and Grain, Inc.	Junction City
Kropf Feed and Seed	Harrisburg
Smucker Wilton Warehouse	Harrisburg
Wilcox Seed Company	Harrisburg
H & E Feeds	Eugene
Gold Coast Seed Company	Harrisburg
Lowell Warehouse	Harrisburg
Fruits and Vegetables	
Agripac, Incorporated	Eugene Junction City
Nuts	
Brynner Dryer	Eugene
Alvadore Dryer	Alvadore
Miller Dehydrator Company	Eugene
Poultry	
Willamette Poultry Company	Creswell
Dairy Products	
Echo Spring Dairy	Eugene
Darigold	Eugene
Dutch Girl (ice cream)	Eugene
Lochmead Dairy	Junction City
Springfield Creamery	Springfield

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ADDENDUM TO WORKING PAPER: AGRICULTURAL LANDS

Commercial Agriculture & Farm Parcel Size In Lane County

November, 1983

This report is to supplement the material presented in Working Paper: Agricultural Lands. It seeks to address two questions posed by that publication that are as yet unaswered. Simply stated these question are:

1. What is a commercial agricultural enterprise?
2. What parcel sizes are appropriate for the continuation of commercial agricultural enterprise within an area?

The Working Paper attempted to deal with these questions, however, due to lack of available data, was unsuccessful in leading Lane County to acceptable conclusions. More information is now available and this report will draw on this newer material.

COMMERCIAL AGRICULTURAL ENTERPRISE

Working Paper: Agricultural Lands used a mail out survey to develop information on the nature of agriculture within the County. The results of the survey were not totally conclusive; however, some characteristics are evident:

- Farm enterprises tend to be diverse producing more than one crop type.
- There is no strong geographic pattern of farm type.
- The majority of producing acreage is concentrated in relatively large farm operations.
- Individual farm operations utilize rented land to a high degree.
- Individual farm operation spaning non-contiguous land are common.

Recently, unpublished data from the U.S. Bureau of Cencus 1978 Census of Agriculture has been assembled by James Pease of Oregon State University. This information supports earlier conclusions and, more importantly, allows a closer view of the overall size and diversity of agricultural operations within Lane County. From this new data the following characteristics can be stated:

1. Agriculture is diversified in Lane County. The Bureau of Census classifies the County's farms into 11 separate groups

Group No.	Type
1	Cash Grains
2	Field Crops (includes grass seed production)
3	Vegetables and melons
4	Berries and grapes
5	Tree fruits and nuts
6	Horticultural specialties
7	General farm, primarily crop
8	Extensive Animal Grazing
9	Intensive Animal Husbandry
10	Dairy Farms
11	General farm, primarily livestock

2. Mixed crops and/or products within a farm operation is common. To allow for this, the Bureau of Census classifies a farm operation by the type of crop or product that accounts for more than half of the gross revenue of the farm operation.

3. The 1978 Census of Agriculture reported 1709 farm units within the County. Of this total only 983 or 58% reported sales of $2,500 or more. Farms having sales of $2,500 or more however account for 85% of the total agricultural acreage reported in the census. This latter group also accounts for 98% of the total sales (See Table I).

4. The characteristics of the various farm groups differ widely. No single farm group dominates the agriculture economy (See Table I). The largest group in terms of sales is field crops which generate 23% of the total farm sales. The largest group by number of farms and area involved is extensive animal grazing. This group accounts for 50% of the number of farms and 69% of the agricultural land reported.

5. In general, the majority of total sales volume is generated by a relatively small percentage of operators (See Table II).

6. The distribution by size of farms varies from agricultural group to agricultural group (See Table III). As a function of distribution, the central tendency of farm unit size also varies considerably from group to group. This remains true whether evaluating for size (e.g. median size) or size range accounting for a given sales volume (e.g. percentile of dollar volume).

7. A large amount of farm production (45% overall) occurs on rented land (See Table IV).

8. Geographic distribution of farm types is unknown and cannot be determined by this data.

From the foregoing it becomes evident that no single standard can be used to describe commercial agricultural enterprise within the County. Rather it appears the best method would be to use different descriptions for the different types of enterprises.

OAR 660-05-005(2) states:

"Commercial agricultural enterprise consists of farm operations which will:

(a) Contribute in a substantial way to area's existing agricultural economy; and

(b) Help maintain agricultural processors and established farm markets.

(c) When determining whether a farm is part of the commercial agricultural enterprise, not only what is produced, but how much and how it is marketed shall be considered. These are important factors because of the intent of Goal 3 to maintain the agricultural economy of the state."

The key to this definition is trying to determine how to describe or quantify "contribute in a substantial way to the agricultural economy." Table II illustrates that a relatively small number of farm operations account for the majority of sales. Overall 53%, or roughly half, of the total number of farms generate 80% of the dollar volume; less than a quarter of the producers (21%) account for well over half of the total dollar volume. In an initial review of this data, the Lane County Agricultural Extension Agent suggested the 20th percentile of dollar volume should be an adequate point to determine where a "significant" contribution occurs. (See Appendix A, paragraph 5. The dollar volume catagories used in Table II can also be referred to as percentiles. The 20% percentile is the point at which 20% of the cases are below and 80% are above. Thus the three catagories represent the 20th, 30th and 40th percentiles respectively.) Table II, along with the Extension Agent's opinion, while far from being conclusive, does have clear implications; overall, not more than half of the total number of farms can be considered to be making a "substantial" contribution to the agricultural economy.

Table III illustrates this same point in a different manner. The median size range (i.e. midpoint) for each farm group is identified. The 30th percentile (i.e. point above which 70% of sales occur) is also shown. In general, there is a correlation between these two different parameters; farms above the median size range account for 70% of the sales volume. This conclusion is consistent with that derived from Table II. By linking dollar volume to farm size a workable hypothesis emerges; the median size range could be used to establish the point at which a "significant" contribution occurs.

The standard posed by Goal 3 is vague and requires a subjective determination if it is to be quantified. At best, the working hypothesis suggested here is an approximation of such a value. From the information presented in Tables II and III it seems safe to conclude that farms above the median size range do in fact contribute in a substantial way to the agricultural economy. The same could be said for farms above the 40th pecentile of sales volume. The number of producers falls off very rapidly at this point; however, and 79% of the total number of existing farms would be excluded. To select such a narrow definition does not seem logical or appropriate. To go in the other direction and select the 20th percentile as a standard may be valid; however, its use poses some difficulties. The number of farms (53% of total) included by this standard certainly is not out of line. The difficulty arises when a linkage to parcel size is attempted. In several of the farm group categories the 20th percentile falls below 20 acres. Available data does not allow for any size breakdown between 1 and 19 acres. As a result in these categories the best one can say is that the standard is somewhere between 1 and 19 acres. In other words we have no quantifable standard using the 20th percentile. While using the suggested hypothesis as a standard is an approximation, at least it is a useable and supportable approximation.

Such a definition of a commercial farm is fine to a point, however, has some drawbacks. First is the fact that the data is derived from total farm operations. Any given operation may be conducted on several pieces of land not necessarily contiguous or even under the ownership of the operator. Another shortcoming is that it does not serve as a reasonable standard for land division. The data addresses only farm types; observation shows many of these types existing in the same area. Using the median range a standard ranging from 20 acres (berries and grapes) to 320 acres (general farms, primarily crop) is established. A land division approved at the lower size cannot be demonstrated as maintaining a commercial agricultural enterprise consisting of operations falling into the larger category.

PARCEL SIZES APPROPRIATE FOR COMMERCIAL AGRICULTURE

As discussed above, certain conclusions can be reached regarding the nature of commercial agriculture. A very important one is that a farm operation may well consist of many subunits (i.e. fields). Census data focuses on the overall operation and does not provide any tangible information on field sizes. A different method of gathering and evaluating data is needed.

From all reports the existing agricultural economy is quite viable within the county. One can assume that existing field sizes, while the result of an infinite number of factors, tend to optimize utility for the operator. Reviewing the size and distribution of existing farm parcel sizes would at least demonstrate the result of free marketplace choice. The existing field sizes could be reviewed to determine if there is any correlation with expert opinion on viable field sizes for similiar farm operations. Knowing that the County is large and diverse, regionalizing the information seemed advisable. Geographic regions (See Map I) were established on the basis of soils series and location. This was done by working closely with County Agricultural Extension Agents (See Appendix B).

Utilizing the County's geographic data base computer capability, existing farm parcels within each region were evaluated to determine size characteristics. The results are shown on Tables VI and VII. The data was assembled under two different parameters; using all identified farm parcels (Table VI) and only using farm parcels of 10 acres or larger (Table VII). The purpose of using two sets of parameters was was to check for a data bias; the land use data may identify small units as farm units when more properly they should be considered rural residential. The very small minimums and smaller central tendencies displayed on Table VI indicate that such a bias probably does exist, and hence, only the data rejecting units of less than 10 acres (Table VII) should be used. Five different ways of indicating the central tendency of field size are displayed on Table VII. Percentiles are a way of stating a point that a certain percentage of all cases are below. In other words the 20th percentile is the size that 20% of the cases are of lessor size and 80% are larger. The median is the midpoint having an equal number of cases smaller and larger; it is also the 50th percentile. The mean (commonly called the average) is the total of all sizes divided by the number of cases. The mean is the least reliable of all central tendencies because it is so easily influenced by extremes at either end of the range.

Not knowing what is being produced on the existing fields shown on Table VII, the data could be skewed by producers that are not "significant contributor" to the agricultural economy. To develop a knowledgeable opinion as to what would be a viable commercial field size, hypothetical situations were developed to represent a standard set of conditions in each geographic region. To represent a "commercial farm operation" within each region, the size range immediately above the median value for the farm type corresponding to a primary crop type was selected. The primary crops were selected by County Extension Agents as being the most common or suitable for the region. As explained earlier, in general, 70% of total sales are generated on farms of the median size or larger. For the purposes of this evaluation this point will be assumed to be the lower threshold of those farm operations making a significant contribution to the overall agricultural economy. Within the context of the hypothetical standard conditions, Extension Agents offered their opinion as to the smallest field size considered viable and also as to a preferred size. The results of this process are shown on Table VIII. The opinions received from the Extension Agents were compared to the existing parcel sizes to determine an appropriate parcel size standard for each region.

As with the earlier discussion regarding overall farm size, a parcel size that is appropriate for the continuation of commercial agriculture within and area can only be approximated. In general a parcel size in the 30th to 40th percentile range seems a reasonable approximation. A higher point (i.e. median size or 50th percentile) would dismiss too many (half) of the existing cases as being erroneous choices. A lower figure such as the 20th percentile tends to move too far in the other direction. If the parcel size within the 30th to 40th percentile is greatly at odds with the "expert opinion" offered by the Extension Agent, this difference should be reconciled to arrive at a reasonable approximation for the region.

Region 1. A standard of 40 acres is right at the 40th percentile. It is above the recommended minimums (20-30 ac.) and within the preferred size range (40-80 ac.).

Region 2. A standard of 40 acres is within the 30th to 40th percentile range (36-44 ac.). It is at the upper end of the recommended minimum range (20-40 ac.) and within the preferred size range (40-80 ac.).

Region 3A. A standard of 40 acres would be right at the 40th percentile. It is however below the recommended miimum range (20-40 ac.) and the preferred range (40-80 ac.). One must conclude the existing parcel size distribution is being influenced by crops other than those considered primary by the extension service.

A standard of 40 acres represents a compromise that seems consistent with existing and recommended.

Region 3B & C. The existing size distribution for the two regions is almost identical so they will be treated as one. A standard of 25 acres would be right at the 40th percentile however, is below recommended size ranges. Again, one must assume the size distribution is influenced by nonprimary crops. Given a much lower median value than found in Region 3A a standard of 40 acres seems too high. In this instance 30 acres seems a reasonable compromise between existing and recommended.

Regions 4, 5 and 7. A standard of 20 acres would be within 30th to 40th percentile range of existing parcels. It is also equal to or above recommended minimums. A standard of 40 acres would be consistent with the preferred recommendation however, is considerably above the median existing size of 28 acres. A standard of 30 acres seems a reasonable compromise between existing and recommended.

Region 6. A standard of 25 acres is within the 30th to 40th percentile range and equal to the preferred recommendation.

Region 8A. A standard of 60 acres is within the 30th to 40th percentile range. The standard would be well above recommended minimums and within the preferred range (25-80 ac.).

Region 8B. A standard of 30 acres is within the 30th to 40th percentile range. It is however, below recommended minimum and preferred sizes. This region has a lower median value (44 ac.) than Region 8A (82 ac.) so the 60 acre standard used for that region seems to high. 40 acres seems a reasonable compromise among these various factors.

Region 9A. Standard of 20 acres is within the 30th to 40th percentile range. This size however, is below the preferred recommendation. A 40 acre standard is slightly above the median of existing parcels and at the lower range of the preferred recommendation and represents a reasonable compromise between these factors.

Region 9B. A standard of 40 acres is right at the 40th percentile. As it is also at the lower end of the preferred recommendation range it represents an appropriate approximation for this region.

Region 12. A standard of 30 acres is within the 30th to 40th percentile range. This size is below recommended standards and hence is probably not an appropriate approximation.

Region 13. A standard of 30 acres in within the 30th to 40th percentile range and also in the middle of the recommended range.

Region 16. A standard of 40 acres is just above the 40th percentile and at the recommended minimum size. A larger standard would be too far above the median to be reasonable. This size should be an appropriate approximation for this region.

Region 17A. A standard of 25 acres is at the 40th percentile and consistent with the preferred recommendation.

Region 17B. A standard of 40 acres is equal to the 40th percentile and the preferred recommendation.

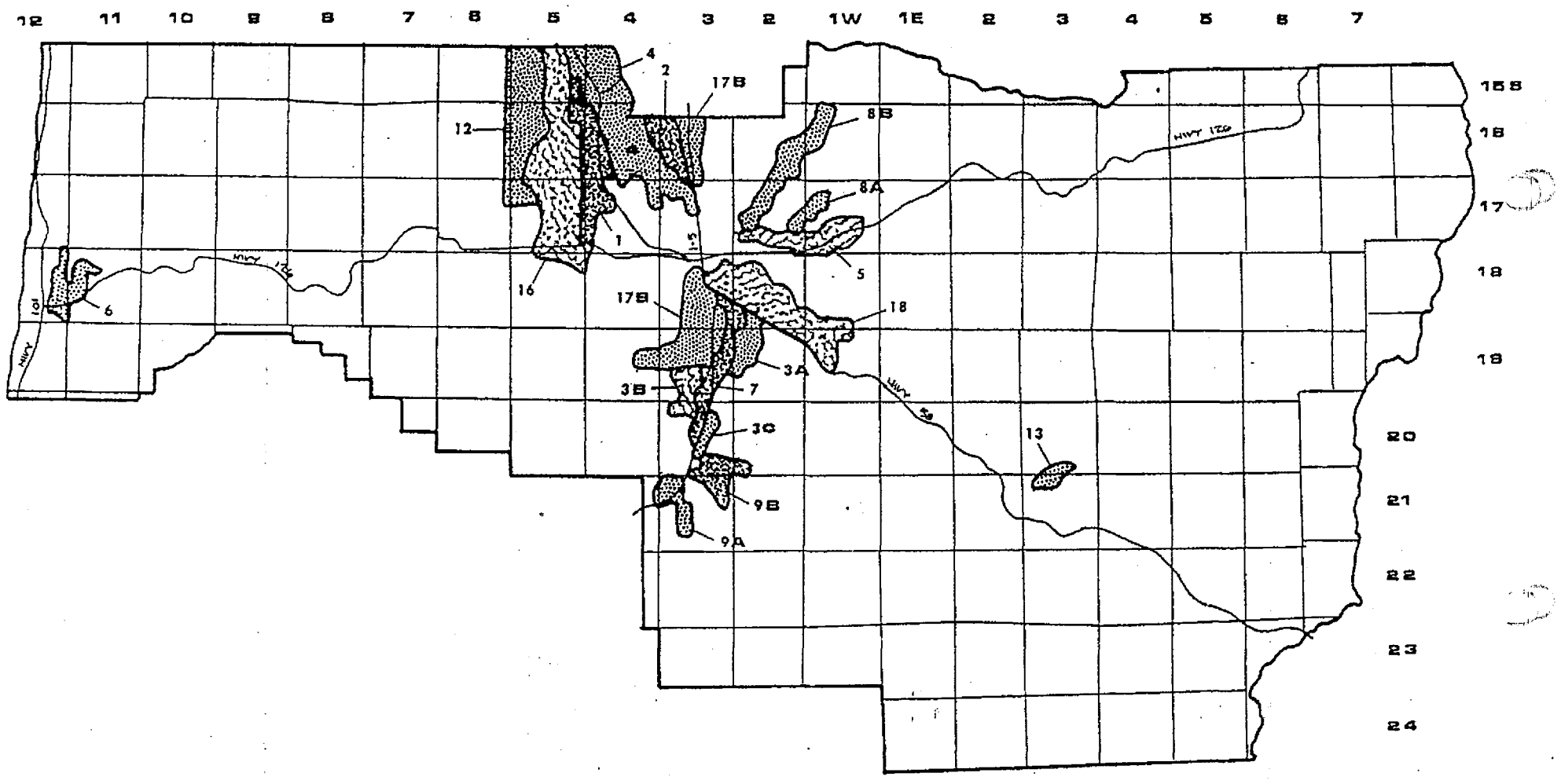
Region 18. A standard of 25 acres is approximately at the 40th percentile. As it also falls within the preferred recommendation range it should be an appropriate approximation for the region.

Remainder of County. Most land to be zoned as exclusive farm use will be within one of the regions listed above as they are formed by the soils commonly farmed. Nonetheless, properties outside of the described regions will also be zoned for exclusive farm use. The lack of other agricultural activity in these areas makes comparative analysis difficult if not impossible. Reviewing the various size standards selected throughout the primary farm regions, 40 acres is found most frequently. Lacking data for localized comparative analysis, 40 acres, being the most common standards overall, will be used for all areas not included in one of the 18 regions discussed above.

A SUGGESTED APPLICATION

From the foregoing discussion it appears there are two separate answers to the questions posed in the introduction. This conclusion leads to yet another question: Can the two different answers be used in conjunction to establish standards that are consistent with Goal 3? The answer is yes; the following will describe such a method. Any use or activity, such as a dwelling, that is allowed only in conjunction with a farm use would be permitted only when it is demonstrated that the farm use is larger than the median size for all farm uses of that type. The farm use would mean the entire farm unit; the total of all land (owned or leased) that is managed together by a single operator. Farm type would be the same categories used in this report. In the case of multiple crop activities an operation would be classified according to which activity generated more than half of the gross revenues. If this standard could not be met, the proposed use would not be considered to be in conjunction with a farm use. As such, the activity could only be allowed if all applicable provisions of ORS 215.213(3) are satisfied. Land divisions would be classified as farm use divisions and non-farm use divisions. A farm parcel being created would be equal to or greater than the selected size standard established in Table IX. This size standard would be deemed as being consistent with the requirements of ORS 215.263. A parcel proposed to be created at a lessor size would be considered to be a non-farm parcel and could be approved only upon satisfaction of the applicable provisions of ORS 215.263 and Goal 3. The important factor to keep in mind with this system is the creation of a farm parcel is not synonymous with creating a farm use. Approval of the farm parcel is governed by standards derived from other such parcels in the area. A farm use is evaluated by standards derived by examining the total scope of all other such farm operations in the County.

In conclusion, this report sought to provide answers to two basic questions regarding the treatment of agricultural land. By intent, the answers suggested are in quantified form (as opposed to being stated as criteria). As pointed out in the earlier report, Working Paper: Agricultural Lands, each approach has its own unique advantages and disadvantages. A criteria based approach maximizes flexibility by allowing a review tailored to the individual situation. This, however, reduces certainty and predictibility. A quantified standard increases predictibility, however, reduces flexibility or individual consideration. Given a policy position that stresses predictibility the standards presented are workable. Even so, one must always remember that these standards are based on generalized data; at best they are approximations.



MAP 1

Farm Regions

	All groups	Cash grains	Field crops (includes grass seed)	Vegetables and melons	Berries and grapes	Tree fruits and nuts	Horticultural specialties	General farming, primarily crop	Extensive animal grazing	Intensive animal husbandry	Dairy farms	General farms, primarily livestock
ALL FARMS												
Number	1709	47	164	61	27	166	80	48	852	220	30	14
% of total (tenths)	100.0	2.8	9.6	3.6	1.6	9.7	4.7	2.8	49.9	12.9	1.8	0.8
Land in farms (acres)	266765	6406	50012	9745	886	6233	2078	12175	155602	14964	7991	673
% of total	100.0	1.1	23.1	9.4	1.0	4.8	0.8	4.5	58.3	5.6	3.0	0.3
Sales (in $1000)	42808	468	9891	4007	438	2055	4605	2860	6725	4148	5558	55
% of total	100.0	1.1	23.1	9.4	1.0	4.8	10.8	6.7	15.7	14.4	13.0	0.1
FARMS WITH SALES OF $2500 OR MORE												
Number	983	32	98	54	20	95	65	26	453	111	26	3
% of total	58.0	1.9	5.7	3.2	1.2	5.6	3.8	1.6	26.5	6.5	1.6	0.2
Land in farms	226380	5782	45146	9661	658	5193	1938	11310	127103	11488	7913	187
% of total	84.9	2.2	16.9	3.6	0.2	1.9	0.7	4.2	47.6	4.3	3.0	0.1
Sales	41928	449	9808	3998	432	1997	4584	2854	6196	6017	5551	41
% of total	97.9	1.0	22.9	9.3	1.0	4.7	10.7	6.7	14.5	14.1	13.0	0.1

TABLE I: MARKET VALUE OF AGRICULTURAL PRODUCTS SOLD
(Source: Bureau of Census)

	All groups	Cash grains	Field crops (includes grass seed)	Vegetables and melons	Berries and grapes	Tree fruits and nuts	Horticultural specialties	General farming, primarily crop	Extensive animal grazing	Intensive animal husbandry	Dairy farms	General farms, primarily livestock
FARMS GENERATING 80% OF SALES VOLUME												
Number of farms	908	23	35	33	insufficient data	71	insufficient data	13	516	insufficient data	18	insufficient data
% of group total	53.1	48.9	21.3	54.1		42.8		27.1	60.6		60.0	
Smallest size (acres)	40	80	320	80		20		320	40		160	
FARMS GENERATING 70% OF SALES VOLUME												
Number of farms	605	14	insufficient data	20	7	42	18	insufficient data	346	insufficient data	insufficient data	insufficient data
% of group total	35.4	29.8		32.8	35.0	25.3	22.5		40.6			
Smallest farm size	80	160		160	20	40	20		80			
FARMS GENERATING 60% OF SALES VOLUME												
Number of farms	365	insufficient data	insufficient data	11	insufficient data	insufficient data	10	insufficient data	207	insufficient data	9	insufficient data
% of group total	21.4			18.0			12.5		24.3		30.0	
Smallest farm size	160			320			40		160		320	

TABLE II: SELECTED CHARACTERISTICS OF FARMS GENERATING MAJORITY OF SALES VOLUME

(Source: Bureau of Census)

	NUMBER OF FARMS											
	Total	1 to 19 ac	20 to 39 ac	40 to 59 ac	60 to 79 ac	80 to 119 ac	120 to 159 ac	160 to 239 ac	240 to 319 ac	320 to 499 ac	500 to 999 ac	1000 ac or more
Berries and grapes.....	20	[15]	--	2	--	1	--	2	--	--	--	--
Horticultural specialties	65	[49]	7	2	1	1	1	2	--	2	--	--
Intensive animal husbandry.....	111	① 49	[20]	9	4	14	4	6	3	1	--	1
Tree fruits and nuts...	95	38	[18]	14	7	10	3	1	1	2	1	--
All groups.....	983	219	114	100	[78]	100	55	100	54	72	58	33
General farms, primarily livestock....	3	--	1	--	[1]	1	--	--	--	--	--	--
Cash grains.....	32	1	3	3	4	[7]	--	7	3	3	--	1
Vegetables and melons..	54	5	4	5	7	[9]	4	4	5	7	4	--
Extensive animal grazing.....	453	58	51	51	42	[44]	37	52	32	39	35	12
Field crops.....	98	2	7	12	10	8	[3]	16	7	② 9	8	16
Dairy farms.....	26	--	2	--	1	3	2	[8]	1	7	1	1
General farms, primarily crop.....	26	2	1	2	1	2	1	2	[2]	2	9	2

[ ] Median size range

| 30th percentile (aprox.) of sales volume

NOTES:
① 50% of total sales come from operations of less then 20 acres. 30th percentile is somewhere between 1 and 19 acres.
② 85% of total sales come from operations larger then 320 acres. Data does not allow extrapolation of 30th percentile.
③ Insufficient data to determine 30th percentile for General Farms, Primarily Livestock

TABLE III: SIZE DISTRIBUTION O' ARMS HAVING SALES OF $ 2500 OR MORE
(Source: Bureau of ·ensus)

	All groups	Cash grains	Field crops (includes grass seed)	Vegetables and melons	Berries and grapes	Tree fruits and nuts	Horticultural specialties	General farming, primarily crops	Extensive animal grazing	Intensive animal husbandary	Dairy farms	General farms, primarily livestock
Total farms in group												
Number.....	983	32	98	54	20	95	65	26	453	111	26	7
Acres.....	226380	5782	45146	9661	658	5193	1939	11310	127103	11488	7913	187
Farms renting land												
Number.....	301	15	53	37	4	23	9	20	104	22	13	1
Acres.....	101580	3309	28552	5187	(S)	1321	150	5417	50331	5090	2096	(S)

(S) Suppresed data

TABLE IV: LAND RENTED BY FARMS WITH SALES OF $2500 OR MORE

(Source: Bureau of Census)

TABLE V: FARM REGIONS

REGION NO.	SOIL SERIES	PRIMARY CROPS
1	Awbrig-Coburg Oxley-Courtney Dayton- Natroy	Grass seed, wheat, peppermint
2	Awbrig-Coburg Oxley-Courtney Dayton-Natroy	Grass seed, wheat, peppermint
3A,B,C	Awbrig-Coburg Oxley-Courtney Dayton-Natroy	Grass seed, wheat, peppermint
4	Chehalis-Cloquato Newberg-Cloquato-Camas Malabon-Salem	Row crops, orchards, wheat in rotation with peppermint
5	Chehalis-Cloquato Newberg-Cloquato-Camas Malabon-Salem	Row crops, orchards, wheat in rotation with peppermint
6	Nehelam-Nestucca-Brenner	Pasture, cranberry, truffle
7	Chehalis-Cloquato Newberg-Cloquato-Camas Malabon-Salem	Row crops, orchard, wheat in rotation with peppermint
8A,B	Abiqua-McAlpin	Pasture, cereal grain, row crops, grass seed
9A,B	Abiqua-McAlpin	Pasture, cereal grain, row crops, grass seed
12	Nekia-Bellpine-Ritner	Pasture/timber, grass seed, cereal grain
13	Nekia-Bellpine-Ritner	Pasture/timber, cereal grain
16	Bashaw-Natroy	Grass seed
17A,B	Bashaw-Natroy	Pasture
18	Chehalis-Cloquato Newberg-Cloquato Malabon-Salem	Row crop, orchards, wheat in rotation with peppermint

TABLE VI: PARCEL SIZE BY REGION
(All farm units)

Region	Number of cases	Size (in acres)						
		min.	max.	20th percentile	30th percentile	40th percentile	50th percentile (median)	mean
1	236	0.1	405	5	5	18	29	46
2	145	0.4	287	4	5	8	10	38
3A	79	1.3	391	9	12	22	30	54
3B	39	0.7	187	15	18	20	24	40
3C	29	3.3	369	10	14	19	25	45
4	1019	0.2	289	3	5	7	10	24
5	205	0.2	316	3	4	6	10	24
6	18	1.8	118	3	5	5	14	27
7	155	0.9	344	5	6	9	14	27
8A	-	-	-	-	-	-	-	-
8B	122	0.1	303	5	7	11	19	42
9A	28	0.5	155	2	4	9	14	29
9B	36	1.0	219	10	15	34	42	62
12	224	1.0	518	10	14	22	32	60
13	14	1.3	216	13	15	17	47	75
16	405	0.1	418	5	9	13	22	55
17A	133	1.3	468	6	10	12	16	53
17B	44	0.8	619	12	20	31	43	107
18	309	0.3	295	5	8	12	17	30

TABLE VII: PARCEL SIZE BY REGION
(Farm units of 10 acres or larger)

Region	Number of cases	Size (in acres)						
		min.	max.	20th percentile	30th percentile	40th percentile	50th percentile (median)	mean
1	106	10	405	24	32	39	46	66
2	75	10	287	24	36	44	60	68
3A	60	10	391	21	27	31	45	69
3B	34	11	187	18	20	23	29	44
3C	23	11	369	19	20	25	27	55
4	510	10	289	16	19	22	27	43
5	102	10	317	14	18	20	28	44
6	11	12	118	21	24	42	57	58
7	89	10	344	17	19	25	31	43
8A	17	12	163	14	56	69	82	84
8B	75	11	303	20	28	38	44	65
9A	15	14	155	17	20	20	31	51
9B	29	14	219	27	34	42	59	76
12	177	10	519	20	25	36	51	74
13	12	13	216	15	17	47	50	87
16	260	10	418	21	31	39	47	83
17A	89	10	467	14	18	23	34	76
17B	38	11	619	22	27	40	59	124
18	197	10	295	17	20	23	27	45

TABLE VIII

FARM PARCEL SIZE QUESTIONAIRE

For each farming region listed below:

(a) Assume you are farming in the area.
(b) Your total operation is of the approximate size listed.
(c) You are primarily engaged in one or more of the activities listed. You may participate in other activities however the primary activity accounts for over half of gross sales volume.
(d) Given the size, location, and nature of your operation what is the smallest parcel of land you would consider buying or renting (assuming a reasonable price)? What is a more desirable (preferred) size for this operation.
(e) Give a seperate answer for each primary activity listed.

Region No.	Size of Operation (acres)	Primary Activities	Smallest Parcel (acres)	Preferred Parcel (acres)
1	160-239	grass seed	20	80
	120-159	wheat	20	40
	160-239	peppermint	30	60
2	160-239	grass seed	40	80
	120-159	wheat	20	40
	160-239	peppermint	30	60
3A	160-239	grass seed	40	80
	120-159	wheat	20	40
	160-239	peppermint	30	60
3B	160-239	grass seed	40	80
	120-159	wheat	20	40
	160-239	peppermint	30	60
3C	160-239	grass seed	40	80
	120-159	wheat	20	40
	160-239	peppermint	30	60
4	120-159	row crop	20	40
	40-59	orchard	5	10
	120-159	wheat/peppermint	20	40
5	120-159	row crop	20	40
	40-59	orchard	5	10
	120-159	wheat/peppermint	20	40
6	120-159	pasture	10	25
7	120-159	row crop	20	40
	40-59	orchard	5	10
	120-159	wheat/peppermint	20	40

(Table VIII cont.)

Region No.	Size of Operation (acres)	Primary Activities	Smallest Parcel (acres)	Preferred Parcel (acres)
8A	120-159	pasture	15	25
	120-159	cereal grain	20	40
	120-159	row crop	20	40
	160-239	grass seed	40	80
8B	120-159	pasture	15	25
	120-159	cereal grain	20	40
	120-159	row crop	20	40
	160-239	grass seed	40	80
9A	120-159	pasture	15	25
	120-159	cereal grain	20	40
	120-159	row crop	20	40
	160-239	grass seed	40	80
9B	120-159	pasture	15	25
	120-159	cereal grain	20	40
	120-159	row crop	20	40
	160-239	grass seed	40	80
12	120-159	pasture/timber	--	--
	120-159	cereal grain	30	40
	160-239	grass seed	40	80
13	120-159	pasture/timber	10	25
	120-159	cereal grain	20	40
16	160-239	grass seed	40	80
17A	120-159	pasture	15	25
17B	120-159	pasture	20	40
18	120-159	row crop	20	40
	40-59	orchard	5	10
	120-159	wheat/peppermint	20	40

Footnote: wheat/peppermint = wheat and peppermint in rotation

TABLE IX: SELECTED STANDARD FOR FARM PARCEL SIZE

Region	Selected Standard (acres)
1	40
2	40
3A	40
3B	30
3C	30
4	30
5	30
6	25
7	30
8A	60
8B	40
9A	40
9B	40
12	40
13	40
16	40
17A	25
17B	40
18	25

APPENDIX A

EXTENSION SERVICE
Lane County Office

Oregon State University

950 W. 13th Avenue
Eugene, Oregon 97402-3999

687-4243 Agriculture,
Home Economics, 4-H
697-4281 Nutrition

April 19, 1983

TO: Vern Delk
County & Community Development
Courthouse
Eugene, OR 97401

FROM: Mike Stoltz
Extension Agent

RE: Land Use Planning Criteria Questions

1. Can crop types be regionalized?
2. Can generalized soils mapping be used as a guide to farming type?

Yes, with location combined with soil types. Examples are: West of 99 from Eugene, north to Benton County line on soils of Awbrig-Coburg association, Oxley-Courtney association and Dayton association, the crops are primarily grass seed with wheat and peppermint on the higher, better drained ground. These could be classified as "extensive" or primarily agronomic crops. This description would also fit the area east of Coburg Road between Coburg and Harrisburg and in the Creswell-Walker area on the coast fork of the Willamette.

The area east of 99 and Prairie Road all the way across the Willamette to Coburg Road on soils of Chehalis-Cloquato association, Newburg-Cloquato-Camas association, and the Malabon-Salem association are primarily row crops and orchards with wheat or peppermint as rotations. Some of this ground is often in wheat but is suited for the more "intensive" or horticulture crops. This is also true of these associations running up the McKenzie and the forks of the Willamette.

The areas of the Mohawk Valley, north of Walterville, and around Cottage Grove on soils of Abiqua-McAlpin association are mixed agriculture areas, primarily made up of pasture, cereal grains and small amounts of row crop on better drained sites, and grass seed on poorer drained sites.

The Bellpine-Hazelair-Philomath association soils are predominately timber. However, some pasture is predominant on the poorer drained soil and on the lower slopes.

The Nekia-Bellpine-Ritner association soils up the Mohawk are primarily pasture-timber mixture, with some grass seed and cereal grains, as they are to the southwest of Eugene-Springfield, west of Territorial Road, and up the forks of the Willamette.

The Veneta-Salkum association soils around Fern Ridge are used for orchards and berries, particularly on Veneta soils, with some grass seed on Salkum soils. Timber is usually the case on the steeper slopes and pasture on lower slopes. Pasture also predominates on the smaller and/or less developed parcels.

The Nehalem-Nestucca-Brenner association soils on the coast are primarily in pasture. Some of the Braillier-Brenner association soils on the coast are also in pasture but are also suitable for cranberry or truffle production, which are both very intensive, small acreage enterprises.

The Bashaw-Natroy association soils are primarily pasture except for that area between Highway 99 and Territorial Road, which is again grass seed.

A number of exceptions exist on soil associations listed as grass seed where drainage tile has been installed. Crops there are wheat, peppermint, vegetable seed crops and row crops.

I think these associations will work for determining predominant-agriculture type for an area. They are probably too broad for pinpoint zoning, for example, in the Bellpine-Hazelair-Philomath association is the Dixonville-Philomath-Hazelair Complex.

Several years ago, there was considerable discussion on keeping 374C Dixonville-Philomath-Hazelair Complex in an agricultural capability classification. The Soil Conservation Service, however, felt there was no need to keep such poor soils for resource land--agricultural or timber. It does not have an economic value for seed crops as many of the Class IV soils, and is marginal for woodland with a 30-year root-rot/blowdown connotation to forest consultants.

This Complex as well as single units of each soil, with Panther in many of the drainages, is found at Gimpl Hill, in the Eugene south hills, Coburg Hills, etc. There is concern over an F1 zoning being assigned to these areas as a buffer between agricultural and timber land. In most areas where these soils are found, however, there is no need for such a designation. For instance, the Coburg Hills above I-5 have low site timber soils and are not being intensively managed for woodland. In fact, many owners in that area are using a combination of grazing and timber as the best management practice. This is agreeable with the natural ecology of such low site areas.

3. Is the size of a commercial farm enterprise different than a land division parcel size that is "appropriate for the continuation of existing commercial agriculture" within the area?

Yes--most of the commercial agriculture farms consist of some owned land and one of more parcels of rented land. The size of parcel and the distance from the main headquarters are the determining factors after price of the lease. The larger parcels are more desirable as is closeness to the headquarters.

4. Can minimum parcel size be approximated, through expert opinion for different areas based on most common or most suitable crop type?

A qualified yes--the qualification being that a land productivity rating system be part of or used by the "experts" - a system such as the one published by Oregon State University Extension in EC 1105 (October, 1982). The Agriculture Land Evaluation and Site Assessment (LESA) System could also be incorporated into the process.

5. Which central tendency of farm unit appears most appropriate?

I would think the 80 percentile would be restrictive enough in determining what size a farm had to be in order to get a designation as a farm unit. At that size, the farm is definitely more than a sideline or hobby. It still may be part time, and could justify a farm dwelling. We may need to look at operations of that size in each category to test that observation out.

mh
cc: James R. Pease, OSU
Harold Kerr, OSU

ADDENDUM TO
WORKING PAPER:
AGRICULTURAL LANDS

Commercial Agriculture & Farm Parcel Size In Lane County

November, 1983

This report is to supplement the material presented in Working Paper: Agricultural Lands. It seeks to address two questions posed by that publication that are as yet unaswered. Simply stated these question are:

1. What is a commercial agricultural enterprise?
2. What parcel sizes are appropriate for the continuation of commercial agricultural enterprise within an area?

The Working Paper attempted to deal with these questions, however, due to lack of available data, was unsuccessful in leading Lane County to acceptable conclusions. More information is now available and this report will draw on this newer material.

COMMERCIAL AGRICULTURAL ENTERPRISE

Working Paper: Agricultural Lands used a mail out survey to develop information on the nature of agriculture within the County. The results of the survey were not totally conclusive; however, some characteristics are evident:

- Farm enterprises tend to be diverse producing more than one crop type.
- There is no strong geographic pattern of farm type.
- The majority of producing acreage is concentrated in relatively large farm operations.
- Individual farm operations utilize rented land to a high degree.
- Individual farm operation spaning non-contiguous land are common.

Recently, unpublished data from the U.S. Bureau of Cencus 1978 Census of Agriculture has been assembled by James Pease of Oregon State University. This information supports earlier conclusions and, more importantly, allows a closer view of the overall size and diversity of agricultural operations within Lane County. From this new data the following characteristics can be stated:

1. Agriculture is diversified in Lane County. The Bureau of Census classifies the County's farms into 11 separate groups

Group No.	Type
1	Cash Grains
2	Field Crops (includes grass seed production)
3	Vegetables and melons
4	Berries and grapes
5	Tree fruits and nuts
6	Horticultural specialties
7	General farm, primarily crop
8	Extensive Animal Grazing
9	Intensive Animal Husbandry
10	Dairy Farms
11	General farm, primarily livestock

2. Mixed crops and/or products within a farm operation is common. To allow for this, the Bureau of Census classifies a farm operation by the type of crop or product that accounts for more than half of the gross revenue of the farm operation.

3. The 1978 Census of Agriculture reported 1709 farm units within the County. Of this total only 983 or 58% reported sales of $2,500 or more. Farms having sales of $2,500 or more however account for 85% of the total agricultural acreage reported in the census. This latter group also accounts for 98% of the total sales (See Table I).

4. The characteristics of the various farm groups differ widely. No single farm group dominates the agriculture economy (See Table I). The largest group in terms of sales is field crops which generate 23% of the total farm sales. The largest group by number of farms and area involved is extensive animal grazing. This group accounts for 50% of the number of farms and 69% of the agricultural land reported.

5. In general, the majority of total sales volume is generated by a relatively small percentage of operators (See Table II).

6. The distribution by size of farms varies from agricultural group to agricultural group (See Table III). As a function of distribution, the central tendency of farm unit size also varies considerably from group to group. This remains true whether evaluating for size (e.g. median size) or size range accounting for a given sales volume (e.g. percentile of dollar volume).

7. A large amount of farm production (45% overall) occurs on rented land (See Table IV).

8. Geographic distribution of farm types is unknown and cannot be determined by this data.

From the foregoing it becomes evident that no single standard can be used to describe commercial agricultural enterprise within the County. Rather it appears the best method would be to use different descriptions for the different types of enterprises.

OAR 660-05-005(2) states:

"Commercial agricultural enterprise consists of farm operations which will:

(a) Contribute in a substantial way to area's existing agricultural economy; and

(b) Help maintain agricultural processors and established farm markets.

(c) When determining whether a farm is part of the commercial agricultural enterprise, not only what is produced, but how much and how it is marketed shall be considered. These are important factors because of the intent of Goal 3 to maintain the agricultural economy of the state."

The key to this definition is trying to determine how to describe or quantify "contribute in a substantial way to the agricultural economy." Table II illustrates that a relatively small number of farm operations account for the majority of sales. Overall 53%, or roughly half, of the total number of farms generate 80% of the dollar volume; less than a quarter of the producers (21%) account for well over half of the total dollar volume. In an initial review of this data, the Lane County Agricultural Extension Agent suggested the 20th percentile of dollar volume should be an adequate point to determine where a "significant" contribution occurs. (See Appendix A, paragraph 5. The dollar volume catagories used in Table II can also be referred to as percentiles. The 20% percentile is the point at which 20% of the cases are below and 80% are above. Thus the three catagories represent the 20th, 30th and 40th percentiles respectively.) Table II, along with the Extension Agent's opinion, while far from being conclusive, does have clear implications; overall, not more than half of the total number of farms can be considered to be making a "substantial" contribution to the agricultural economy.

Table III illustrates this same point in a different manner. The median size range (i.e. midpoint) for each farm group is identified. The 30th percentile (i.e. point above which 70% of sales occur) is also shown. In general, there is a correlation between these two different parameters; farms above the median size range account for 70% of the sales volume. This conclusion is consistent with that derived from Table II. By linking dollar volume to farm size a workable hypothesis emerges; the median size range could be used to establish the point at which a "significant" contribution occurs.

The standard posed by Goal 3 is vague and requires a subjective determination if it is to be quantified. At best, the working hypothesis suggested here is an approximation of such a value. From the information presented in Tables II and III it seems safe to conclude that farms above the median size range do in fact contribute in a substantial way to the agricultural economy. The same could be said for farms above the 40th pecentile of sales volume. The number of producers falls off very rapidly at this point; however, and 79% of the total number of existing farms would be excluded. To select such a narrow definition does not seem logical or appropriate. To go in the other direction and select the 20th percentile as a standard may be valid; however, its use poses some difficulties. The number of farms (53% of total) included by this standard certainly is not out of line. The difficulty arises when a linkage to parcel size is attempted. In several of the farm group categories the 20th percentile falls below 20 acres. Available data does not allow for any size breakdown between 1 and 19 acres. As a result in these categories the best one can say is that the standard is somewhere between 1 and 19 acres. In other words we have no quantifable standard using the 20th percentile. While using the suggested hypothesis as a standard is an approximation, at least it is a useable and supportable approximation.

Such a definition of a commercial farm is fine to a point, however, has some drawbacks. First is the fact that the data is derived from total farm operations. Any given operation may be conducted on several pieces of land not necessarily contiguous or even under the ownership of the operator. Another shortcoming is that it does not serve as a reasonable standard for land division. The data addresses only farm types; observation shows many of these types existing in the same area. Using the median range a standard ranging from 20 acres (berries and grapes) to 320 acres (general farms, primarily crop) is established. A land division approved at the lower size cannot be demonstrated as maintaining a commercial agricultural enterprise consisting of operations falling into the larger category.

PARCEL SIZES APPROPRIATE FOR COMMERCIAL AGRICULTURE

As discussed above, certain conclusions can be reached regarding the nature of commercial agriculture. A very important one is that a farm operation may well consist of many subunits (i.e. fields). Census data focuses on the overall operation and does not provide any tangible information on field sizes. A different method of gathering and evaluating data is needed.

From all reports the existing agricultural economy is quite viable within the county. One can assume that existing field sizes, while the result of an infinite number of factors, tend to optimize utility for the operator. Reviewing the size and distribution of existing farm parcel sizes would at least demonstrate the result of free marketplace choice. The existing field sizes could be reviewed to determine if there is any correlation with expert opinion on viable field sizes for similiar farm operations. Knowing that the County is large and diverse, regionalizing the information seemed advisable. Geographic regions (See Map I) were established on the basis of soils series and location. This was done by working closely with County Agricultural Extension Agents (See Appendix B).

Utilizing the County's geographic data base computer capability, existing farm parcels within each region were evaluated to determine size characteristics. The results are shown on Tables VI and VII. The data was assembled under two different parameters; using all identified farm parcels (Table VI) and only using farm parcels of 10 acres or larger (Table VII). The purpose of using two sets of parameters was was to check for a data bias; the land use data may identify small units as farm units when more properly they should be considered rural residential. The very small minimums and smaller central tendencies displayed on Table VI indicate that such a bias probably does exist, and hence, only the data rejecting units of less than 10 acres (Table VII) should be used. Five different ways of indicating the central tendency of field size are displayed on Table VII. Percentiles are a way of stating a point that a certain percentage of all cases are below. In other words the 20th percentile is the size that 20% of the cases are of lessor size and 80% are larger. The median is the midpoint having an equal number of cases smaller and larger; it is also the 50th percentile. The mean (commonly called the average) is the total of all sizes divided by the number of cases. The mean is the least reliable of all central tendencies because it is so easily influenced by extremes at either end of the range.

Not knowing what is being produced on the existing fields shown on Table VII, the data could be skewed by producers that are not "significant contributor" to the agricultural economy. To develop a knowledgeable opinion as to what would be a viable commercial field size, hypothetical situations were developed to represent a standard set of conditions in each geographic region. To represent a "commercial farm operation" within each region, the size range immediately above the median value for the farm type corresponding to a primary crop type was selected. The primary crops were selected by County Extension Agents as being the most common or suitable for the region. As explained earlier, in general, 70% of total sales are generated on farms of the median size or larger. For the purposes of this evaluation this point will be assumed to be the lower threshold of those farm operations making a significant contribution to the overall agricultural economy. Within the context of the hypothetical standard conditions, Extension Agents offered their opinion as to the smallest field size considered viable and also as to a preferred size. The results of this process are shown on Table VIII. The opinions received from the Extension Agents were compared to the existing parcel sizes to determine an appropriate parcel size standard for each region.

As with the earlier discussion regarding overall farm size, a parcel size that is appropriate for the continuation of commercial agriculture within and area can only be approximated. In general a parcel size in the 30th to 40th percentile range seems a reasonable approximation. A higher point (i.e. median size or 50th percentile) would dismiss too many (half) of the existing cases as being erroneous choices. A lower figure such as the 20th percentile tends to move too far in the other direction. If the parcel size within the 30th to 40th percentile is greatly at odds with the "expert opinion" offered by the Extension Agent, this difference should be reconciled to arrive at a reasonable approximation for the region.

Region 1. A standard of 40 acres is right at the 40th percentile. It is above the recommended minimums (20-30 ac.) and within the preferred size range (40-80 ac.).

Region 2. A standard of 40 acres is within the 30th to 40th percentile range (36-44 ac.). It is at the upper end of the recommended minimum range (20-40 ac.) and within the preferred size range (40-80 ac.).

Region 3A. A standard of 40 acres would be right at the 40th percentile. It is however below the recommended miimum range (20-40 ac.) and the preferred range (40-80 ac.). One must conclude the existing parcel size distribution is being influenced by crops other than those considered primary by the extension service.

A standard of 40 acres represents a compromise that seems consistent with existing and recommended.

Region 3B & C. The existing size distribution for the two regions is almost identical so they will be treated as one. A standard of 25 acres would be right at the 40th percentile however, is below recommended size ranges. Again, one must assume the size distribution is influenced by nonprimary crops. Given a much lower median value than found in Region 3A a standard of 40 acres seems too high. In this instance 30 acres seems a reasonable compromise between existing and recommended.

Regions 4, 5 and 7. A standard of 20 acres would be within 30th to 40th percentile range of existing parcels. It is also equal to or above recommended minimums. A standard of 40 acres would be consistent with the preferred recommendation however, is considerably above the median existing size of 28 acres. A standard of 30 acres seems a reasonable compromise between existing and recommended.

Region 6. A standard of 25 acres is within the 30th to 40th percentile range and equal to the preferred recommendation.

Region 8A. A standard of 60 acres is within the 30th to 40th percentile range. The standard would be well above recommended minimums and within the preferred range (25-80 ac.).

Region 8B. A standard of 30 acres is within the 30th to 40th percentile range. It is however, below recommended minimum and preferred sizes. This region has a lower median value (44 ac.) than Region 8A (82 ac.) so the 60 acre standard used for that region seems to high. 40 acres seems a reasonable compromise among these various factors.

Region 9A. Standard of 20 acres is within the 30th to 40th percentile range. This size however, is below the preferred recommendation. A 40 acre standard is slightly above the median of existing parcels and at the lower range of the preferred recommendation and represents a reasonable compromise between these factors.

Region 9B. A standard of 40 acres is right at the 40th percentile. As it is also at the lower end of the preferred recommendation range it represents an appropriate approximation for this region.

Region 12. A standard of 30 acres is within the 30th to 40th percentile range. This size is below recommended standards and hence is probably not an appropriate approximation.

Region 13. A standard of 30 acres in within the 30th to 40th percentile range and also in the middle of the recommended range.

Region 16. A standard of 40 acres is just above the 40th percentile and at the recommended minimum size. A larger standard would be too far above the median to be reasonable. This size should be an appropriate approximation for this region.

Region 17A. A standard of 25 acres is at the 40th percentile and consistent with the preferred recommendation.

Region 17B. A standard of 40 acres is equal to the 40th percentile and the preferred recommendation.

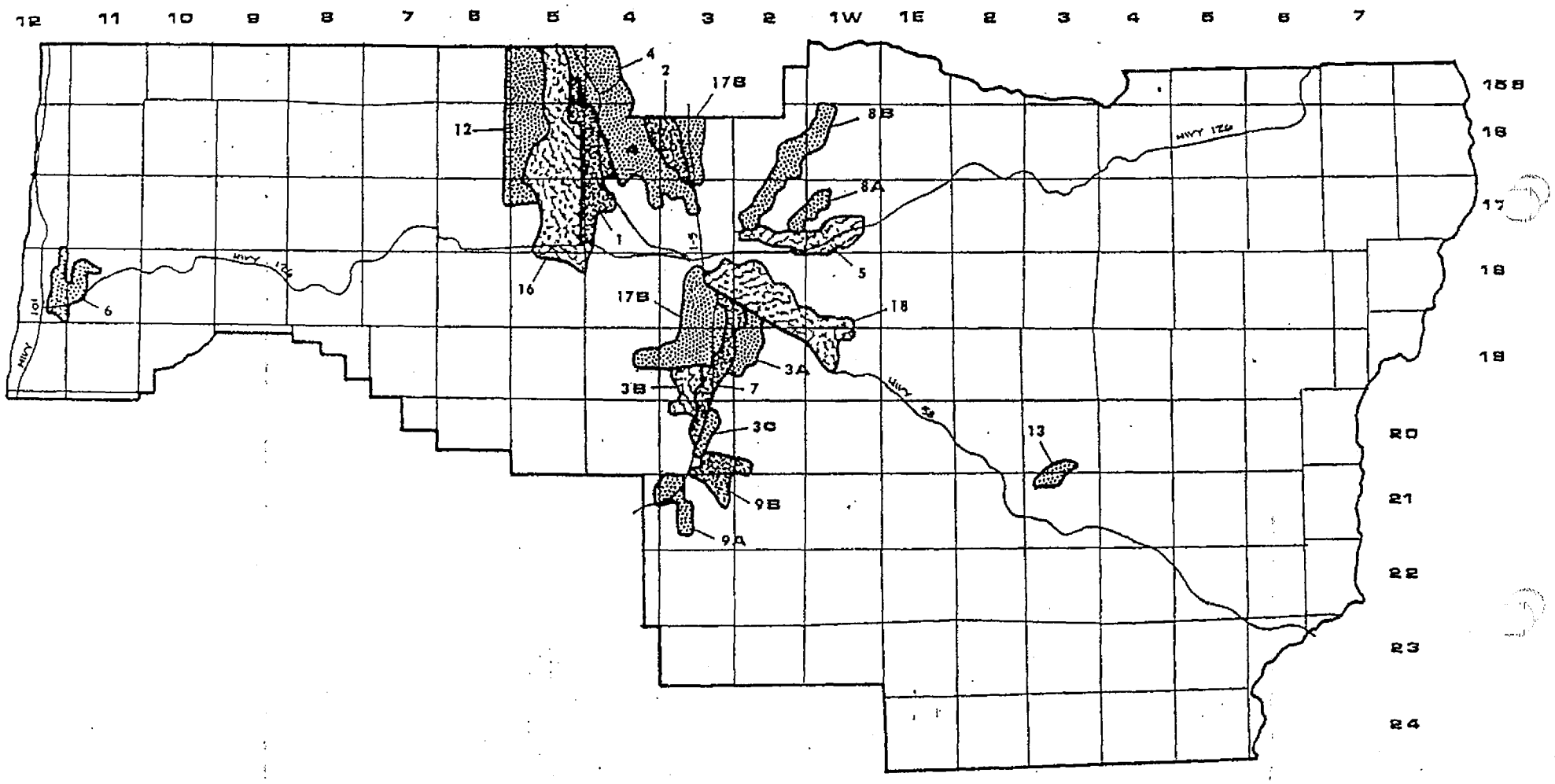
Region 18. A standard of 25 acres is approximately at the 40th percentile. As it also falls within the preferred recommendation range it should be an appropriate approximation for the region.

Remainder of County. Most land to be zoned as exclusive farm use will be within one of the regions listed above as they are formed by the soils commonly farmed. Nonetheless, properties outside of the described regions will also be zoned for exclusive farm use. The lack of other agricultural activity in these areas makes comparative analysis difficult if not impossible. Reviewing the various size standards selected throughout the primary farm regions, 40 acres is found most frequently. Lacking data for localized comparative analysis, 40 acres, being the most common standards overall, will be used for all areas not included in one of the 18 regions discussed above.

A SUGGESTED APPLICATION

From the foregoing discussion it appears there are two separate answers to the questions posed in the introduction. This conclusion leads to yet another question: Can the two different answers be used in conjunction to establish standards that are consistent with Goal 3? The answer is yes; the following will describe such a method. Any use or activity, such as a dwelling, that is allowed only in conjunction with a farm use would be permitted only when it is demonstrated that the farm use is larger than the median size for all farm uses of that type. The farm use would mean the entire farm unit; the total of all land (owned or leased) that is managed together by a single operator. Farm type would be the same categories used in this report. In the case of multiple crop activities an operation would be classified according to which activity generated more than half of the gross revenues. If this standard could not be met, the proposed use would not be considered to be in conjunction with a farm use. As such, the activity could only be allowed if all applicable provisions of ORS 215.213(3) are satisfied. Land divisions would be classified as farm use divisions and non-farm use divisions. A farm parcel being created would be equal to or greater than the selected size standard established in Table IX. This size standard would be deemed as being consistent with the requirements of ORS 215.263. A parcel proposed to be created at a lessor size would be considered to be a non-farm parcel and could be approved only upon satisfaction of the applicable provisions of ORS 215.263 and Goal 3. The important factor to keep in mind with this system is the creation of a farm parcel is not synonymous with creating a farm use. Approval of the farm parcel is governed by standards derived from other such parcels in the area. A farm use is evaluated by standards derived by examining the total scope of all other such farm operations in the County.

In conclusion, this report sought to provide answers to two basic questions regarding the treatment of agricultural land. By intent, the answers suggested are in quantified form (as opposed to being stated as criteria). As pointed out in the earlier report, Working Paper: Agricultural Lands, each approach has its own unique advantages and disadvantages. A criteria based approach maximizes flexibility by allowing a review tailored to the individual situation. This, however, reduces certainty and predictibility. A quantified standard increases predictibility, however, reduces flexibility or individual consideration. Given a policy position that stresses predictibility the standards presented are workable. Even so, one must always remember that these standards are based on generalized data; at best they are approximations.



MAP 1

Farm Regions

	All groups	Cash grains	Field crops (includes grass seed)	Vegetables and melons	Berries and grapes	Tree fruits and nuts	Horticultural specialties	General farming, primarily crop	Extensive animal grazing	Intensive animal husbandry	Dairy farms	General farms, primarily livestock
ALL FARMS												
Number	1709	47	164	61	27	166	80	48	852	220	30	14
% of total (tenths)	100.0	2.8	9.6	3.6	1.6	9.7	4.7	2.8	49.9	12.9	1.8	0.8
Land in farms (acres)	266765	6406	50012	9745	886	6233	2078	12175	155602	14964	7991	673
% of total	100.0	1.1	23.1	9.4	1.0	4.8	0.8	4.5	58.3	5.6	3.0	0.3
Sales (in $1000)	42808	468	9891	4007	438	2055	4605	2860	6725	4148	5558	55
% of total	100.0	1.1	23.1	9.4	1.0	4.8	10.8	6.7	15.7	14.4	13.0	0.1
FARMS WITH SALES OF $2500 OR MORE												
Number	983	32	98	54	20	95	65	26	453	111	26	3
% of total	58.0	1.9	5.7	3.2	1.2	5.6	3.8	1.6	26.5	6.5	1.6	0.2
Land in farms	226380	5782	45146	9661	658	5193	1938	11310	127103	11488	7913	187
% of total	84.9	2.2	16.9	3.6	0.2	1.9	0.7	4.2	47.6	4.3	3.0	0.1
Sales	41928	449	9808	3998	432	1997	4584	2854	6196	6017	5551	41
% of total	97.9	1.0	22.9	9.3	1.0	4.7	10.7	6.7	14.5	14.1	13.0	0.1

TABLE I: MARKET VALUE OF AGRICULTURAL PRODUCTS SOLD
(Source: Bureau of Census)

	All groups	Cash grains	Field crops (includes grass seed)	Vegetables and melons	Berries and grapes	Tree fruits and nuts	Horticultural specialties	General farming, primarily crop	Extensive animal grazing	Intensive animal husbandry	Dairy farms	General farms, primarily livestock
FARMS GENERATING 80% OF SALES VOLUME												
Number of farms	908	23	35	33	insufficient data	71	insufficient data	13	516	insufficient data	18	insufficient data
% of group total	53.1	48.9	21.3	54.1		42.8		27.1	60.6		60.0	
Smallest size (acres)	40	80	320	80		20		320	40		160	
FARMS GENERATING 70% OF SALES VOLUME												
Number of farms	605	14	insufficient data	20	7	42	18	insufficient data	346	insufficient data	insufficient data	insufficient data
% of group total	35.4	29.8		32.8	35.0	25.3	22.5		40.6			
Smallest farm size	80	160		160	20	40	20		80			
FARMS GENERATING 60% OF SALES VOLUME												
Number of farms	365	insufficient data	insufficient data	11	insufficient data	insufficient data	10	insufficient data	207	insufficient data	9	insufficient data
% of group total	21.4			18.0			12.5		24.3		30.0	
Smallest farm size	160			320			40		160		320	

TABLE II: SELECTED CHARACTERISTICS OF FARMS GENERATING MAJORITY OF SALES VOLUME

(Source: Bureau of Census)

	NUMBER OF FARMS											
	Total	1 to 19 ac	20 to 39 ac	40 to 59 ac	60 to 79 ac	80 to 119 ac	120 to 159 ac	160 to 239 ac	240 to 319 ac	320 to 499 ac	500 to 999 ac	1000 ac or more
Berries and grapes.....	20	[15]	--	2	--	1	--	2	--	--	--	--
Horticultural specialties	65	[49]	7	2	1	1	1	2	--	2	--	--
Intensive animal husbandry.....	111	① 49	[20]	9	4	14	4	6	3	1	--	1
Tree fruits and nuts...	95	38	[18]	14	7	10	3	1	1	2	1	--
All groups.....	983	219	114	100	[78]	100	55	100	54	72	58	33
General farms, primarily livestock....	3	--	1	--	[1]	1	--	--	--	--	--	--
Cash grains.....	32	1	3	3	4	[7]	--	7	3	3	--	1
Vegetables and melons..	54	5	4	5	7	[9]	4	4	5	7	4	--
Extensive animal grazing.....	453	58	51	51	42	[44]	37	52	32	39	35	12
Field crops.....	98	2	7	12	10	8	[3]	16	7	② 9	8	16
Dairy farms.....	26	--	2	--	1	3	2	[8]	1	7	1	1
General farms, primarily crop.....	26	2	1	2	1	2	1	2	[2]	2	9	2

[ ] Median size range

| 30th percentile (aprox.) of sales volume

NOTES:
① 50% of total sales come from operations of less then 20 acres. 30th percentile is somewhere between 1 and 19 acres.
② 85% of total sales come from operations larger then 320 acres. Data does not allow extrapolation of 30th percentile.
③ Insufficient data to determine 30th percentile for General Farms, Primarily Livestock

TABLE III: SIZE DISTRIBUTION O' ARMS HAVING SALES OF $ 2500 OR MORE
(Source: Bureau of Census)

	All groups	Cash grains	Field crops (includes grass seed)	Vegetables and melons	Berries and grapes	Tree fruits and nuts	Horticultural specialties	General farming, primarily crops	Extensive animal grazing	Intensive animal husbandary	Dairy farms	General farms, primarily livestock
Total farms in group												
Number.....	983	32	98	54	20	95	65	26	453	111	26	7
Acres.....	226380	5782	45146	9661	658	5193	1939	11310	127103	11488	7913	187
Farms renting land												
Number.....	301	15	53	37	4	23	9	20	104	22	13	1
Acres.....	101580	3309	28552	5187	(S)	1321	150	5417	50331	5090	2096	(S)

(S) Suppresed data

TABLE IV: LAND RENTED BY FARMS WITH SALES OF $2500 OR MORE

(Source: Bureau of Census)

TABLE V: FARM REGIONS

REGION NO.	SOIL SERIES	PRIMARY CROPS
1	Awbrig-Coburg Oxley-Courtney Dayton- Natroy	Grass seed, wheat, peppermint
2	Awbrig-Coburg Oxley-Courtney Dayton-Natroy	Grass seed, wheat, peppermint
3A,B,C	Awbrig-Coburg Oxley-Courtney Dayton-Natroy	Grass seed, wheat, peppermint
4	Chehalis-Cloquato Newberg-Cloquato-Camas Malabon-Salem	Row crops, orchards, wheat in rotation with peppermint
5	Chehalis-Cloquato Newberg-Cloquato-Camas Malabon-Salem	Row crops, orchards, wheat in rotation with peppermint
6	Nehelam-Nestucca-Brenner	Pasture, cranberry, truffle
7	Chehalis-Cloquato Newberg-Cloquato-Camas Malabon-Salem	Row crops, orchard, wheat in rotation with peppermint
8A,B	Abiqua-McAlpin	Pasture, cereal grain, row crops, grass seed
9A,B	Abiqua-McAlpin	Pasture, cereal grain, row crops, grass seed
12	Nekia-Bellpine-Ritner	Pasture/timber, grass seed, cereal grain
13	Nekia-Bellpine-Ritner	Pasture/timber, cereal grain
16	Bashaw-Natroy	Grass seed
17A,B	Bashaw-Natroy	Pasture
18	Chehalis-Cloquato Newberg-Cloquato Malabon-Salem	Row crop, orchards, wheat in rotation with peppermint

TABLE VI: PARCEL SIZE BY REGION
(All farm units)

Region	Number of cases	Size (in acres)						
		min.	max.	20th percentile	30th percentile	40th percentile	50th percentile (median)	mean
1	236	0.1	405	5	5	18	29	46
2	145	0.4	287	4	5	8	10	38
3A	79	1.3	391	9	12	22	30	54
3B	39	0.7	187	15	18	20	24	40
3C	29	3.3	369	10	14	19	25	45
4	1019	0.2	289	3	5	7	10	24
5	205	0.2	316	3	4	6	10	24
6	18	1.8	118	3	5	5	14	27
7	155	0.9	344	5	6	9	14	27
8A	-	-	-	-	-	-	-	-
8B	122	0.1	303	5	7	11	19	42
9A	28	0.5	155	2	4	9	14	29
9B	36	1.0	219	10	15	34	42	62
12	224	1.0	518	10	14	22	32	60
13	14	1.3	216	13	15	17	47	75
16	405	0.1	418	5	9	13	22	55
17A	133	1.3	468	6	10	12	16	53
17B	44	0.8	619	12	20	31	43	107
18	309	0.3	295	5	8	12	17	30

TABLE VII: PARCEL SIZE BY REGION
(Farm units of 10 acres or larger)

Region	Number of cases	Size (in acres)						
		min.	max.	20th percentile	30th percentile	40th percentile	50th percentile (median)	mean
1	106	10	405	24	32	39	46	66
2	75	10	287	24	36	44	60	68
3A	60	10	391	21	27	31	45	69
3B	34	11	187	18	20	23	29	44
3C	23	11	369	19	20	25	27	55
4	510	10	289	16	19	22	27	43
5	102	10	317	14	18	20	28	44
6	11	12	118	21	24	42	57	58
7	89	10	344	17	19	25	31	43
8A	17	12	163	14	56	69	82	84
8B	75	11	303	20	28	38	44	65
9A	15	14	155	17	20	20	31	51
9B	29	14	219	27	34	42	59	76
12	177	10	519	20	25	36	51	74
13	12	13	216	15	17	47	50	87
16	260	10	418	21	31	39	47	83
17A	89	10	467	14	18	23	34	76
17B	38	11	619	22	27	40	59	124
18	197	10	295	17	20	23	27	45

TABLE VIII

FARM PARCEL SIZE QUESTIONAIRE

For each farming region listed below:

(a) Assume you are farming in the area.
(b) Your total operation is of the approximate size listed.
(c) You are primarily engaged in one or more of the activities listed. You may participate in other activities however the primary activity accounts for over half of gross sales volume.
(d) Given the size, location, and nature of your operation what is the smallest parcel of land you would consider buying or renting (assuming a reasonable price)? What is a more desirable (preferred) size for this operation.
(e) Give a seperate answer for each primary activity listed.

Region No.	Size of Operation (acres)	Primary Activities	Smallest Parcel (acres)	Preferred Parcel (acres)
1	160-239	grass seed	20	80
	120-159	wheat	20	40
	160-239	peppermint	30	60
2	160-239	grass seed	40	80
	120-159	wheat	20	40
	160-239	peppermint	30	60
3A	160-239	grass seed	40	80
	120-159	wheat	20	40
	160-239	peppermint	30	60
3B	160-239	grass seed	40	80
	120-159	wheat	20	40
	160-239	peppermint	30	60
3C	160-239	grass seed	40	80
	120-159	wheat	20	40
	160-239	peppermint	30	60
4	120-159	row crop	20	40
	40-59	orchard	5	10
	120-159	wheat/peppermint	20	40
5	120-159	row crop	20	40
	40-59	orchard	5	10
	120-159	wheat/peppermint	20	40
6	120-159	pasture	10	25
7	120-159	row crop	20	40
	40-59	orchard	5	10
	120-159	wheat/peppermint	20	40

(Table VIII cont.)

Region No.	Size of Operation (acres)	Primary Activities	Smallest Parcel (acres)	Preferred Parcel (acres)
8A	120-159	pasture	15	25
	120-159	cereal grain	20	40
	120-159	row crop	20	40
	160-239	grass seed	40	80
8B	120-159	pasture	15	25
	120-159	cereal grain	20	40
	120-159	row crop	20	40
	160-239	grass seed	40	80
9A	120-159	pasture	15	25
	120-159	cereal grain	20	40
	120-159	row crop	20	40
	160-239	grass seed	40	80
9B	120-159	pasture	15	25
	120-159	cereal grain	20	40
	120-159	row crop	20	40
	160-239	grass seed	40	80
12	120-159	pasture/timber	--	--
	120-159	cereal grain	30	40
	160-239	grass seed	40	80
13	120-159	pasture/timber	10	25
	120-159	cereal grain	20	40
16	160-239	grass seed	40	80
17A	120-159	pasture	15	25
17B	120-159	pasture	20	40
18	120-159	row crop	20	40
	40-59	orchard	5	10
	120-159	wheat/peppermint	20	40

Footnote: wheat/peppermint = wheat and peppermint in rotation

TABLE IX: SELECTED STANDARD FOR FARM PARCEL SIZE

Region	Selected Standard (acres)
1	40
2	40
3A	40
3B	30
3C	30
4	30
5	30
6	25
7	30
8A	60
8B	40
9A	40
9B	40
12	40
13	40
16	40
17A	25
17B	40
18	25

APPENDIX A

EXTENSION SERVICE
Lane County Office

Oregon State University

950 W. 13th Avenue
Eugene, Oregon 97402-3999

687-4243 Agriculture,
Home Economics, 4-H
697-4281 Nutrition

April 19, 1983

TO: Vern Delk
County & Community Development
Courthouse
Eugene, OR 97401

FROM: Mike Stoltz
Extension Agent

RE: Land Use Planning Criteria Questions

1. Can crop types be regionalized?
2. Can generalized soils mapping be used as a guide to farming type?

Yes, with location combined with soil types. Examples are: West of 99 from Eugene, north to Benton County line on soils of Awbrig-Coburg association, Oxley-Courtney association and Dayton association, the crops are primarily grass seed with wheat and peppermint on the higher, better drained ground. These could be classified as "extensive" or primarily agronomic crops. This description would also fit the area east of Coburg Road between Coburg and Harrisburg and in the Creswell-Walker area on the coast fork of the Willamette.

The area east of 99 and Prairie Road all the way across the Willamette to Coburg Road on soils of Chehalis-Cloquato association, Newburg-Cloquato-Camas association, and the Malabon-Salem association are primarily row crops and orchards with wheat or peppermint as rotations. Some of this ground is often in wheat but is suited for the more "intensive" or horticulture crops. This is also true of these associations running up the McKenzie and the forks of the Willamette.

The areas of the Mohawk Valley, north of Walterville, and around Cottage Grove on soils of Abiqua-McAlpin association are mixed agriculture areas, primarily made up of pasture, cereal grains and small amounts of row crop on better drained sites, and grass seed on poorer drained sites.

The Bellpine-Hazelair-Philomath association soils are predominately timber. However, some pasture is predominant on the poorer drained soil and on the lower slopes.

The Nekia-Bellpine-Ritner association soils up the Mohawk are primarily pasture-timber mixture, with some grass seed and cereal grains, as they are to the southwest of Eugene-Springfield, west of Territorial Road, and up the forks of the Willamette.

The Veneta-Salkum association soils around Fern Ridge are used for orchards and berries, particularly on Veneta soils, with some grass seed on Salkum soils. Timber is usually the case on the steeper slopes and pasture on lower slopes. Pasture also predominates on the smaller and/or less developed parcels.

The Nehalem-Nestucca-Brenner association soils on the coast are primarily in pasture. Some of the Braillier-Brenner association soils on the coast are also in pasture but are also suitable for cranberry or truffle production, which are both very intensive, small acreage enterprises.

The Bashaw-Natroy association soils are primarily pasture except for that area between Highway 99 and Territorial Road, which is again grass seed.

A number of exceptions exist on soil associations listed as grass seed where drainage tile has been installed. Crops there are wheat, peppermint, vegetable seed crops and row crops.

I think these associations will work for determining predominant agriculture type for an area. They are probably too broad for pinpoint zoning, for example, in the Bellpine-Hazelair-Philomath association is the Dixonville-Philomath-Hazelair Complex.

Several years ago, there was considerable discussion on keeping 374C Dixonville-Philomath-Hazelair Complex in an agricultural capability classification. The Soil Conservation Service, however, felt there was no need to keep such poor soils for resource land--agricultural or timber. It does not have an economic value for seed crops as many of the Class IV soils, and is marginal for woodland with a 30-year root-rot/blowdown connotation to forest consultants.

This Complex as well as single units of each soil, with Panther in many of the drainages, is found at Gimpl Hill, in the Eugene south hills, Coburg Hills, etc. There is concern over an F1 zoning being assigned to these areas as a buffer between agricultural and timber land. In most areas where these soils are found, however, there is no need for such a designation. For instance, the Coburg Hills above I-5 have low site timber soils and are not being intensively managed for woodland. In fact, many owners in that area are using a combination of grazing and timber as the best management practice. This is agreeable with the natural ecology of such low site areas.

3. Is the size of a commercial farm enterprise different than a land division parcel size that is "appropriate for the continuation of existing commercial agriculture" within the area?

Yes--most of the commercial agriculture farms consist of some owned land and one of more parcels of rented land. The size of parcel and the distance from the main headquarters are the determining factors after price of the lease. The larger parcels are more desirable as is closeness to the headquarters.

4. Can minimum parcel size be approximated, through expert opinion for different areas based on most common or most suitable crop type?

A qualified yes--the qualification being that a land productivity rating system be part of or used by the "experts" - a system such as the one published by Oregon State University Extension in EC 1105 (October, 1982). The Agriculture Land Evaluation and Site Assessment (LESA) System could also be incorporated into the process.

5. Which central tendency of farm unit appears most appropriate?

I would think the 80 percentile would be restrictive enough in determining what size a farm had to be in order to get a designation as a farm unit. At that size, the farm is definitely more than a sideline or hobby. It still may be part time, and could justify a farm dwelling. We may need to look at operations of that size in each category to test that observation out.

mh
cc: James R. Pease, OSU
Harold Kerr, OSU

APPENDIX E

Lane County Soil Ratings for Forestry and Agriculture

The Lane County Land Management Division, with technical assistance from Lane Council of Governments, compiled this data to assist the public in preparing land use applications. The Natural Resources Conservation Service (NRCS) reviewed the soil and methodology.

Map Symbol	Lane County Soil Map Unit	Douglas Fir Site Index	Cu. Ft./ Acre/ Year	Agricultural Capability Class	High Value Farmland
01A	Abiqua silty clay loam, 0 - 3% slopes	135	203	1	X
01B	Abiqua silty clay loam, 3 - 5% slopes	135	203	2	X
02E	Astoria silt loam, 5 - 30% slopes	130	193	6	
03E	Astoria Variant silt loam, 3 - 30% slopes	none		6	
03G	Astoria Variant silt loam, 30 - 60% slopes	none		6	
04G	Atring-Rock outcrop complex, 30 - 60% slopes	***	81	6	
05	Awbrig silty clay loam	none		4	X
06	Awbrig-Urban land complex	none		4	
07B	Bandon sandy loam, 0 - 7% slopes	105	145	3	
07C	Bandon sandy loam, 7 - 12% slopes	105	145	3	
07F	Bandon sandy loam, 12 - 50% slopes	105	145	6	
08	Bashaw clay	none		4	X
09	Bashaw-Urban land complex	none		4	
10	Beaches	none		8	
11C	Bellpine silty clay loam, 3 - 12% slopes	115	163	3	X
	Bellpine silty clay loam, 12 - 20% slopes	115	163	3	X
11E	Bellpine silty clay loam, 20 - 30% slopes	115	163	4	X
11F	Bellpine silty clay loam, 30 - 50% slopes	115	163	6	
12E	Bellpine cobbly silty clay loam, 2 - 30% slopes	115	163	4	
13F	Blachly clay loam, 30 - 50% slopes	119	173	6	
13G	Blachly clay loam, 50 - 70% slopes	119	173	7	
14E	Blachly silty clay loam, 3 - 30% slopes	125	184	6	
14F	Blachly silty clay loam, 30 - 50% slopes	125	184	6	
15E	Blachly-McCully clay loam, 3 - 30% slopes	***	172	6	
16D	Bohannon gravelly loam, 3 - 25% slopes	118	171	6	
16F	Bohannon gravelly loam, 25 - 50% slopes	118	171	6	
16H	Bohannon gravelly loam, 50 - 90% slopes	118	171	7	
17	Brallier muck, drained	none		4	
18	Brallier Variant muck	none		5	
19	Brenner silty clay loam	none		3	X
20B	Briedwell cobbly loam, 0 - 7% slopes	103	141	3	X
21B	Bullards-Ferrelo loams, 0 - 7% slopes	***	84	3	
21C	Bullards-Ferrelo loams, 7 - 12% slopes	***	84	3	
21E	Bullards-Ferrelo loams, 12 - 30% slopes	***	76	4	
	Bullards-Ferrelo loams, 30 - 60% slopes	***	76	6	

APPENDIX F

ATTACHMENT D

NEIL GOLDSCHMIDT
GOVERNOR

Forestry Department

OFFICE OF STATE FORESTER

2600 STATE STREET, SALEM, OREGON 97310 PHONE 378-2560

General File 7-1-1

MEMORANDUM

Subj: Forest Lands Soils Ratings - Revisions

To : Ron Eber, Policy Analyst, DLCD

From: Dave Stere, Director, Forest Resources Planning

Date: February 8, 1990

Attached are revisions to my listing of Forest Soils Productivity Ratings for Lane, Benton, Linn, Marion, Polk and Yamhill Counties.

I've revised these ratings based upon the valuable information gained during the field tour in Lane County, and on the vegetational comparisons that we can now make as a result of that information.

I'm certain that more revisions are warranted in other areas and on other soils. As I mentioned to you before, we are ready and willing to make revisions if field-gathered information shows them warranted.

I'll send copies of these revisions to Jerry Latshaw and Herb Huddleston and to the affected Counties.

DS-200

LANE COUNTY - FOREST SOILS RATINGS

SCS #	SCS Name	(Site Index) Rating		SCS Acreage	Cuft/Ac per yr	
004G	Atring-Rock Outcrop Complex, 30-60%	Med	120	1140	86	
005	Awbrig sicl	3		9890	est 40	
006	Awbrig Urban Land complex	3		350	est 20	
008	Bashaw c	3		9650	est 30	
009	Bashaw-Urban Land complex	3		350	est 20	
010	Beaches	3		1000		
017	Brallier muck, drained	3		1160		
018	Brallier muck, tidal	3		930		
019	Brenner sicl	3		860		
021B	Bullards-Ferrelo loams, 0-7%	Med	144	510	est 80	
021C	Bullards-Ferrelo loams, 7-12%	Med	144	1560	est 80	
021E	Bullards-Ferrelo loams, 12-30%	Med	144	1210	est 80	
021G	Bullards-Ferrelo loams, 30-60%	Med	144	850	est 80	
022	Camas gr sl, occ flooded	3		6370	est 40	
023	Camas-Urban land complex	3		600	est 20	
028C	Chehulpum sil, 3-12%	3		1970	est 40	
028E	Chehulpum sil, 12-40%	3		440	est 40	
033	Conser sicl	3		4200	est 45	
034	Courtney gr sicl	3		2920	est 40	
039	Dayton, sil, clay sub	3		4280	est 40	
042E	Dixonville-Hazelair-Urban Land, 12-35%	Low		640	est 35	
043C	Dixonville-Philomath-Hazelair, 3-12%	Med		11480	est 45	
043E	Dixonville-Philomath-Hazelair, 12-35%	Med		22990	est 45	
044	Dune Land	3		5870		
045C	Dupee sil, 3-20%	Med		20190	est70	*
048	Fluvents, Nearly Level	3		9550		
052B	Hazelair sicl, 2-7%	Low		5680	est 40	
052D	Hazelair, 7-20%	Low		41510	est 40	
053	Heceta fs	3		2010	est 20	
073	Linslaw l	2		5700	est 80	
075	Malabon sicl	2		15350	est 65	
076	Malabon-Urban land complex	2		6420	est 50	
077B	Marcola cob sicl, 2-7%	Med		690	est 70	
085	Natroy sicl	3		15170	est 60	
086	Natroy sic	3		2100	est 60	
087	Natroy-Urban Land Complex	3		610	est 40	
094C	Netarts fs, 3-12%	Med	80	1060	58	
094E	Netarts fs, 12-30%	Med	80	420	58	
098	Noti l	3		3860	est 30	
100	Oxley gr sil	2		2010	est 80	
101	Oxley-Urban land complex	2		870	est 60	
102C	Panther sicl, 2-12%	3		8400	est 45	
103C	Panther-Urban Land complex, 2-12%	3		440	est 40	
105A	Pengra sil, 1-4%	3		5070	est 45	
106A	Pengra-Urban land complex, 1-4%	3		780	est 30	
107C	Philomath sic, 3-12%	Low		2280	est 45	
108C	Philomath cob sic, 3-12%	Low		2280	est 45	
108F	Philomath cob sic, 12-45%	Low		7090	est 45	
109F	Philomath-Urban land complex, 12-45%	Low		270	est 20	

)	Pits	3	700		
4	Riverwash	3	2050		
5H	Rock Outcrop-Kilchis complex, 30-90%	Low	3950		34
6G	Rock Outcrop-Witzel complex, 10-70%	Low	1480		21
5C	Steiwer l, 3-12%	Low	2790	est	30
5D	Steiwer l, 12-20%	Low	1000	est	30
5F	Steiwer l, 20-50%	Low	1240	est	30
7C	Urban Land-Hazelair-Dixonville, 3-12%	Low	1450	est	45
0	Waldo sicl	3	7550	est	45
1C	Waldport fs, 0-12%	Low 92	1700		29
1E	Waldport fs, 12-30%	Low 92	1000		29
1G	Waldport fs, 30-70%	Low 92	650		29
2E	Waldport fs, thin surf., 0-30%	Low 92	2110		29
3C	Waldport-Urban Land Complex, 0-12%	Low	250	est	20
6	Willanch fsl	3	870	est	40
7F	Winberry v gr l, 10-45%	Low 70	560		48
8E	Witzel v cob l, 3-30%	Med 90	5780		70
8G	Witzel v cob l, 30-75%	Med 90	5520		70
1	Yaquina-Urban land complex	3	260	est	45
2G	Yellowstone-Rock Outcrop, 10-60%	Low 86	1560		38

No examples of Forested lands on Dupee soil found...adjacent areas had a productivity rating of (est) 45 cuft/acre/yr. This rating is questionable.

D-P-H & ... low ... 91220 ac (50% (H. low)

low 189,500 ac

med

otal - LOW & MEDIUM ratings -- 293,500 acres

01A	Abiqua sicl, 0-3%	High 152	5210		161
01B	Abiqua sicl, 3-5%	High 152	1230		161
02E	Astoria sil, 5-30%	High 170	3380		181
03E	Astoria Variant sil, 3-30%	High 170	200		181
03G	Astoria Variant sil, 30-60%	High 170	1500		181
07B	Bandon sl, 0-7%	High 138	240		142
07C	Bandon sl, 7-12%	High 138	220		142
07F	Bandon sl, 12-50%	High 138	270		142
11C	Bellpine sicl, 3-12%	High 155	15950		164
11D	Bellpine sicl, 12-20%	High 155	58600		164
11E	Bellpine sicl, 20-30%	High 155	38100		164
11F	Bellpine sicl, 30-50%	High 155	27100		164
12E	Bellpine cob sicl, 2-30%	High 155	4230		164
13F	Blachly cl, 30-50%	High 148	13400		156
13G	Blachly cl, 50-70%	High 148	2960		176
14E	Blachly sicl, 3-30%	High 165	7030		176
14F	Blachly sicl, 30-50%	High 165	8520		176
15E	Blachly-McCully cls, 3-30%	High 147	23000		155
16D	Bohannon gr l, 3-25%	High 155	15800		164
16F	Bohannon gr l, 25-50%	High 155	27770		164
16H	Bohannon gr l, 50-90%	High 155	92000		164
0	Briedwell cob l, 0-7%	High 135	1780		138
0	Chapman l	1	3800	est	140
5	Chapman-Urban land complex	1	1070	est	100
6	Chehalis sicl, occ flooded	1	9300	est	100
027	Chehalis-Urban land complex	1	700	est	90
		1	5170	est	120

	Coburg sicl					
	Coburg-Urban land complex					
D	Crusier gr cl, 3-25%					
F	Crusier gr cl, 25-50%					
G	Cruiser gr cl, 35-70%					
D	Cumley sicl, 2-20%					
C	Cupola cob l, 3-12%					
E	Cupola cob l, 12-30%					
E	Digger gr l, 10-30%					
F	Digger gr l, 30-50%					
H	Digger-Rock outcrop complex, 50-85%					
C	Dixonville sicl, 3-12%					
E	Dixonville sicl, 12-30%					
F	Dixonville sicl, 30-50%					
	Eilertsen sil					
E	Fendall sil, 3-30%					
E	Formander l, 3-30%					
G	Formander l, 30-60%					
G	Formander-Hembre-Klicitat, 50-80%					
B	Haflinger-Jimbo complex, 0-5%					
D	Hembre sil, 5-25%					
G	Hembre sil, 25-60%					
E	Hembre-Klickitat complex, 3-30%					
G	Hembre-Klickitat complex, 30-60%					
	Holcomb sicl					
D	Holderman ext cob l, 5-25%					
F	Holderman ext cob l, 25-50%					
G	Holderman ext cob l, 50-75%					
D	Honeygrove sicl, 3-25%					
F	Honeygrove sicl, 25-50%					
E	Hullt l, 2-30%					
G	Hullt l, 30-60%					
D	Hummington gr l, 5-25%					
F	Hummington gr l, 25-50%					
G	Hummington gr l, 50-75%					
	Jimbo sil					
B	Jimbo-Haflinger complex, 0-5%					
C	Jory sicl, 2-12%					
D	Jory sicl, 12-20%					
E	Jory sicl, 20-30%					
D	Keel cob cl, 3-25%					
F	Keel cob cl, 35-45%					
G	Keel cob cl, 45-75%					
G	Kilchis st l, 30-60%					
H	Kilchis st l, 60-90%					
D	Kinney cob l, 3-20%					
F	Kinney cob l, 20-50%, N					
G	Kinney cob l, 50-70%, N					
F	Kinney cob l, 20-50%, S					
G	Kinney cob l, 50-70%, S					
	Kinney cob l, slump, 3-30%					
	Klickitat st l, 3-30%					
F	Klickitat st l, 30-50%, N					
G	Klickitat st l, 50-75%, N					
F	Klickitat st l, 30-50%, S					
	Klickitat st l, 50-75%, S					
		1	13480	est	100	
		1	2740	est	90	
		High	135	2670		138
		High	135	1710		138
		High	135	360		138
		High	154	34000		163
		High	124	2530		121
		High	124	1110		121
		High	145	970		152
		High	145	3730		152
		High	145	62140		114
		High	120	3360		115
		High	120	3670		115
		High	120	3280		115
		High	159	1580		169
		High	150	720		158
		High	162	4690		172
		High	162	5130		172
		High	165	24510		170
		High	159	1990		161
		High	170	650		181
		High	170	1030		181
		High		1920		170
		High		1760		168
		1		1560	est	100
		High	120	490		98
		High	120	1900		98
		High	120	1600		98
		High	165	31050		176
		High	165	10430		176
		High	165	480		176
		High	165	400		176
		High	145	840		152
		High	145	1620		152
		High	145	7530		152
		High	162	2550		173
		High		590		167
		High	155	4560		164
		High	155	6940		164
		High	155	3130		164
		High	139	6390		144
		High	139	9300		144
		High	139	5060		144
		High	110	2370		98
		High	110	7920		98
		High	150	6970		158
		High	162	9010		172
		High	162	18220		172
		High	150	13710		164
		High	150	7780		164
		High	168	15530		180
		High	144	10050		165
		High	156	8350		165
		High	156	37150		145
		High	140	25900		145
		High	140	68800		150

4B	Lint sil, 0-7%	High	160	1120		170
74C	Lint sil, 7-12%	High	160	1510		170
74D	Lint sil, 12-20%	High	160	1860		170
74E	Lint sil, 20-40%	High	160	1920		170
78	McAlpin sicl	High	159	11860		169
79	McBee sicl	1		5200	est	100
80F	McKully cl, 30-50%	High	162	7730		172
80G	McKully cl, 50-70%	High	162	4210		172
81D	McDuff cl, 3-25%	High	142	3010		148
81F	McDuff cl, 25-50%	High	142	3000		148
81G	McDuff cl, 50-70%	High	142	950		148
82C	Meda l, 2-12%	High	161	10650		171
83B	Minniece sicl, 0-8%	High	130	1420		129
84D	Mulkey l, 5-25%	High	143	230		224
88	Nehalem sil	High	174	5950		186
89C	Nekia sicl, 2-12%	High	151	4960		159
89D	Nikia sicl, 12-20%	High	151	15520		159
89E	Nikia sicl, 20-30%	High	151	8760		159
89F	Nikia sicl, 30-50%	High	151	7580		159
90	Nekoma sil	High	180	7170		191
91D	Neskowin sil, 12-20%	High	133	560		205
91E	Neskowin sil, 20-40%	High	133	230		205
92G	Neskowin-Salander sil, 40-60%	High	133	4350		205
93	Nestucca sil	1		5830	est	130
95	Newberg fsl	1		2970	est	150
96	Newberg l	1		4490	est	150
97	Newberg-Urban land complex	1		930	est	100
99H	Ochrepts & Umbrepts, v. steep	1		1070	est	130
04E	Peavine sicl, 3-30%	High	155	68300		164
04G	Peavine sicl, 30-60%	High	155	124810		164
11D	Preacher l, 0-25%	High	181	10950		192
11F	Preacher l, 25-50%	High	181	25600		192
12G	Preacher-Bohannon-Slickrock, 50-75%	High		113500		185
13C	Ritner cob sicl, 2-12%	High	131	2940		131
13E	Ritner cob sicl, 12-30%	High	131	14890		131
13G	Ritner cob sicl, 30-60%	High	131	21340		131
17E	Salander sil, 12-30%	High	133	770		205
18	Salem gr sil	1		7550	est	130
19	Salem-Urban land complex	1		2300	est	100
20B	Salkum sil, 2-6%	High	145	5060		151
21B	Salkum sicl, 2-8%	High	145	5160		151
21C	Salkum sicl, 8-16%	High	145	2160		151
22	Saturn cl	High	162	4210		172
23	Sifton gr l	1		650		
24D	Slickrock gr l, 3-25%	High	194	1850		203
24F	Slickrock gr l, 25-50%	High	194	1500		203
26F	Tahkenitch l, 20-45%	High	156	390		165
26G	Tahkenitch l, 45-75%	High	156	500		165
28B	Veneta l, 0-7%	High	139	11930		144
29B	Veneta Variant sil, 0-7%	High	150	1320		158
34D	Willakenzie cl, 2-12%	High	160	2500		170
34E	Willakenzie cl, 12-20%	High	160	7320		170
35E	Willakenzie cl, 20-30%	High	160	6490		170
35F	Willakenzie cl, 30-50%	High	160	10610		170
39	Woodburn sil	1		215	est	170

1 - HIGH rating -- 1,455,415 acres

These soils ratings are based upon published SCS data. Estimates are derived by the Oregon Department of Forestry from comparisons of natural vegetation complex information in published SCS data for soils where the data do not include measured forest productivity information with other soils where such information is available.

Soils marked with numbers are soils where the data are insufficient to make a more-precise determination; or where SCS data indicates that forest growth is unlikely. Soils are not rated where data indicate that tree growth does not occur on the soil.

3" indicates productivity probably less than 50 cuft/ac/yr
2" indicates productivity probably between 50 and 85 cuft/ac/yr
1" indicates productivity probably more than 85 cuft/ac/yr

Where the soil is given a number rating, the productivity estimate shown is of lower precision than for other productivity estimates.

BEFORE THE LAND USE BOARD OF APPEALS

OF THE STATE OF OREGON

JAMES JUST,
Petitioner,

vs.

LANE COUNTY,
Respondent,

and

ROY CARVER III,
Intervenor-Respondent.

JUN08'05 PM12:58 LUBA

LUBA No. 2005-029

FINAL OPINION
AND ORDER

Appeal from Lane County.

James P. Just, Lebanon, filed the petition for review and argued on his own behalf.

Stephen L. Vorhes, Lane County Legal Counsel, Eugene, filed the response brief and argued on behalf of the respondent.

P. Steven Cornacchia, Eugene, filed the response brief and argued on behalf of intervenor-respondent. With him on the brief was Hershner Hunter LLP.

BASSHAM, Board Member; DAVIES, Board Chair; HOLSTUN, Board Member, participated in the decision.

AFFIRMED 06/08/2005

You are entitled to judicial review of this Order. Judicial review is governed by the provisions of ORS 197.850.

Opinion by Bassham.

NATURE OF THE DECISION

Petitioner appeals an ordinance that changes the comprehensive plan designation for a 42.2-acre parcel from "Forest Land" to "Marginal Land," and rezones the property from Impacted Forest Lands (F-2) to Marginal Lands (ML).

MOTION TO INTERVENE

Roy Carver III (intervenor), the applicant below, moves to intervene on the side of respondent. There is no opposition to the motion, and it is allowed.

MOTION TO FILE REPLY BRIEF

Petitioner seeks permission to file a reply brief, to address alleged new matters raised in the response briefs. There is no opposition to the reply brief, and it is allowed.

FACTS

The subject property is a 42.2-acre irregularly shaped parcel bordered on the north and east by the City of Eugene urban growth boundary. The northern portion of the property is relatively flat, rising to the south, and covered with scattered stands of Ponderosa Pine, Douglas Fir and oak trees. The property has received forest tax deferral since 1970. The adjoining properties to the north, west and east are in rural or urban residential zoning. To the south of the subject property lies a 53.60-acre parcel also zoned F-2.

In 1987, the Soil Conservation Service (SCS, now the National Resource and Conservation Service (NRCS)) published a soil survey for the county. According to the 1987 soil survey, the soils on the subject property consist of the following four soil types or complexes:

> Unit 43C Dixonville-Philomath-Hazelair Complex, 3 to 12 percent slopes, agricultural capability class VI, 19 acres (48%);
>
> Unit 43E Dixonville-Philomath-Hazelair Complex, 12 to 35 percent slopes, agricultural capability class VI, 1.145 acres (3.6%);
>
> Unit 45C Dupee Silt Loam, agricultural capability class III, 15 acres (39%);

Unit 138E Witzel Very Cobbly Loam, agricultural capability class VI, 3.6 acres (9%).

Thus, slightly more than half of the soils on the property consist of Units 43C and 43E, the two Dixonville-Philomath-Hazelair complexes.[1] The 1987 soil survey rates the agricultural capability of Units 43C and 43E as Class VIe.[2] However, the 1987 soil survey assigns higher capability classifications to some of the individual soils that make up the Unit 43C and 43E complexes. Unit 41C (Dixonville silty clay loam, 3 to 12 percent slopes) is class IIIe, and Unit 41E (Dixonville silty clay loam, 12 to 30 percent slopes) is class IVe. Similarly, Units 52B (Hazelair silty clay loam, 2 to 7 percent slopes) and 52D (Hazelair silty clay loam, 7 to 20 percent slopes) are rated IIIe and IVe, respectively.

Lane County is a "marginal lands" county, and therefore may designate certain lands as marginal lands, under *former* ORS 197.247. OAR 660-033-0020(8)(j). In September 2003, intervenor applied to redesignate the subject property from "Forest Land" to "Marginal Land," and to rezone the property from F-2 to ML. Under the requested plan map and zoning map designations, the property could develop at a density of one dwelling per 10 acres. The

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[1] The 1987 soil survey describes a soil complex as follows:

> "A complex consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Dixonville-Philomath-Hazelair complex, 3 to 12 percent slopes, is an example."

[2] The 1987 soil survey describes the composition of Unit 43C as follows:

> "This unit is 30 percent Dixonville silty clay loam, 30 percent Philomath cobbly silty clay, and 25 percent Hazelair silty clay loam. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used. Included in this unit are small areas of Panther, Ritner, and Witzel soils and Rock outcrop. Included areas make up about 15 percent of the total acreage." Record 63.

The soil survey describes the composition of Unit 43E as follows:

> "This unit is 35 percent Dixonville silty clay loam, 30 percent Philomath cobbly silty clay, and 20 percent Hazelair silty clay loam. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used. Included in this unit are small areas of Ritner and Witzel soils and Rock outcrop. Included areas make up about 15 percent of the total acreage." Record 64.

county planning commission recommended approval. The county board of commissioners held a hearing on December 15, 2004, and approved the application on January 12, 2005. This appeal followed.

MOTION TO STRIKE

Petitioner moves to strike appendices A-F, and H, attached to intervenor's response brief, arguing that the documents therein are not in the record, subject to official notice, or the subject of a motion to take evidence under OAR 661-010-0045. Intervenor does not argue that any of the cited appendices are in the record, request that we take official notice, or request that we consider those documents pursuant to OAR 661-010-0045. Accordingly, we grant the motion to strike, and will not consider appendices A-F and H, or the references to those appendices in intervenor's brief.

FIRST, SECOND AND THIRD ASSIGNMENTS OF ERROR

Former ORS 197.247 (1991) allowed a county to designate as "marginal lands" lands that met a series of tests.[3] The "gross income" test at ORS 197.247(1)(a) requires a finding

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[3] ORS 197.247(1) (1991) provided, in relevant part:

> "In accordance with ORS 197.240 and 197.245, the commission shall amend the goals to authorize counties to designate land as marginal land if the land meets the following criteria and the criteria set out in subsections (2) and (4) of this section:
>
> "(a) The proposed marginal land was not managed during three of the five calendar years preceding January 1, 1983, as part of a farm operation that produced $20,000 or more in annual gross income or a forest operation capable of producing an average, over the growth cycle, of $10,000 in annual gross income; and
>
> "(b) The proposed marginal land also meets at least one of the following tests:
>
> "* * * * *
>
> "(C) The proposed marginal land is composed predominantly of soils in capability classes V through VIII in the Agricultural Capability Classification System in use by the United States Department of Agriculture Soil Conservation Service on October 15, 1983, and is not capable of producing * * * eighty-five cubic feet of merchantable timber per acre per year in those counties west of the summit of the Cascade Range, as that term is defined in ORS 477.011(21)."

that the proposed marginal land was not managed, during three of the five calendar years preceding January 1, 1983, as part of (1) a farm operation producing grossing $20,000 or more in annual gross income, or (2) a forest operation capable of producing an average, over the growth cycle, of $10,000 in annual gross income. The "productivity" test at ORS 197.247(1)(b)(C) requires a finding that (1) the land is composed predominantly of Class V through VIII soils in the capability classification system in use by SCS on October 15, 1983, and (2) the land is not capable of producing 85 cubic feet of timber per acre per year (cf/ac/yr).

The county concluded that the subject property met both the "gross income" test and the "productivity" test. Petitioner challenges both conclusions.

A. Gross Income Test (ORS 197.247(1)(a))

In 1997, the county board of commissioners issued an "information sheet" that sets out the following methodology for applying the "forest operation" prong of the ORS 197.247(1)(a) gross income test:

> "1. Based on the best information available regarding soils, topography, etc., determine the optimal level of timber production for the tract assuming reasonable management.
>
> "2. Assume that the stand was, in 1983, fully mature and ready for harvest.
>
> "3. Using the volumes calculated in step (1), and 1983 prices, calculate the average gross income over the growth cycle." Record 36.

The information sheet also directs that the methodology assume a 50-year growth cycle, *i.e.*, divide by 50 the timber revenue produced at harvest of a (hypothetical) fully mature stand to determine the average annual gross income. Intervenor does not dispute that the subject

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In addition, ORS 197.247(5) (1991) provided:

> "A county may use statistical information compiled by the Oregon State University Extension Service or other objective criteria to calculate income for the purposes of paragraph (a) of subsection (1) of this section."

property was part of a "forest operation" during three of the five calendar years preceding January 1, 1983. However, intervenor submitted expert testimony using the county's methodology concluding that the subject property is not capable of producing $10,000 in average annual gross income over a 50-year growth cycle, as measured in 1983 dollars.[4]

Petitioner contends that ORS 197.247 requires the county to use actual or projected lumber prices at the time of harvest in applying the gross income test and, further, that there is no basis in the statute to assume a 50-year growth cycle. According to petitioner,

> "* * * The county's findings assume a 50-year growth cycle. Actual growth cycles could be considerably longer. Evidence in the record establishes that trees were planted on the subject property at some time prior to March 1979, and that the trees were still present in 1982. The projected harvest date for the trees planted on the subject property would therefore be no sooner than sometime around 2029, a minimum of fifty years following planting. There is no evidence in the record which suggests that 1983 timber pricing would prevail in 2029, and no reasonable person could conclude from evidence in the record that 1983 prices would be in fact be obtained by the forest operation manager.
>
> "ORS 197.247(1)(a) requires that average income be projected over the growth cycle, and thus clearly anticipates that the harvesting of timber would occur at different times over the growth cycle and that prices obtained would be those prevailing at the time of harvest. Nothing in ORS 197.247(1)(a) mandates or ever mentions the use of a 1983 timber harvest date or the use of timber prices prevailing at that time. There is no basis whatsoever in law or in fact for the county's reliance on 1983 timber prices in its decision." Petition for Review 18.

We understand petitioner to contend that the county must (1) estimate the harvest date of the trees planted in 1979 based on the actual or optimal growth cycle, (2) estimate the timber

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[4] It is not clear whether the subject property was part of a larger forest operation involving multiple properties during three of the five calendar years preceding January 1, 1983, or whether the "forest operation" included only the subject property during the relevant period. ORS 197.247(1)(a) can be read to apply the gross income threshold test to the farm and forest operation itself, not limited to the subject property. In other words, the pertinent question under ORS 197.247(1)(a) may not be whether the *subject property* can produce $10,000 in average annual income, the question that intervenor's forestry consultant asked and answered, but whether the forest operation that the property is or was part of can produce $10,000 in average annual income. However, petitioner does this challenge this aspect of the evidence submitted under the gross income test, and therefore we need not address or resolve that question.

prices on the projected harvest date, and (3) based on those estimates determine whether the subject property is capable of producing an average, over the growth cycle, of $10,000 in annual gross income.[5]

Although ORS 197.247(1)(a) does not expressly mandate that counties use 1983 timber prices in applying the gross income test, we agree with the county and intervenor that it implicitly does so. The purpose of the forest operation test is to identify lands that are not capable of meeting the specified $10,000 threshold averaged over the growth cycle. Both the "farm operation" and "forest operation" prongs of the test are specifically linked to January 1, 1983. There is no explicit provision to adjust either threshold for inflation or other economic changes over subsequent decades. The $10,000 threshold would rapidly become outdated and incapable of performing its intended function if counties (1) must use inflated timber prices but (2) cannot adjust the $10,000 threshold to compensate for inflation since 1983. In a relatively short time it would become difficult if not impossible to designate any marginal land under ORS 197.247(1)(a). Clearly, that was not the legislature's intent. The text and context of ORS 197.247(1)(a) make it reasonably clear that the statute requires an "apples to apples" comparison. If the unadjusted threshold ($10,000 in 1983 dollars) is used, then the estimate of annual average timber revenue derived from the property must also be based on 1983 timber prices.[6]

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[5] In support of his view that the statute requires use of current timber values, petitioner also cites to *DLCD v. Lane County*, 23 Or LUBA 33 (1992) (*Ericsson*), in which LUBA affirmed a county decision that designated marginal lands under the ORS 197.247(1)(a) forest operation prong of the gross income test, based in part on evidence of then-current timber values. However, while *Ericsson* recites the county's findings describing the methodology used by the applicant's expert, no issue was raised regarding the expert's use of current timber values, and our decision expressed no views on that point.

[6] In response to petitioner's arguments against using 1983 prices, intervenor's consultant also calculated revenues based on current timber values, and concluded that even so calculated the average annual gross income fell below the $10,000 threshold. Record 371. Intervenor argues that this evidence renders petitioner's objections to using 1983 prices moot. Petitioner disagrees, arguing that use of current prices rather than the estimated price at the projected harvest date is also inappropriate. Our conclusion that the county did not err in using 1983 timber prices makes it unnecessary to address these contentions.

To the extent resort to legislative history is warranted, the history directed to our attention is consistent with the above textual analysis. Intervenor attaches to its brief transcripts of the House and Senate committee hearings that led to adoption of ORS 197.247. Those transcripts make it reasonably clear that the legislature intended the gross income test under ORS 197.247(1) to be applied based on the five-year period preceding January 1, 1983, and not based on subsequent years. The question of whether to include a mechanism to adjust the income test for inflation was discussed, and apparently rejected as unnecessary, because the income test was linked to the five-year period preceding January 1, 1983.[7] Petitioner does not dispute that point with respect to the "farm operation" prong of the gross income test, but argues there is no indication that the legislature intended the "forest operation" prong to be also fixed at 1983 levels. However, the legislative discussion of the question of adjusting for inflation, while directed at the farm operation element of ORS 197.247(1)(a), seems equally applicable to the forest operation prong of that subsection. We conclude that the legislative history of ORS 197.247(1)(a) brought to our attention does not support petitioner's view of the statute, and is more consistent with the county's approach.

With respect to the 50-year growth cycle assumed under the county's methodology, petitioner does not explain why it is unreasonable to assume a 50-year growth cycle, or why ORS 197.247(1)(a) compels the county to assume a longer or different cycle.

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[7] *See* testimony of Richard Benner before the House Committee on Energy and Environment on SB 237, Tape 260, Side A:

> "* * * [The gross income test] is intended to be the way it reads which is, you use the five-year period preceding the effective date of the Act. The reason the farmers chose that language was to get in part at Representative Parkinson's point about inflation. If you look at a set period in time, those numbers can't inflate over time. Those figures are set, obviously, and they have been. * * *"

B. Productivity Test (ORS 197.247(1)(b)(C))

Petitioner challenges the county's findings that the subject property is predominantly composed of Class VI soils and that the property is not capable of producing 85 cf/ac/yr of merchantable timber.

1. Agricultural Capability Class

As noted, according to the SCS soil survey maps, the predominant soils on the subject property are Units 43C and 43E, two variants of the Dixonville/Philomath/Hazelair complex, both of which the soil survey assigns a capability classification of VIe. Petitioner argues, however, that the 1987 soil survey assigns higher capability classifications to the majority of individual soils making up the two complexes. Further, petitioner points out, the 1987 soil survey assigns percentages to each of the individual soils in each complex, so that, for example, Dixonville soils (class IIIe) make up approximately 30 percent of the Unit 43C complex. *See* n 2. If the relative portion of the individual soils and their individual ratings are taken into account, petitioner argues, then it is clear that approximately 53 percent of the subject property consists of Class III soils, while approximately 67 percent consists of Class III or IV soils.

In addition, petitioner argues that while the 1987 soil survey may have assigned a single agricultural capability classification of VIe to Units 43C and 43E, the current NRCS practice is to assign individual ratings to the soils making up those soil complexes, without an overall capability classification. *See* Record 58 (NRCS table listing individual ratings for each soil in the Unit 43C and 43E complexes) and Record 62 (memorandum from staff to the Lane Council of Governments documenting the staff person's understanding of the current NRCS practice, and explaining her decision to assign a capability classification to a complex based on the predominant soil—the soil first listed in the complex). According to petitioner, the former NRCS practice was to assign to the complex as a whole the capability classification of the least productive soil in the complex (in Units 43C and 43E, the

Philomath soils, Class VIe). The current NRCS practice, petitioner argues, is to rate each individual soil separately, and not assign a composite rating based on the least productive soil in the complex.

The county and intervenor respond that the predominant soil test under ORS 197.247(1)(b)(C) must be based on the "Agricultural Capability Classification System in use by the United States Department of Agriculture, Soil Conservation Service on October 15, 1983," not subsequent or modified classification systems. Even assuming that the NRCS has since revised its system of classifying soils within complexes, which respondents do not concede, respondents argue that ORS 197.247(1)(b)(C) requires evaluation under the system in use on October 15, 1983. According to respondents, the 1987 soil survey accurately reflects the classification system in use on that date.

Petitioner responds that the above-described changes is simply a change in how the data generated by the Class I through VIII classification system is reported, not a change in the Class I through VIII *classification system* itself.

The documents cited to us in the record do not establish that the NRCS has in fact changed the way it reports or classifies complex soils. Something more official than an obscure table and a memorandum from a staff person at the Lane Council of Governments is necessary to establish that claim. Accordingly, we need not resolve the parties' contentions regarding whether the purported change is a change in the "classification system" that was in use on October 15, 1983, for purposes of ORS 197.247(1)(b)(C).

Petitioner does not dispute that the 1987 soil survey is a product of, and consistent with, the "Agricultural Capability Classification System in use by the United States Department of Agriculture, Soil Conservation Service on October 15, 1983." The 1987 soil survey provides a single rating for complex soils, such as Units 43C and 43E. Therefore, the county did not err in relying on that composite rating in the 1987 soil survey to conclude that

the predominant soils on the subject property are Class VIe, for purposes of ORS 197.247(1)(b)(C).

2. Wood Fiber Production Capability of 85 cf/ac/yr

The NRCS rates the forest productivity of the Dixonville soils in Units 43C and 43D at 152 cf/ac/yr, but apparently publishes no forest productivity ratings for any of the soil units or soil complexes on the property. Record 66. The county found, based on a report from intervenor's forestry consultant, that the subject property is not capable of producing 85 cf/ac/yr of merchantable timber. The consultant's report relied on several sources to estimate timber productivity, principally (1) a document entitled "Lane County Soil Ratings for Forestry and Agriculture," and (2) a document entitled "Lane County Forest Soil Ratings."[8] Record 347-49. The first document rates the forest productivity of Units 43C and 43E at 54 cf/ac/yr and 64 cf/ac/yr, respectively. Record 347. The second document rates both Units 43C and 43E at 45 cf/ac/yr, Unit 45C (Dupee) at 70 cf/ac/yr and Unit 138E (Witzel) at 70 cf/ac/yr. Record 348-49. The cited source of the pertinent ratings in the second document is a memorandum dated February 8, 1990, from the Office of State Forester. *Id.* That memorandum is not in the record.

Petitioner contends that the county's findings are inadequate, misconstrue the applicable law, and are not supported by substantial evidence. According to petitioner, the county's findings under ORS ORS 197.247(1)(b)(C) are governed by OAR 660-006-0005(2), which defines the term "cubic foot per acre" for purposes of the administrative rules implementing Statewide Planning Goal 4 (Forest Lands).[9] OAR 660-006-0005(2) requires

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[8] The report also cites to "U.S. Dept. of Agriculture SCS Data, as presented in the Soil Survey of Lane County Area (Green Sheet)." Record 342. However, the cited source is not attached to the report and, as far as we can tell, not in the record. As noted above, no party has argued, and it does not appear to be the case, that either the SCS or NRCS has published timber productivity figures for Units 43C, 43E, 45C or 138E.

[9] OAR 660-004-0005 provides, in relevant part:

"For the purpose of this division, the following definitions apply:

that the county use productivity data "as reported by [NRCS]." Where NRCS data are not available or are shown to be inaccurate, OAR 660-006-0005(2) allows for alternative methods of determining productivity, if the alternative method provides "equivalent data" and is approved by the state Department of Forestry (ODF). *See, generally, Carlson v. Benton County*, 37 Or LUBA 897, 909-915 (2000), for an extensive discussion of OAR 660-006-0005(2).

Petitioner argues that the county has not shown that the NRCS rating of 152 cf/ac/yr for the Dixonville component of Units 43C and 43E is "inaccurate." With respect to the soils on the property not rated by NRCS for forest productivity, petitioner contends that the county has not shown that ODF has approved the methodology used by the forestry consultant, or the methodology used to generate the ratings in the two documents relied upon by the forestry consultant. According to petitioner, an ODF publication entitled "Land Use Planning Notes, Number 3X, April 1998," found at Record 452-58, describes the methodology approved by the department under OAR 660-006-0005 in circumstances where NRCS data is unavailable or inaccurate.[10] Petitioner contends that the forestry consultant did not follow the methodology prescribed in that ODF publication.

Intervenor responds that the two documents the forestry consultant relied upon are ultimately based on NRCS data and therefore there is no need under OAR 660-006-0005(2) to use or seek approval for an alternate methodology. Even if the documents are not based on

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"* * * * *

"(2) 'Cubic Foot Per Acre' means the average annual increase in cubic foot volume of wood fiber per acre for fully stocked stands at the culmination of mean annual increment as reported by the USDA Natural Resource Conservation Service (NRCS). Where NRCS data are not available or are shown to be inaccurate, an alternative method for determining productivity may be used. An alternative method must provide equivalent data and be approved by the Department of Forestry."

[10] The methodology described in the April 1998 ODF publication generally requires a field survey of selected trees on the property.

The second document, "Lane County Forest Soil Ratings," provides ratings for Units 43C and 43E (both 45 cf/ac/yr), Dupee soils (70 cf/ac/yr) and Witzel soils (70 cf/ac/yr). Each of these ratings is marked with asterisks ("**"). A footnote states that ratings marked with asterisks are not derived from the SCS "green sheets." A second footnote indicates: "** These estimated soils ratings are taken from an Office of State Forester Memorandum, February 8, 1990, General File 7-1-1." Record 348-49.

Petitioner does not dispute that the documents relied upon provide "equivalent data" to NRCS data, for purposes of OAR 660-006-0005(2). Nor does petitioner dispute that the pertinent cf/ac/yr figures in the "Lane County Forest Soil Ratings" document are based on the February 8, 1990 memorandum from the Office of State Forester. Instead, petitioner complains that the February 8, 1990 memorandum is not in the record and there is no description of the methodology used to generate the data in that memorandum, or any evidence that the methodology used conforms to the methodology set out in the April 1998 ODF publication.

Petitioner is correct that, as a general matter, OAR 660-006-0005(2) requires that the "alternative methodology" be described or set forth in the record, and that there is evidence that ODF has approved the methodology. Presumably, use of the methodology set out in the April 1998 ODF publication would suffice to satisfy the rule. It also seems consistent with the rule to obtain explicit ODF approval of a different methodology, on a case-by-case basis. However, we believe that it is also consistent with the rule to use ODF-generated cf/ac/yr figures, if available, even if the methodology that generated those figures is not described in the record. Here, petitioner does not dispute that the cf/ac/yr figures in the "Lane County Forest Soil Ratings" accurately reflect the ODF-generated figures for the pertinent soils. A decision maker could reasonably presume that whatever methodology generated the ODF cf/ac/yr figures is one that ODF approves of. Even if the ODF figures were generated under a different methodology than that set out in the April 1998 ODF publication, as petitioner

NRCS data, intervenor argues, the documents provide "equivalent data" that was generated by an ODF-approved methodology. Intervenor points out that the pertinent data in the "Lane County Forest Soil Ratings" document are based on data from a February 8, 1990 memorandum from the Office of the State Forester. Using data generated by the State Forester should be sufficient, intervenor argues, to satisfy the requirements of OAR 660-006-0005(2).

We assume, without deciding, that OAR 660-006-0005(2) governs the forest productivity element of ORS 197.247(1)(b)(C) (1991).[11] The only NRCS data cited to us indicates that the NRCS does not rate the forest productivity of any soil on the property, with the exception of the Dixonville soils. Intervenor has not established that the ratings in the "Lane County Soil Ratings for Forestry and Agriculture," or "Lane County Forest Soil Ratings" are based on NRCS or SCS data. Because NRCS data are not available, intervenor can proceed under OAR 660-006-0005(2) only by providing "equivalent data" pursuant to an "alternative method" that is approved by ODF.

As noted, the first document, "Lane County Soil Ratings for Forestry and Agriculture," rates Units 43C and 43E as 54 cf/ac/yr and 63 cf/ac/yr, respectively. Record 347. The source of that rating and the methodology by which it was derived is not described. There is no indication in the record that it is based on SCS, NRCS or ODF data.

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[11] We note that the statute, adopted in 1983 and repealed in 1991, does not require reliance on NRCS data in determining whether the property is capable of producing 85 cf/ac/yr of merchantable timber. The statute explicitly imposes such a requirement with respect to agricultural capability, but not forest productivity. OAR 660-006-0005(2), in turn, was adopted after the statute's repeal and simply defines a term, "Cubic Foot Per Acre" for purposes of OAR chapter 660, Division 006. As far as we can tell, nothing in Division 006 governs designation of marginal lands under ORS 197.247. Instead, it appears that the term "Cubic Foot Per Acre" is used in Division 006 only with respect to forest template dwellings, under OAR 660-006-0027. It is possible that the Land Conservation and Development Commission did not intend the definition of "Cubic Foot Per Acre" to apply to designation of marginal land under the ORS 197.247(1)(b)(C) forest productivity test. One could also argue the converse. We need not resolve this question, as the county and the parties proceeded under the assumption that the rule definition is applicable to a marginal lands designation, and no party raises any arguments to us questioning that assumption.

contends, the ODF is presumably free to follow or approve a different methodology for calculating timber productivity than the one set out in the April 1998 publication.

The first, second and third assignments of error are denied.

FOURTH ASSIGNMENT OF ERROR

ORS 215.327 provides for different minimum lot sizes for marginal lands, depending on the character of the surrounding land.[12] Ten-acre lots are permissible if the subject property is not adjacent to land zoned for exclusive farm or forest use or, if adjacent to such land, such land must qualify for designation for marginal land. Otherwise the lot or parcel must be 20 acres or more in size.

A 53.6-acre parcel south of the subject property is zoned for forest uses. The county concluded that this parcel qualified for designation for marginal land, and thus that the subject property could be divided into 10-acre lots. Petitioner argues that the county's conclusion that the adjacent property qualifies for designation as marginal land suffers from the same flaws described in the first, second and third assignments of error.

Because petitioner's arguments under the first, second and third assignments of error do not provide a basis for reversal or remand, neither do the incorporated arguments under this assignment of error.

The fourth assignment of error is denied.

The county's decision is affirmed.

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[12] ORS 215.327 provides:

"A county may allow the following divisions of marginal land:

"(1) Divisions of land to create a parcel or lot containing 10 or more acres if the lot or parcel is not adjacent to land zoned for exclusive farm use or forest use or, if it is adjacent to such land, the land qualifies for designation as marginal land under ORS 197.247 (1991 Edition).

"(2) Divisions of land to create a lot or parcel containing 20 or more acres if the lot or parcel is adjacent to land zoned for exclusive farm use and that land does not qualify for designation as marginal land under ORS 197.247 (1991 Edition)."

Certificate of Mailing

I hereby certify that I served the foregoing Final Opinion and Order for LUBA No. 2005-029 on June 8, 2005, by mailing to said parties or their attorney a true copy thereof contained in a sealed envelope with postage prepaid addressed to said parties or their attorney as follows:

James Just
39621 Almen Drive
Lebanon, OR 97355

Steve Cornacchia
Hershner Hunter Andrews Neill & Smith LLP
PO Box # 1475
Eugene, OR 97440

Teresa J. Wilson
Lane County Courthouse
125 E. 8th Avenue
Eugene, OR 97401

Dated this 8th day of June, 2005.

Kelly Burgess
Paralegal

Kristi Seyfried
Administrative Specialist

JUN 9 2005

AFFIDAVIT

STATE OF OREGON)
)
County of LANE)

Before me this day personally appeared Mark Minty, who, first being duly sworn, deposes and says:

1. I was a partner, with my father, of C&M Livestock Company during the period from January 1, 1978 through January 1, 1983.

2. During the subject period C&M Livestock Company grazed a limited number of cattle on property owned by Art Moshofsky in the manner, in the amount and for the purposes as stated by Mr. Moshofsky in his affidavit, dated March 15, 2005. The statements in his affidavit relating to our grazing of cattle on his property are true and accurate.

3. At no time during the applicable period, and at no time thereafter, did C&M Livestock Company own or manage property adjacent to or contiguous with Mr. Moshofsky's property or in the vicinity of that property.

4. It is my opinion, based upon our experience on the subject property, that the property is of marginal value for grazing or other agricultural production and could not be managed as a farm operation capable of producing $20,000 annually.

Mark Minty

Mark Minty

Personally appeared the above-named Mark Minty, being duly sworn, who signed this affidavit in my presence as his voluntary act and deed.

Before me this 18th day of July, 2005.

Genoa J Hansen

Notary Public for Oregon
My commission expires: 7/21/07

OFFICIAL SEAL
GENOA J HANSEN
NOTARY PUBLIC-OREGON
COMMISSION NO. 370752
MY COMMISSION EXPIRES JULY 21, 2007

AFFIDAVIT

AFFIDAVIT

STATE OF OREGON)
)
County of Clackamas)

Before me this day personally appeared Art Moshofsky, who, first being duly sworn, deposes and says:

1. I owned property located in Lane County, Oregon, described as Assessor's Map No. 18-04-24, tax lot 0300 and Map No. 18-03-19, tax lot 1300, during the period from January 1, 1978 through January 1, 1983.

2. On March 15, 2005, I signed an Affidavit that stated: "In 1990 I harvested 900,000 board feet of Douglas Fir on the subject property."

3. This affidavit clarifies that affidavit, a copy of which is attached hereto and by this reference incorporated herein.

4. During the aforementioned time period no merchantable timber was harvested from the subject property. The subject property was not managed as part of a forest operation on other property and I did not own any property contiguous to the subject property or in the vicinity of the subject property during the applicable period of time. The merchantable timber harvested in 1990 was cut by a contract logger and was sold to a third party on the open market.

Art Moshofsky

Art Moshofsky

Personally appeared the above-named Art Moshofsky, being duly sworn, who signed this affidavit in my presence as his voluntary act and deed.

Before me this 21 day of July, 2005.

Notary Public for Oregon
My commission expires: Aug. 10, 2007

OFFICIAL SEAL
BRANDI MC WILLIAMS
NOTARY PUBLIC - OREGON
COMMISSION NO. 371410
MY COMMISSION EXPIRES AUG. 10, 2007

AFFIDAVIT

STATE OF OREGON)
)
County of Clackamas)

Before me this day personally appeared Art Moshofsky, who, first being duly sworn, deposes and says:

1. I owned property located in Lane County, Oregon, described as Assessor's Map No. 18-04-24, tax lot 0300, during the period from January 1, 1978 through January 1, 1983.

2. On December 17, 2003, I signed an Affidavit that stated: "At no time during the period stated in paragraph 1. above was the above described property managed as part of a farming operation. By "farm operation" I mean the employment of the subject property for the primary purpose of obtaining a profit in money. By "farm operation" I also mean all uses and activities defined as "farm use" and "current employment" of land in ORS 215.203(2)."

3. This affidavit clarifies that affidavit, a copy of which is attached hereto and by this reference incorporated herein.

4. During the aforementioned time period I allowed a third party to graze a limited number of cattle on the subject property. The number of cattle was limited and never exceeded 25 head. My purpose in allowing the grazing was to create an activity and human presence on the property in our absence. The consideration received for allowing the grazing was the activity and presence and annual fence repair. In the years that I accepted a nominal payment for the grazing, the payment and the other stated consideration never exceeded $1,000 in annual value. At no time during the aforementioned time period was the subject property managed as part of a farm operation capable of producing $20,000 in annual income.

5. In 1990 I harvested 900,000 board feet of Douglas Fir on the subject property.

Art Moshofsky

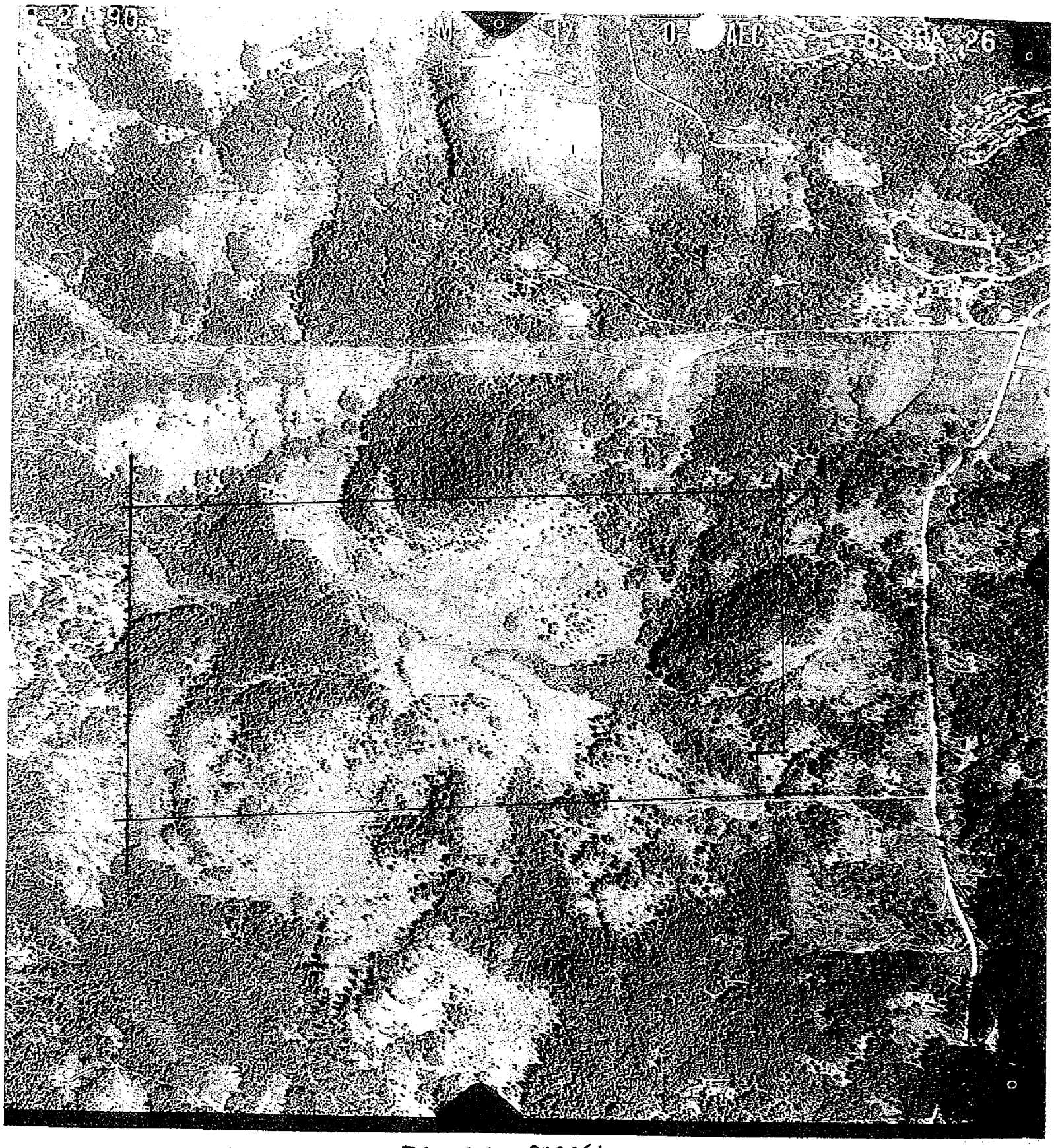
Personally appeared the above-named Art Moshofsky, being duly sworn, who signed this affidavit in my presence as his voluntary act and deed.

Before me this 15th day of March, 2005.

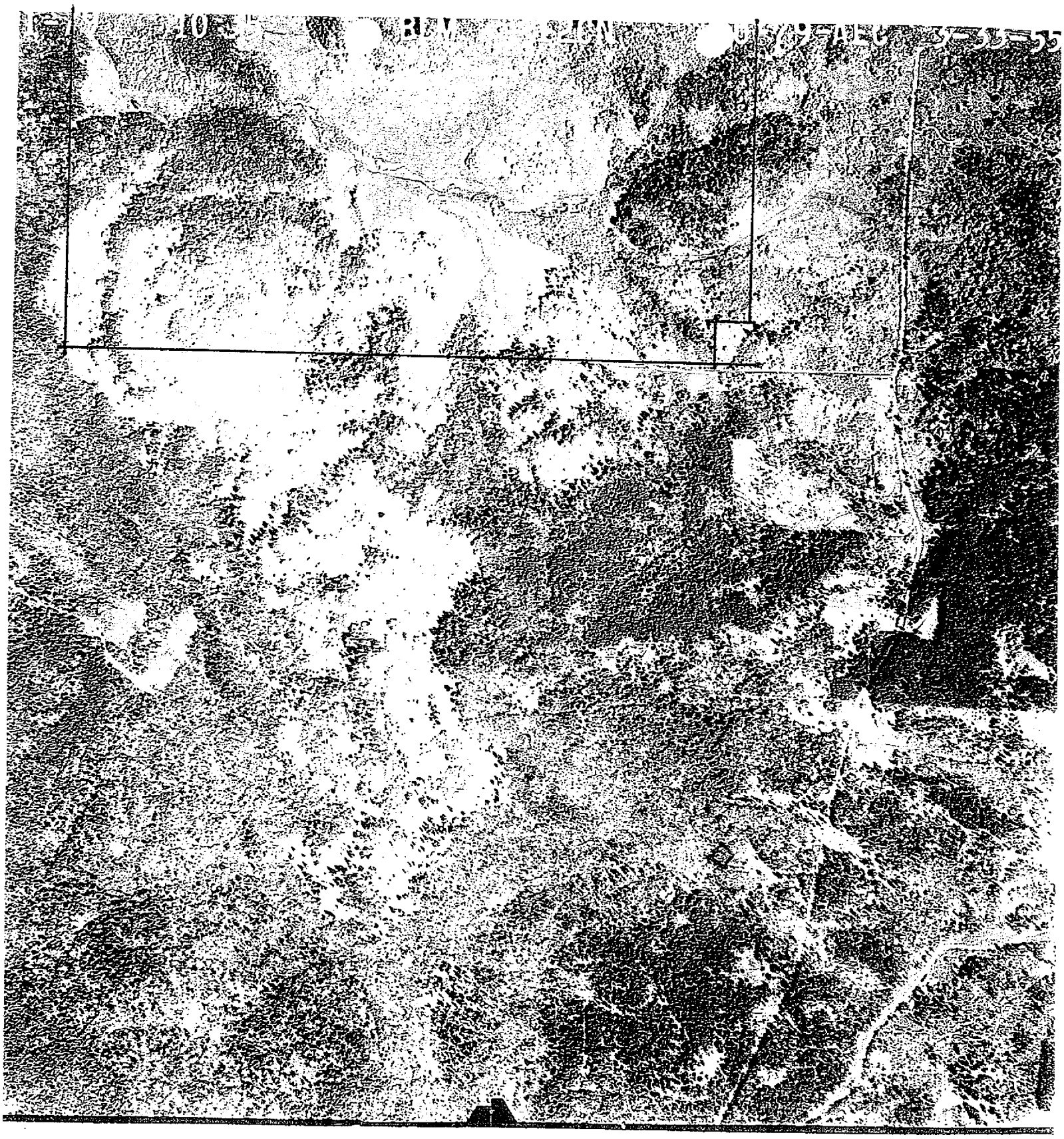
OFFICIAL SEAL
RAAKHI BATRA-SHARMA
NOTARY PUBLIC-OREGON
COMMISSION NO. 386883
MY COMMISSION EXPIRES NOVEMBER 15, 2008

Raakhi Batra
Notary Public for Oregon
My commission expires: Nov 15, 2008


DAHLEN PROPERTY
T18S - R4W - SEC 24
EXHIBIT 4
1996 PHOTO



DAHLEN PARCEL
T18S - R4W - SEC 24
EXHIBIT 3
1990 PHOTO



DAHLEN PARCEL
T18S-R4W-SEC 24

EXHIBIT 2

1979 PHOTO

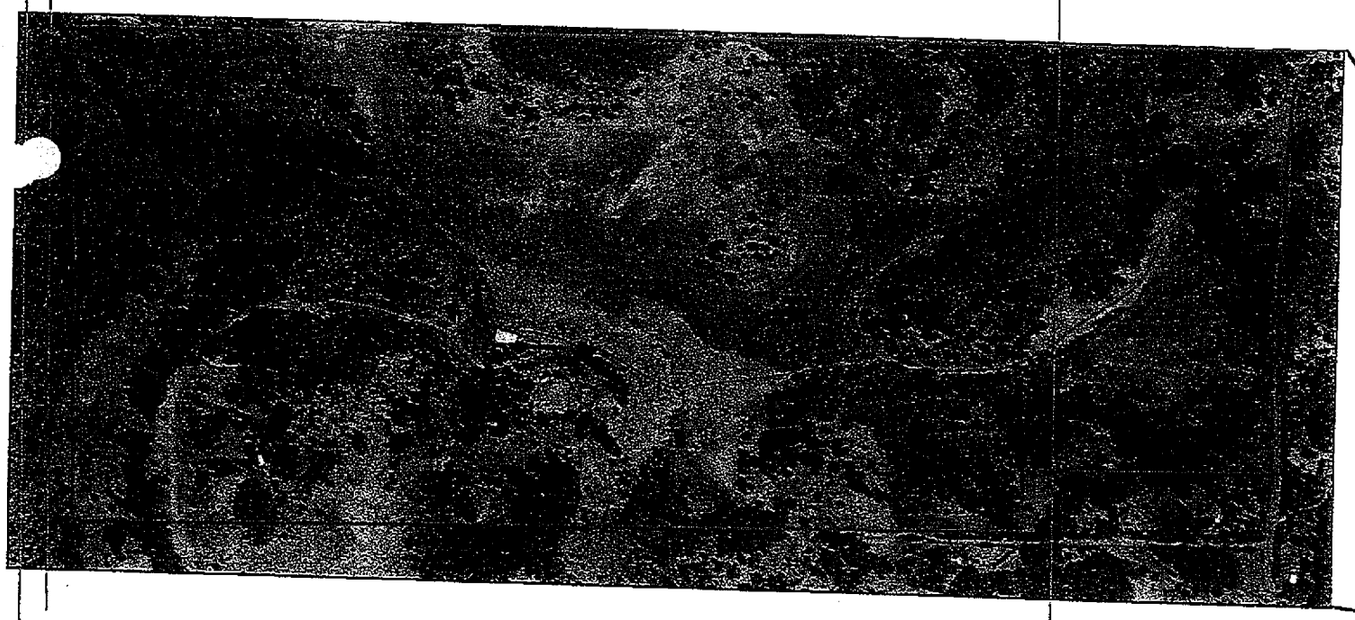


DAHLEN PROPERTY
T18S-R4W SEC 24

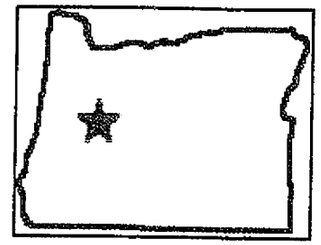
EXHIBIT 1

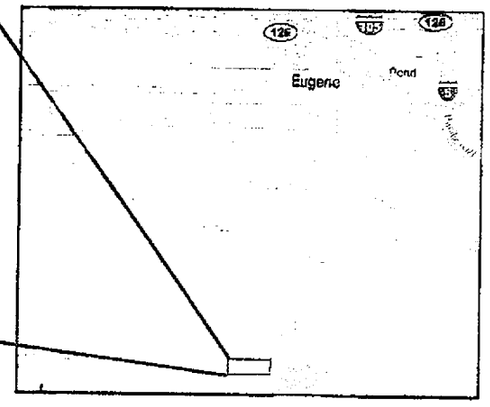
1952 PHOTO

Section 24 Twp. 18S. R. 4W.



Section 19 Twp. 18S. R. 3W.





Location Map

Dahlen Property
Map No. 18–04–24 #300
Map No. 18–03–19 #1300

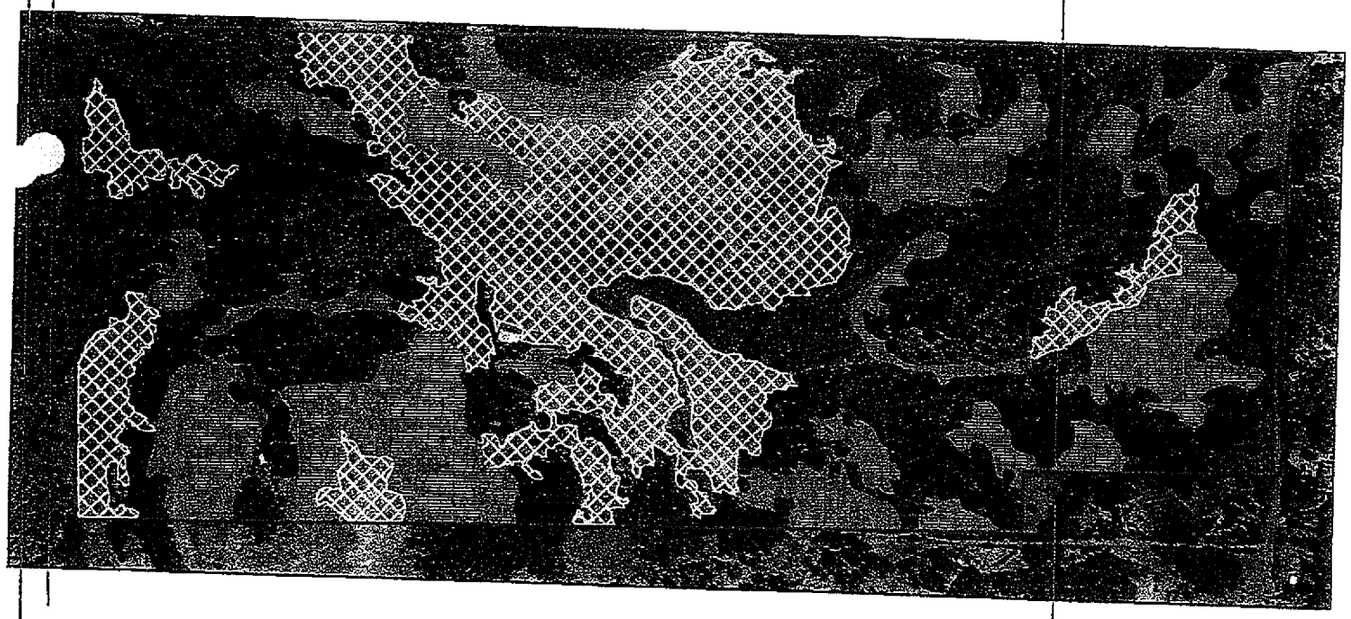
GRAPHIC SCALE

(IN FEET)
1 inch = 500 ft.

Prepared by:
Agronomic Analytics

Section 24 Twp. 18S. R. 4W.

Section 19 Twp. 18S. R. 3W.



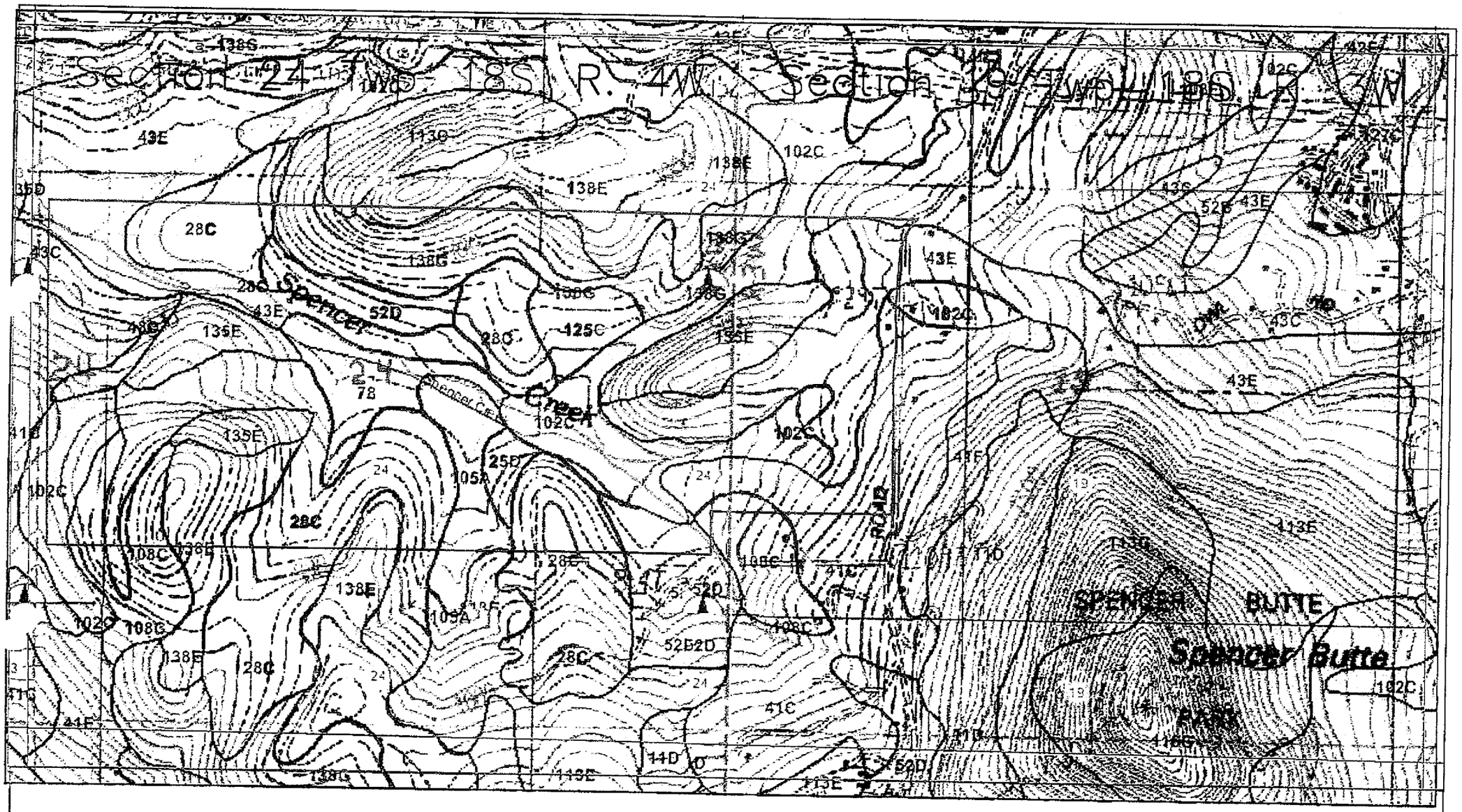
Landuse Map

Dahlen Property
Map No. 18-04-24 #300
Map No. 18-03-19 #1300

Open Areas, Predominantly Grasslands

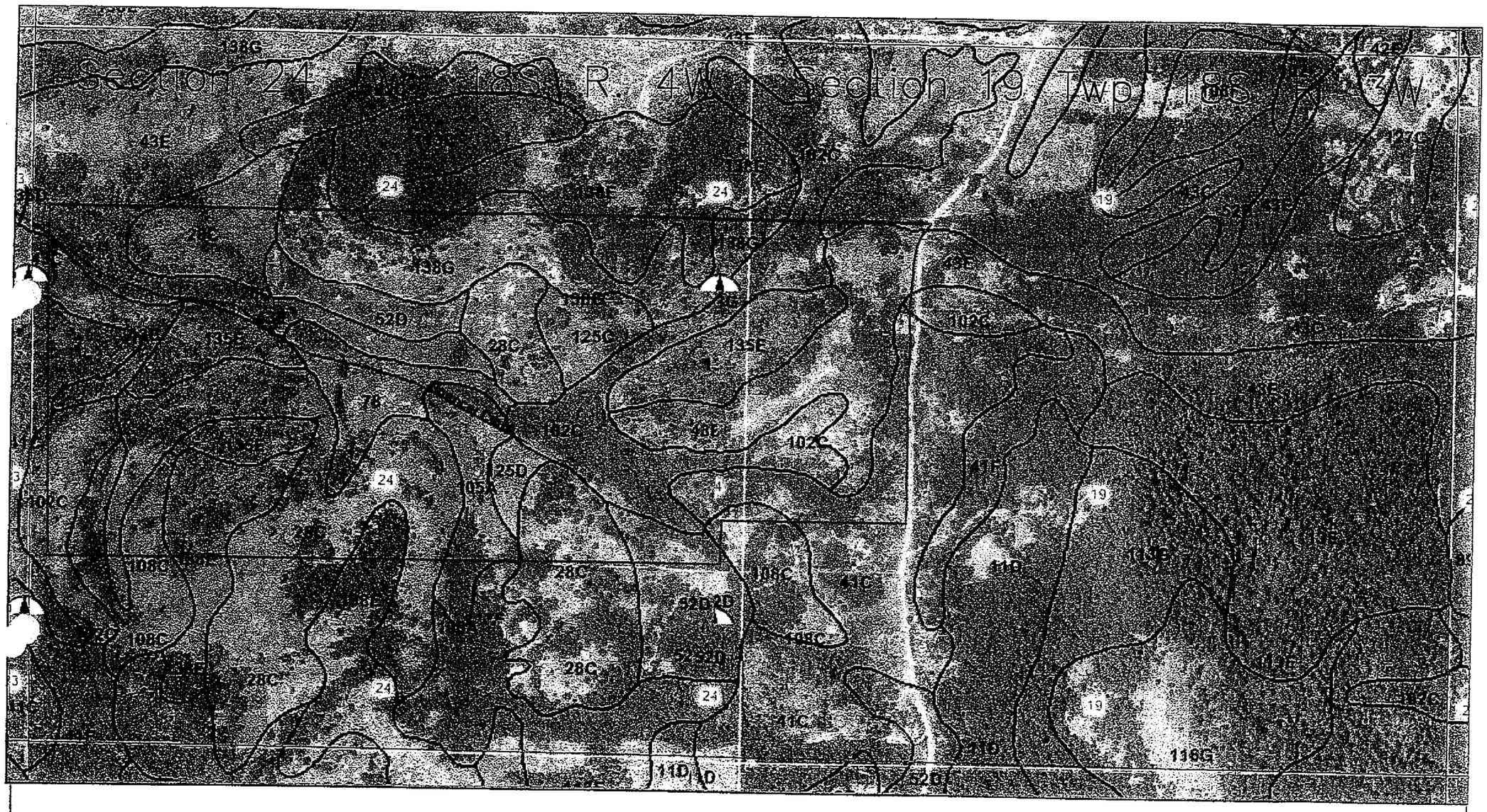
Mixed Open Areas and Trees, Grassland, Brush, Young Trees

Forested Areas, Predominantly Second Growth, Some Older Trees



Dahlen Property
Map No. 18-04-24 #300
Map No. 18-03-19 #1300

7.5 Topo Map
Creswell Quadrangle



Dahlen Property
Map No. 18-04-24 #300
Map No. 18-03-19 #1300

USDA Soil Survey of Lane County Area, Oregon
1987. SCS. Excerpt from Page 103

Section 24 Twp. 18S. R. 4W.



Section 19 Twp. 18S. R. 3W.

Augerhole Soil Depths

No. 1 – 13 inches
No. 2 – 14 inches
No. 3,4 – 18 inches
No. 5 – 5 inches
No. 6 – 13 inches
No, 7 – 20 inches
NO. 8 – 28 inches
No. 9 – 11 inches
No. 10 – > 57 inches
No. 11 – 11 inches
No. 12 – > 57 inches
No. 13 – 12 inches
No. 14 – 27 inches
No. 15 – 24 inches
No. 16 – 7 inches
No. 17 – 21 inches
No. 18 – 23 inches
No. 19 – 10 inches

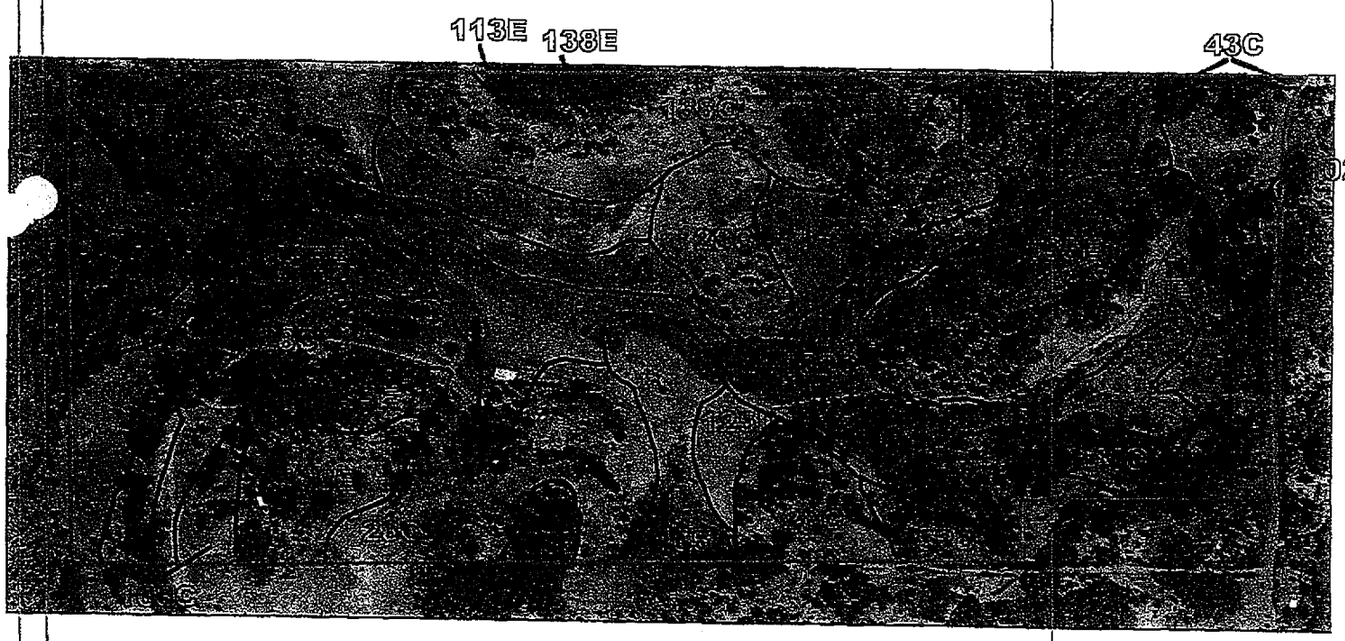
Augerholes

Dahlen Property
Map No. 18–04–24 #300
Map No. 18–03–19 #1300

© Augerholes

Section 24 Twp. 18S. R. 4W.

Section 19 Twp. 18S. R. 3W.



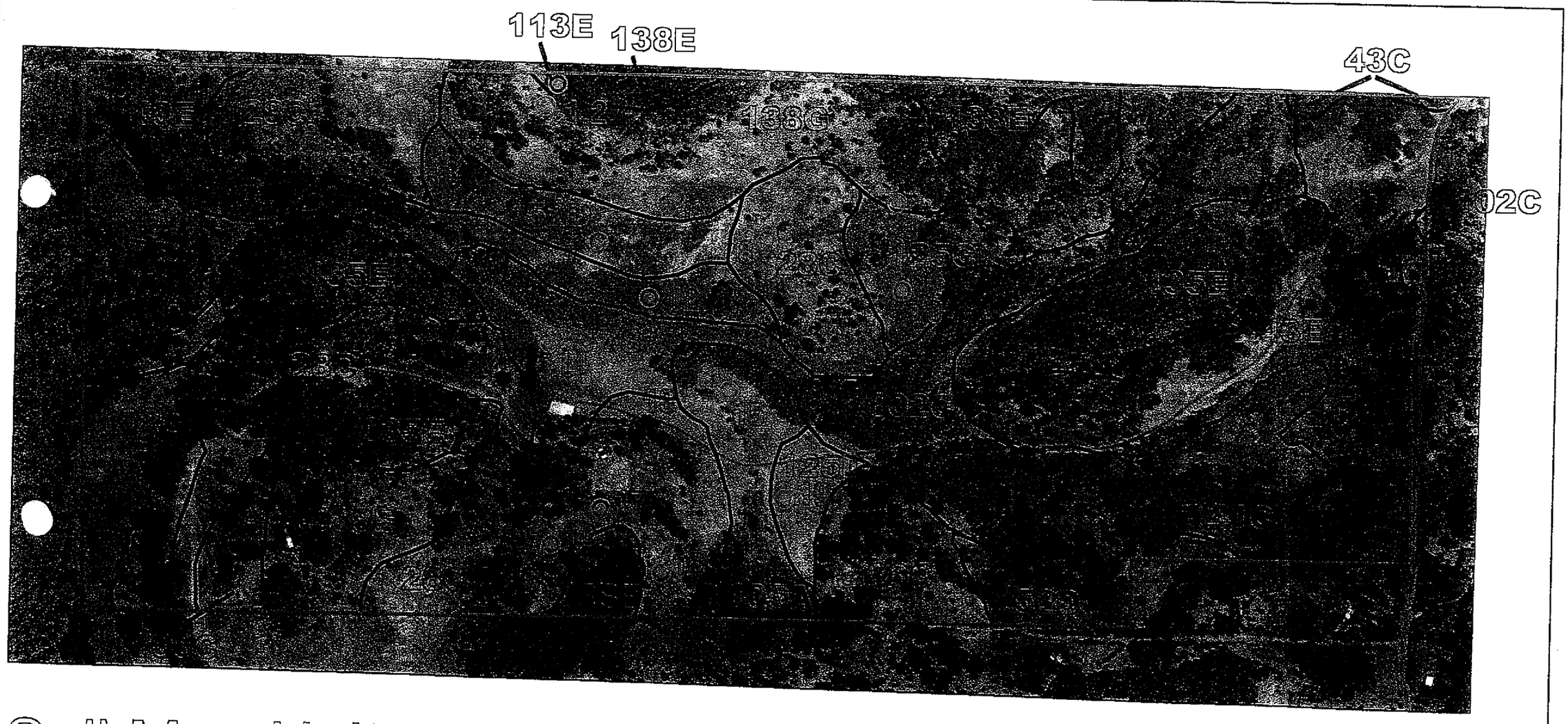
Soils Occuring Under Open Grasslands

28C - Chehulpum silt loam
43C,E - Dixonville-Philomath-Hazelair Complex
52D - Hazelair silty clay loam
78 - McAlpin silty clay loam
102C - Panther silty clay loam
105A - Pengra silt loam
125C,D - Steiwer loam
138E,G - Witzel very cobbly loam

Soil Map Units

Dahlen Property
Map No. 18-04-24 #300
Map No. 18-03-19 #1300

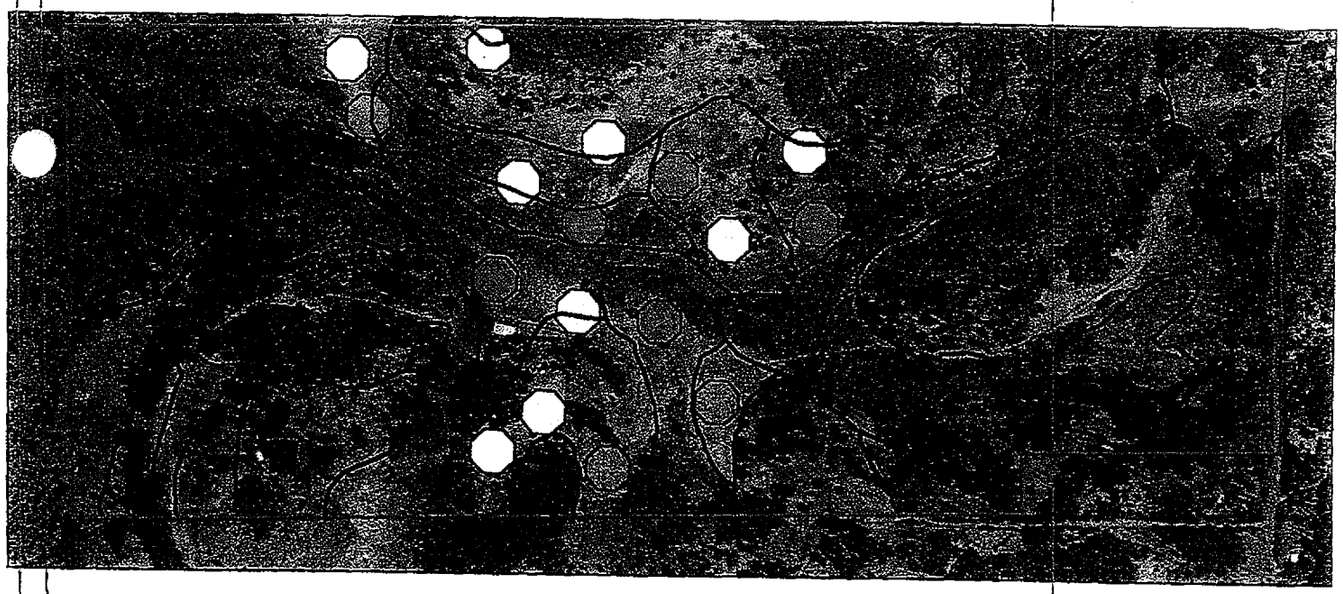
28C - Chehulpum silt loam
41C - Dixonville silty clay loam
43C,E - Dixonville-Philomath-Hazelair Complex
52D - Hazelair silty clay loam
78 - McAlpin silty clay loam
102C - Panther silty clay loam
105A - Pengra silt loam
108C - Philomath cobbly silty clay loam
113C,E - Ritner cobbly silty clay loam
125C,D - Steiwer loam
135E - Willakenzie clay loam
138E,G - Witzel very cobbly loam



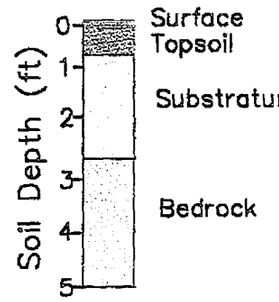
Soil Map Units w/ Augerhole Locations

Section 24 Twp. 18S. R. 4W.

Section 19 Twp. 18S. R. 3W.



Typical Soil Profile



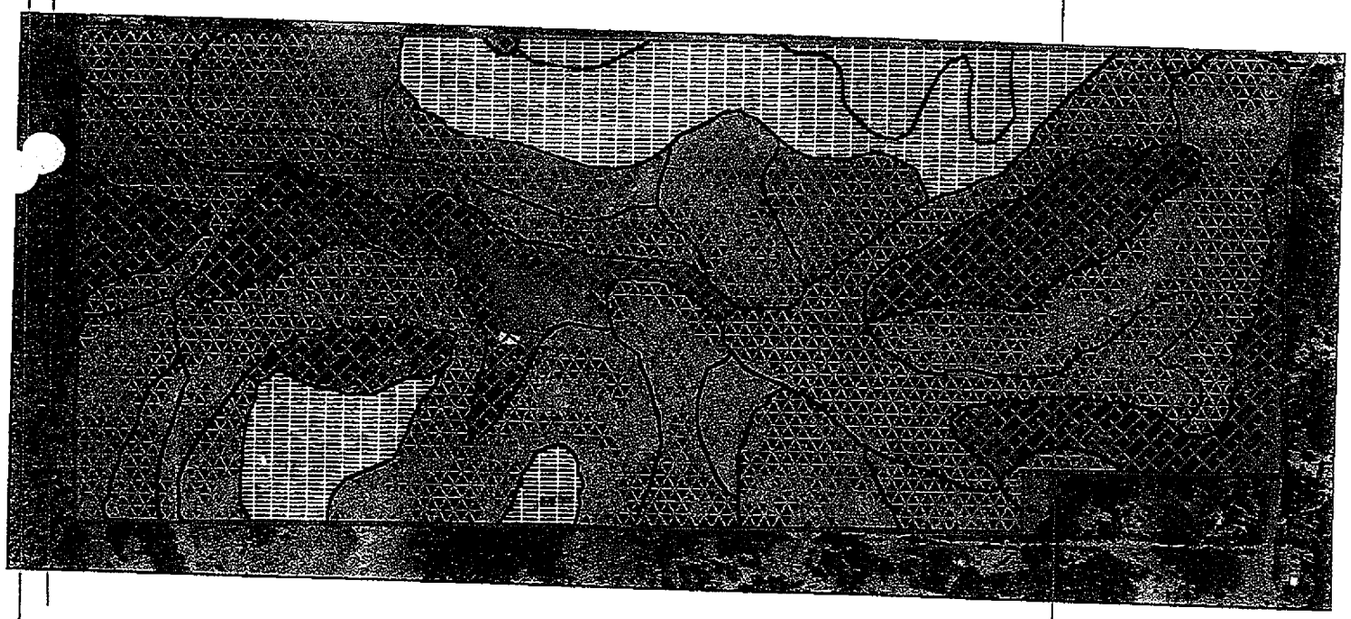
Observed Soil Depths

Dahlen Property
Map No. 18-04-24 #300
Map No. 18-03-19 #1300

- Observed Soil Depths Greater Than 20 inches
- Observed Soil Depths Greater Than 10 inches but Less Than 20 inches
- Observed Soil Depths Less Than 10 inches

Section 24 Twp. 18S. R. 4W.

Section 19 Twp. 18S. R. 3W.



Woodland Site Index Ratings (USDA, 1987)

Dahlen Property
Map No. 18-04-24 #300
Map No. 18-03-19 #1300

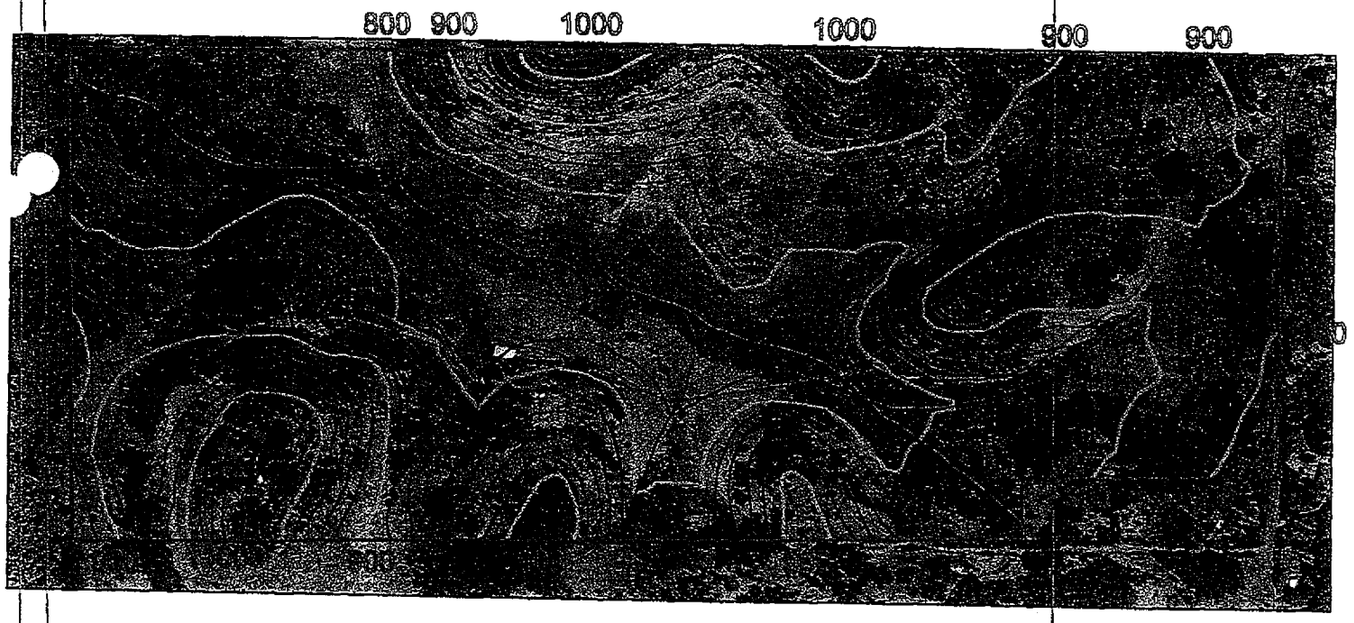
Soils with Woodland Site Index Ratings Greater Than 100

Soils with Woodland Site Index Ratings Less Than 100

Soils Without Woodland Site Indexs

Section 24 Twp. 18S. R. 4W.

Section 19 Twp. 18S. R. 3W.



Elevation and Aspect Description

Elevations on the Dahlen Property range from a low of 730 feet above sea level in the NW corner to a high of 1080 feet in the SE corner and at the main house. Open grasslands exhibit primarily a south and southwest aspect.

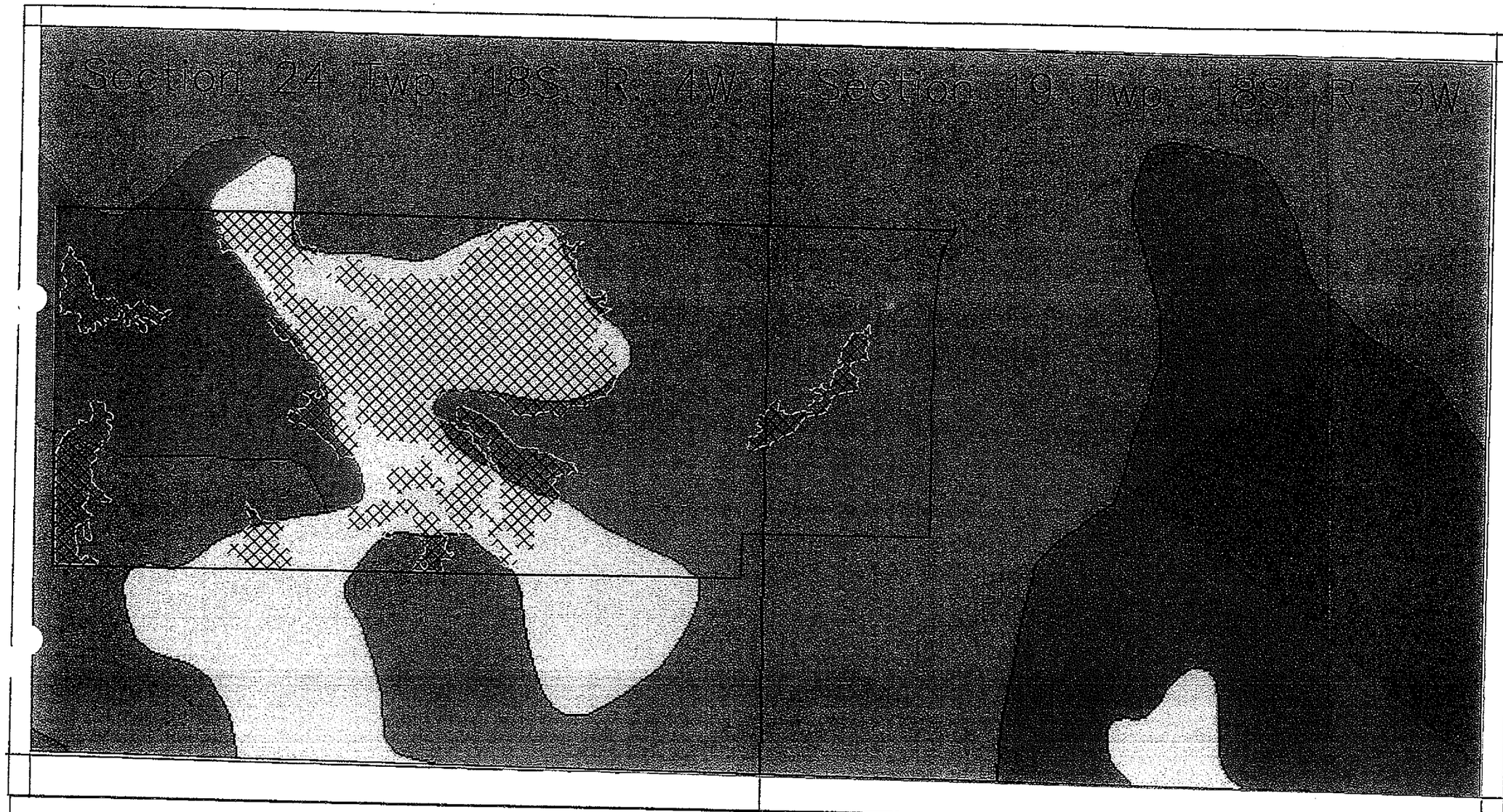
Elevation Map

Dahlen Property
Map No. 18-04-24 #300
Map No. 18-03-19 #1300

100 foot contours

20 foot contours

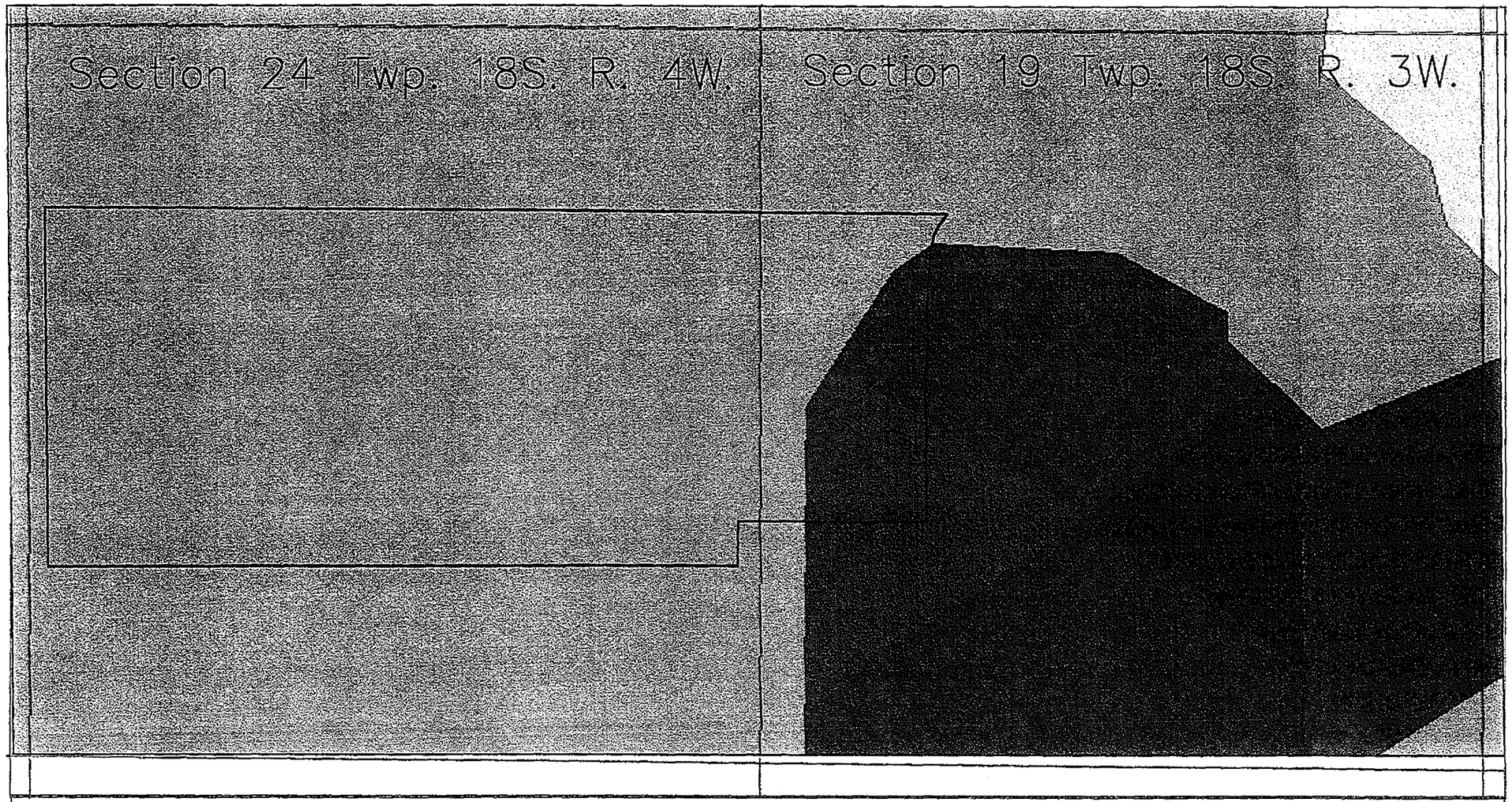
Spencer Creek



Historic Vegetation - 1909

Dahlen Property
Map No. 18-04-24 #300
Map No. 18-03-19 #1300

- Oak – Douglas Fir
- Oak Savanna
- Douglas Fir
- Grasslands – Roemer Fescue
- Current Open Grasslands



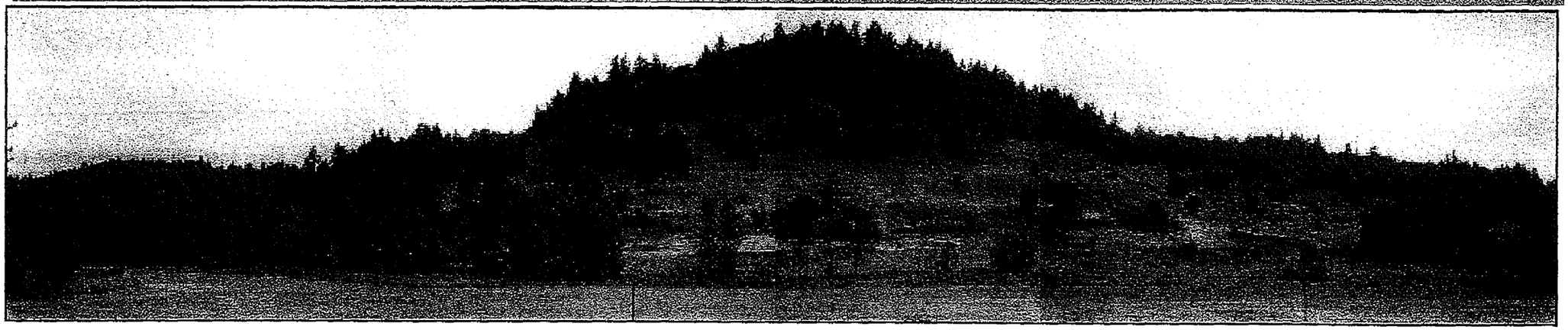
Local Geology

Dahlen Property
Map No. 18-04-24 #300
Map No. 18-03-19 #1300

Tfeb – Fisher and Eugene formations basaltic rocks Oligocene and upper Eocene basaltic rocks

Tib – Basalt and andesite intrusions Pliocene, Miocene, and Oligocene? Sills, plugs and dikes of basaltic andesite, basalt, and andesite; mostly represents feeders, exposed by erosion, for flows and flow breccias of units Tba and Trb

Tfee – Marine Eugene Formation, where mapped separately Oligocene and upper Eocene thin to moderately thick bedded, coarse- to fine-grained arkosic and micaceous sandstone and siltstone, locally highly pumiceous



Panorama No. 1 Looking North from the location of the shop across the Spencer Creek floodplain composed of deep to moderately alluvial silty clay soils (McAlpin, Pengra, and Hazelair). Lower toe of the hilside composed of gradually shallower soils (Hazelair, Dixsonville, and Philomath) formed over colluvium. Steep upper slopes consist of shallow soils (Witzel) formed in weathered basaltic bedrock.



Panorama No. 2 Looking Northeast across the midslope composed of shallow, well drained Chehulpum silt loam grading towards moderately deep Steiwer loam.



Figure No. 6 Landscape at Auger Hole # 19 looking Northwest towards Auger Hole # 15

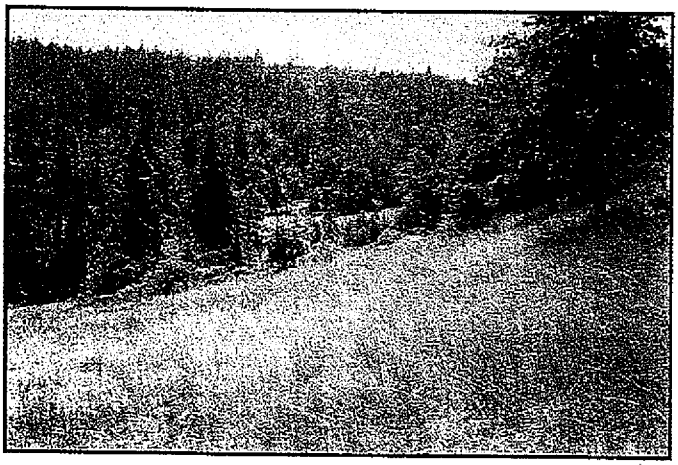


Figure No. 8 Landscape at Auger Hole # 16

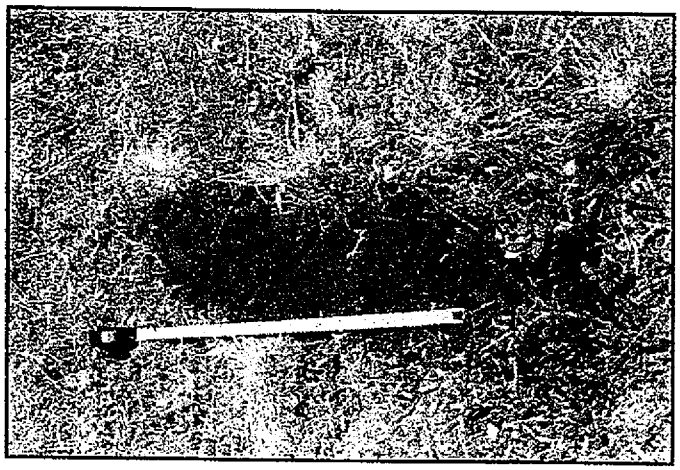


Figure No. 9 Auger Hole # 17

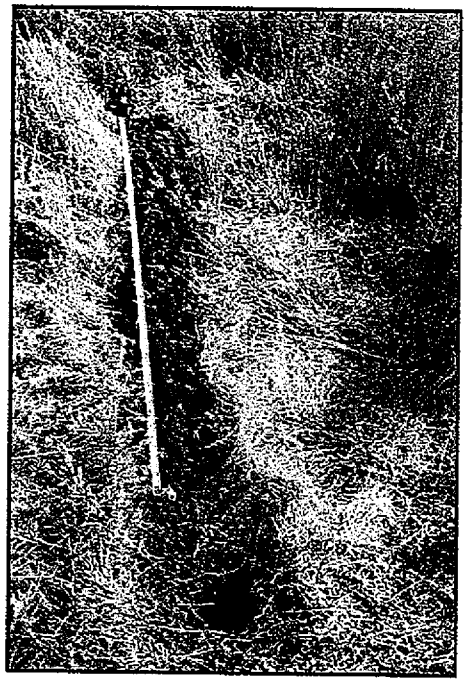


Figure No. 7 Auger Hole # 12

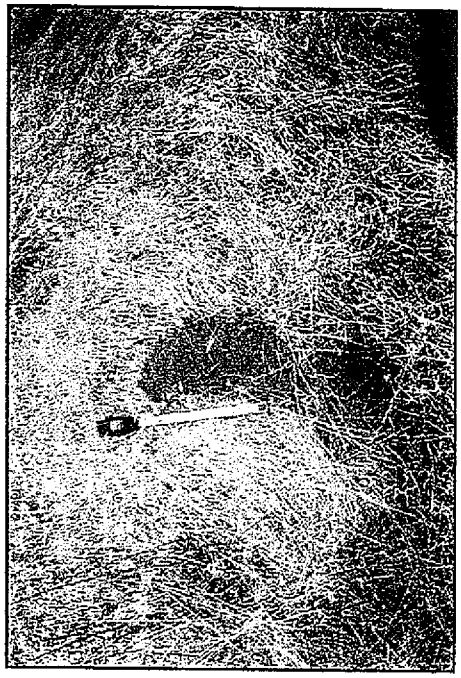
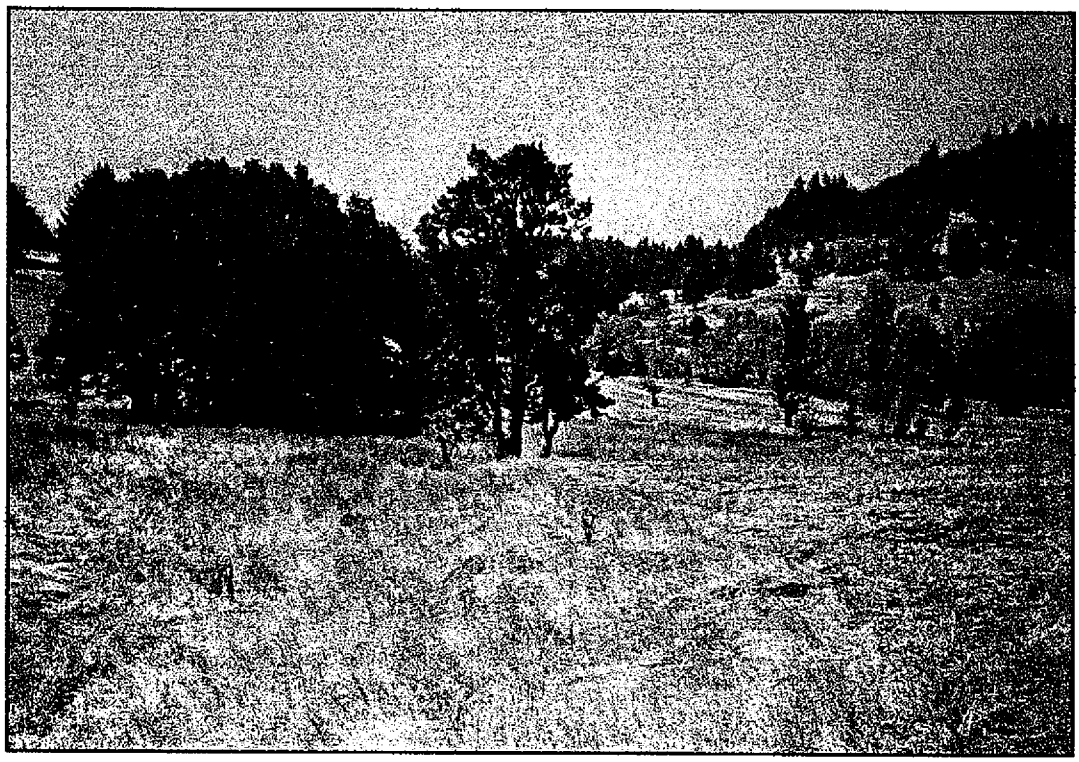


Figure No. 10 Auger Hole # 11

Soil Investigation Report
For
Karen Dahlen
Eugene, Oregon



Prepared by:
Stephen Caruana

Agronomic Analytics

3419 Chaucer Way • Eugene, OR 97405 • Phone (541) 684-8000 • caruana@integraonline.com

Dahlen Soil Report Contents

(1) General Information

(a) Report Title

(b) Land Owner

(c) Preparer

(d) Land Use Case File Number

(e) County of Survey

(f) Location

(g) Present Zoning Designation

(h) Current Land Use

(i) Purpose of the Investigation.

(2) Previous Mapping and Supporting Documentation

(3) Report Methodology

(a) Order of Survey

(b) Field Investigation Dates

(c) Observation Methodology

(d) Observed Limitations

(4) Results, Findings, and Decisions

(a) Geologic Setting and Overview

(b) Landforms and Topographical Relationships

(c) Local Hydrological Conditions

(d) Revised Soil Mapping Units Characterization

(e) Soil Mapping Unit Tabulation

(5) Summary and Conclusions

(6) References of Preparer and Literature Citations

(7) Attachments

(a) Location Map (1:85,000)

(b) Landuse Map (1:13,000)

(b) 7.5 Topographic Quadrangle (Creswell) w/ NRCS Soils Map (1:13,000)

(c) Soil Map Units Map (1:13,000)

(c) Site Investigations Augerhole Locations (1:13,000)

(d) Soil Map Units w/ Augerhole Locations (1:4,600)

(e) Observed Soil Depths (1:13,000)

(f) Woodland Site Index Ratings (1:13,000)

(g) Elevation and Aspect Description Map (1:13,000)

(h) Historic Vegetation 1909 Map (1:13,000)

(i) Local Geology (1:13,000)

(e) Assessor's Map (1:5,000) (Not Included)

Dahlen Property Soil Report

(1) General Information

(a) Report Title:

Dahlen Property Soil Investigation Report

(b) Land Owner:

Karen Dahlen
85800 S. Willamette St.
Eugene, OR 97401

(c) Preparer:

Stephen Caruana
Principal Agronomist
Agronomic Analytics
3419 Chaucer Way
Eugene, OR 97405
(see Statement of Qualifications in Attachments)

(d) Land Use Case File Number:

(e) County of Survey:

Lane County, OR

(f) Location:

The subject property consists of 387.7 acres in two parcels approximately 1/2 mile from the southern edge of the city limits of Eugene, OR on South Willamette Street. The Map & Tax Lot Numbers are: 18-04-24, TL #300 (320.5ac.) and 18-03-19, TL 1300 (67.2ac.) The property is located approximately 1/2 mile south of the current Urban Growth Boundary of Eugene. The property is centered on 43.988 North Latitude and 123.108 West Longitude. The property is located in the Cascade Range foothills that demarcate the south boundary of the City of Eugene. The soils of the foothills are generally not suitable for cultivation of any commercially viable agricultural crops. They have traditionally been used for sheep, cattle, and timber production on the slightly more suitable soils. Tax Lot # 300 is designated as **Exclusive Farm Use** and Tax Lot # 1300 is designated as **Marginal Lands**. Power lines to the north border the property. The property is entirely fenced along the perimeter and access is limited.

(g) Current Land Use:

Rural residential, small and medium sized woodlots and open lands, adjoining parcels support small-scale farming and woodlot production. Urban development exists directly to the north of the Dahlen Property.

(h) Purpose of the Investigation:

The attorney for the landowner contacted *Agronomic Analytics* to conduct a site investigation to determine if the soils mapped on this property showed any variation from the published soil survey. A further consideration was a desire on the part of the landowner and the consulting forester to sufficiently characterize the soils present in order to explain the presence or absence of commercially viable tree species on certain mapped soils. *Agronomic Analytics* was also engaged to interpret soils information and provide estimates of the productive capacity of the tract. *Agronomic Analytics* conducted field visits on August 11, 19, 22, 24, 2005.

Agronomic Analytics examined the property for the following factors:

- Soil depth (actual and variation from published values)
- Extent and areal coverage of soil inclusions and rock outcrops
- Soil pH
- Soil moisture holding capacity (as influenced by soil texture)
- Present land use (absence or presence of specific vegetation to be noted)
- Environmental factors (aspect, slope, hydrology, other conditions)

This report contains a summary of the observations made during the site investigation, an interpretation of the results, and supporting published technical material. Data are summarized in the accompanying report and graphically displayed as reference maps. As there is no indication that any agricultural use is contemplated by the landowner, no estimates are made regarding agricultural productivity.

The object of the field investigations was to characterize the soil variation encountered if any, note any natural or manmade deviation from published soil series data, and identify apparent or potential vegetative trends. The open grasslands were examined in detail in order to identify if possible the factors influencing the potential for tree growth or the lack thereof.

This report and its findings are based upon my interpretation of the Soil Survey of Lane County Area, Oregon, 1987, SCS. It includes the examination and measurement of soil maps, field visits and soil sampling, soil tests conducted by *Agronomic Analytics*, and interpretation of current and historic aerial photography and earlier forest and vegetation inventories.

Detailed, site-specific analysis is always likely to find field variability that may differ slightly from published values. Intensive laboratory analysis beyond the scope of this survey may be necessary to further define phases of published soil series. The summaries below were made based upon the best professional judgment and conclusions of the investigator.

(2) Previous Mapping and Supporting Documentation

The earliest records of this area are the General Land Office Survey Notes of 1853 and 1859. At that time the land surveyors noted the presence of streams (perrenial or intermittant), types of vegetation present, and general site conditions or limitations. The surveyors were particularly interested in the usefulness of the land for agricultural purposes. Although some Euro-American settlement had occurred prior to the 1853 survey, pricipally on the choicest agricultural lands of the Willamette Valley proper, the surveys record the native vegetation present at the time of the surveys. It would be a mistake though to assume that the native vegetation recorded in the General Land Office Surveys represent the potential native climax vegetation possible for a particular site. This is especially true in the lowland and lower foothill regions of the Willamette Valley due to the anthropogenic activities of the Native Americans.

It is well documented that the Native American Indians of the Willamette Valley were engaged in routine burning of lands throughout their region. The principal reasons for the burning were to simplify their hunting of deer and concurrently to promote the growth of desirable native plants. The 1853 Survey notes only in the vacinity of the future location of the Dahlen Property along its eastern edge in Section 19 as being "2nd rate predominantly oak and fir timber" on "Rolling and Hilly Soils."

The soils of the subject property was mapped by the Natural Resource Conservation Service (formerly Soil Conservation Service) and published as the Soil Survey of Lane County Area, Oregon in 1987. An excerpt of the Soil Survey (Map No. 103) showing the subject property is provided in the attachments. Also consulted was an earlier soil survey published in 1925 by the USDA – Bureau of Chemistry and Soils.

The following maps are provided for historical reference:

- 1909 Historic Vegetation Survey
- 1936 Army Corps of Engineer Aerial Photography
- Oregon Geology
- USGS 7.5 Quadrangle Creswell (excerpt)
- USDA Soil Survey of Lane County Area, Map 103 (excerpt)

The following tables summarize the published values for the soils observed on the property. Explanations of technical terms are provided where necessary.

Table 1. Soil Properties - Capability Class & Slope Range (USDA, 1987)			
Map Unit	**Soil Name**	**Capability Class**	**Slope Range**
28C	Chehulpum silt loam	VIe	3 - 12%
41C	Dixonville silty clay loam	IIIe	3 - 12%
43C	Dixonville-Philomath-Hazelair Complex	VIe	3 - 12%
43E	Dixonville-Philomath-Hazelair Complex	VIe	12 - 35%
52D	Hazelair silty clay loam	IVe	7 - 20%
78	McAlpin silty clay loam	IIw	0%
102C	Panther silty clay loam	VIw	2 - 12%
105A	Pengra silt loam	IIIw	1 - 4%
108C	Philomath cobbly silty clay	VIe	3 - 12%
113C	Ritner cobbly silty clay loam	IVs	2 - 12%
113E	Ritner cobbly silty clay loam	VIs	12 - 30%
125C	Steiwer loam	IIIe	3 - 12%
125D	Steiwer loam	IVe	12 - 20%
135E	Willakenzie clay loam	IVe	20 - 30%
138E	Witzel very cobbly loam	VIs	3 - 30%
138G	Witzel very cobbly loam	VIs	30 - 75%

Capability class - A classification of a soil's limitations and potential. Ranges from I to VIII, with I the best and VIII the worst. The soils on this property are ranked:

- IIw – Soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices. The 'w' indicates that the soil is mainly limited due to water in or on the soil interferes with plant growth or cultivation.
- IIIe – Soils have severe limitations that reduce the choice of plants or that require special conservation practices, or both. The 'e' indicates that the soil is mainly limited due to a risk of erosion unless a close-growing plant cover is maintained.
- IIIw – Soils have severe limitations that reduce the choice of plants or that require special conservation practices, or both. The 'w' indicates that the soil is mainly limited due to water in or on the soil interferes with plant growth or cultivation.
- IVe – Soils that have very severe limitations that reduce the choice of plants or that require very careful management, or both. The 'e' indicates that the soil is mainly limited due to a risk of erosion unless a close-growing plant cover is maintained.
- IVs - – Soils that have very severe limitations that reduce the choice of plants or that require very careful management, or both. The 's' indicates that the soil is mainly limited due to shallowness, doughtiness, and/or stoniness.
- VIe – Soils that have severe limitations that make them generally unsuitable for cultivation. The 'e' indicates that the soil is mainly limited due to a risk of erosion unless a close-growing plant cover is maintained.
- VIs - Soils that have severe limitations that make them generally unsuitable for cultivation. The 's' indicates that the soil is mainly limited due to shallowness, doughtiness, and/or stoniness.

- VIw - Soils that have severe limitations that make them generally unsuitable for cultivation. The 'w' indicates that the soil is mainly limited due to water in or on the soil interferes with plant growth or cultivation.

Table 2. Soil Properties - Woodland Ratings (USDA, 1987)			
Map Unit	Soil Name	Woodland Site Indices	
		Predominant Tree	Site Index
28C	Chehulpum silt loam		
41C	Dixonville silty clay loam	Douglas fir	120
43C	Dixonville-Philomath-Hazelair Complex		
43E	Dixonville-Philomath-Hazelair Complex		
52D	Hazelair silty clay loam		
78	McAlpin silty clay loam	Douglas fir	159
102C	Panther silty clay loam		
105A	Pengra silt loam		
108C	Philomath cobbly silty clay		
113C	Ritner cobbly silty clay loam	Douglas fir	131
113E	Ritner cobbly silty clay loam	Douglas fir	131
125C	Steiwer loam		
125D	Steiwer loam		
135E	Willakenzie clay loam	Douglas fir	160
138E	Witzel very cobbly loam	Douglas fir	90
138G	Witzel very cobbly loam	Douglas fir	90

Woodland Productivity - This table shows the potential productivity of the soils for wood crops. Potential productivity of merchantable or common trees on a soil is expressed as a site index and as a volume number. The site index is the average height, in feet, that dominant and co-dominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that forest managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability. The volume of wood fiber, a number, is the yield likely to be produced by the most important tree species. This number, expressed as cubic feet per acre per year and calculated at the age of culmination of the mean annual increment (CMAI), indicates the amount of fiber produced in a fully stocked, even-aged, unmanaged stand. (see Woodland Site Index map in attachments)

The ability of soils to produce trees varies greatly. Tree growth is influenced by soil depth, texture, fertility, and the available water capacity. The kinds of trees that can be grown on a particular site is governed by elevation, aspect, soils, and climate. The of the root zone and the available water holding capacity of the soil are of major and critical importance in the growth of trees. Most forestland within the survey area does not provide suitable forage for livestock species.

Table 3. Soil Properties - Horizon Depth and Texture (USDA, 1987)				
Map Unit	**Soil Name**	**Depth (in)**	**Texture**	**Fragments (>3in)**
28C	Chehulpum silt loam	0 - 7	Silt loam	0
		7 - 13	Silt loam, clay loam	0 - 10
		13	Weathered bedrock	
41C	Dixonville silty clay loam	0 - 14	Silty clay loam	0 - 10
		14 - 26	Clay, cobbly clay	0 - 30
		26	Weathered bedrock	
43C, 43E	Dixonville-Philomath-Hazelair Complex			
	Dixonville silty clay loam	0 - 14	Silty clay loam	0 - 10
		14 - 26	Clay, cobbly clay	0 - 30
		26	Weathered bedrock	
	Philomath	0 - 6	Cobbly silty clay	15 - 30
		6 - 14	Clay, cobbly silty clay	0 - 30
		14	Weathered bedrock	
	Hazelair silty clay loam	0 - 11	Silty clay loam	0
		11 - 15	Silty clay, silty clay loam	0
		15 - 36	Clay	0
		36	Weathered bedrock	
52D	Hazelair silty clay loam	0 - 11	Silty clay loam	0
		11 - 15	Silty clay, silty clay loam	0
		15 - 36	Clay	0
		36	Weathered bedrock	
78	McAlpin silty clay loam	0 - 14	Silty clay loam	0
		14 - 60	Silty clay, clay	0
102C	Panther silty clay loam	0 - 10	Silty clay loam	0
		10 - 42	Clay	0
		42	Weathered bedrock	
105A	Pengra silt loam	0 - 6	Silt loam	0
		6 - 21	Silty clay loam	0
		21 - 60	Clay	0
108C	Philomath cobbly silty clay	0 - 6	Cobbly silty clay	15 - 30
		6 - 14	Clay, cobbly silty clay	0 - 30
		14	Weathered bedrock	
113C,E	Ritner cobbly silty clay loam	0 - 7	Cobbly silty clay loam	0 - 35
		7 - 32	Very gravelly silty clay	20 - 45
		32	Unweathered bedrock	
125C,D	Steiwer loam	0 - 16	Loam	0
		16 - 29	Clay loam	0 - 5
		29	Weathered bedrock	
135E	Willakenzie clay loam	0 - 11	Clay loam	0
		11 - 36	Silty clay loam	0
		36	Weathered bedrock	
138E,G	Witzel very cobbly loam	0 - 4	Very cobbly loam	30-45
		4 - 17	Very stony silty clay loam	50 - 60
		17	Unweathered bedrock	

Soil depth and texture are critical soil properties that influence the health, composition, and vigor of the vegetation growing. The depth of the soil is measured to the underlying bedrock.

In general, soil depth contributes significantly to plant vigor, along with texture and inherent fertility. Soils on Dahlen Property are mapped as having depths ranging from 13 to 60 inches. Soil investigations are limited to the top 60 inches of the soil. Site investigations conducted by *Agronomic Analytics* identified soil depths ranging from 5 to greater than 57 inches.

Soil texture refers to the particle size of the mineral composition of the soil. Soil texture has a direct relationship to plant growth, especially in a winter rainfall climate typical of the Pacific Northwest where plant growth is dependent upon stored soil moisture. The principal component minerals in decreasing size are: sands, silts, and clays. As soil particles decrease in size, the soil exhibits a greater ability to retain moisture. However, if too much soil is held then soils are subject to poorly drained conditions especially when they occur in low lying locations of the landscape. In order to promote optimal plant growth soils should combine good drainage with good moisture holding ability. Soils range from sandy soils which have the quickest drainage and the least moisture holding capacity to clays with the slowest drainage and the greatest moisture holding capacity. Loams and silt loams fall intermediary in characteristics.

The soils mapped on the Dahlen Property exhibit a range of textures from loams to silty and clay loams to clays. *Agronomic Analytics* identified soil textures consistent with the mapped values.

Table 3a. in the attachments provides the properties for the identified inclusions in the mapped soils of the Dahlen Property.

Table 4. Soil Properties - pH Values (USDA, 1987)

Map Unit	Soil Name	Depth (in)	pH
28C	Chehulpum silt loam	0 - 7	5.6 - 6.5
		7 - 13	5.6 - 6.5
41C	Dixonville silty clay loam	0 - 14	5.6 - 6.5
		14 - 26	5.6 - 6.5
43C, 43E	Dixonville-Philomath-Hazelair Complex		
	Dixonville silty clay loam	0 - 14	5.6 - 6.5
		14 - 26	5.6 - 6.5
	Philomath	0 - 6	5.6 - 6.5
		6 - 14	5.6 - 7.3
	Hazelair silty clay loam	0 - 11	5.6 - 6.5
		11 - 15	5.1 - 6.5
		15 - 36	5.1 - 6.5
52D	Hazelair silty clay loam	0 - 11	5.6 - 6.5
		11 - 15	5.1 - 6.5
		15 - 36	5.1 - 6.5
78	McAlpin silty clay loam	0 - 14	5.1 - 6.0
		14 - 60	5.1 - 6.0
102C	Panther silty clay loam	0 - 10	5.6 - 6.5
		10 - 42	3.6 - 6.5
105A	Pengra silt loam	0 - 6	5.6 - 6.0
		6 - 21	5.6 - 6.0
		21 - 60	6.1 - 7.3
108C	Philomath cobbly silty clay	0 - 6	5.6 - 6.5
		6 - 14	5.6 - 7.3
113C,E	Ritner cobbly silty clay loam	0 - 7	5.6 - 6.0
		7 - 32	5.1 - 6.0

125C,D	Steiwer loam	0 - 16	5.1 - 6.5
		16 - 29	5.1 - 6.0
135E	Willakenzie clay loam	0 - 11	5.6 - 6.5
		11 - 36	4.5 - 6.0
138E,G	Witzel very cobbly loam	0 - 4	5.6 - 6.5
		4 - 17	5.6 - 6.5

Soil pH is a measure of the acidity or alkalinity of a soil. A soil that tests to pH 7.0 is described as neutral in reaction. The degree of acidity or alkalinity is expressed as extremely acid when the pH is below 4.5 to very strongly alkaline when pH is 9.1 or higher. The reaction of a soil directly influences the type and growth of vegetation on that soil. Due to the high rainfall prevalent in the Pacific Northwest, soils are highly leached and acid in reaction. The native vegetation is well adapted to these acid conditions. Desirable pasture and crop species usually require more alkaline conditions. Soils on the Dahlen Property are mapped as ranging from predominantly strongly acid to slightly acid. *Agronomic Analytics* identified soil reactions on representative soils ranging from 4.6 to 5.0.

Table 5. Soil Properties - Soil Classification (USDA, 1987)

Map Unit	Soil Name	Taxonomic Class	
		Soil Order	Soil Family
28C	Chehulpum silt loam	Mollisols	Loamy, mixed, superactive, mesic, shallow Ultic Haploxerolls
41C	Dixonville silty clay loam	Mollisols	Fine, mixed, superactive, mesic Pachic Ultic Argixerolls
52D	Hazelair silty clay loam	Mollisols	Very-fine, mixed, smectitic, mesic Aquultic Haploxerolls
78	McAlpin silty clay loam	Mollisols	Fine, mixed, superactive, mesic Aquic Cumulic Haploxerolls
102C	Panther silty clay loam	Mollisols	Very-fine, smectitic, mesic Vertic Epiaquolls
105A	Pengra silt loam	Mollisols	Fine-silty over clayey, mixed over smectic, superactive, mesic Vertic Epiaquolls
108C	Philomath cobbly silty clay	Mollisols	Clayey, smectitic, mesic, shallow Vertic Haploxerolls
113C,E	Ritner cobbly silty clay loam	Inceptisols	Clayey-skeletal, superactive, mesic Typic Haploxweepts
125C,D	Steiwer loam	Mollisols	Fine-loamy, mixed, superactive, mesic Ultic Haploxerolls
135E	Willakenzie clay loam	Alfisols	Fine-loamy, mixed, active, mesic Ultic Haploxeralfs
138E,G	Witzel very cobbly loam	Mollisols	Loamy-skeletal, mixed, superactve, mesic Lithic Ultic Haploxerolls

Soil classification and taxonomy is a rigorous methodology that classifies soils in a hierarchy and in order to establish relations between soils and with one another.

Table 6. Soil Properties - Total Available Soil Moisture (calculated by Agronomic Analytics)			
Map Unit	**Soil Name**	**Soil Depth (in)**	**Total Available Water (in/profile)**
28C	Chehulpum silt loam	13	2.6
41C	Dixonville silty clay loam	26	4.5
43C,E	Dixonville-Philomath-Hazelair Complex		
	Dixsonville	26	4.5
	Philomath	14	2.1
	Hazelair	36	4.7
52D	Hazelair silty clay loam	36	4.7
78	McAlpin silty clay loam	60	10.2
102C	Panther silty clay loam	42	6.6
105A	Pengra silt loam	60	8.5
108C	Philomath cobbly silty clay	14	2.1
113C,E	Ritner cobbly silty clay loam	32	4.2
125C,D	Steiwer loam	29	5.5
135E	Willakenzie clay loam	36	6.3
138E	Witzel very cobbly loam	17	2

Soil available moisture is a critical limiting factor influencing the adaptability of plants and the suitability of certain soils for desirable species. Because native species (e.g. Douglas fir) are adapted to the prevalent winter rainfall pattern, the moisture stored in the soil at the beginning of the growing season greatly influences the health and vigor of the plants growing there. Table 6. above clearly shows that the shallow soils (those with soil depths less than 30 inches) on the Dahlen Property (28C, 41C, 108C, 125C, 125D, and 138E) generally only have half or less of the total available soil moisture in the soil profile than the deeper soils on the property. This has a direct bearing on the ability of these soil to support healthy tree growth.

(3) Report Methodology

(a) Order of Survey

Orders of soil surveys are described as the level of detail that is mapped and sampled in the survey. Orders range from 1st Order surveys up to and exceeding 5th Order surveys. First order surveys are very intensive (i.e. experimental plots, individual building sites), with soil map unit delineations of less than 2.5 acres, and at scales of 1:15,840. Fifth order surveys are very extensive (i.e. regional planning, countrywide surveys), delineations range from 750 to greater than 10,000 acres. Scales for fifth order surveys can be as small as 1:1,000,000.

The published Soil Survey of Lane County would be described as generally a 2nd order survey. It is typically useful for general agriculture and urban planning. The minimum areas delineated range from 2 to 4 acres. The survey is mapped at a scale of 1:20,000 or 3.168 inches per mile.

The recommended scale for intensive land use studies is 1:5000. On the 387 acres under study on the Dahlen Property this would require a sampling rate of approximately 1 soil sample per acre. *Agronomic Analytics* chose to concentrate sampling in the open areas and within in those areas mapped as Witzel, Chehulpum, Steiwer, Pengra,

McAlpin and the Dixonville-Philomath-Hazelair Complex. Areas with existing forest cover were generally not sampled. Samples were taken though in the higher elevation areas mapped as Ritner and Witzel soil series within forested areas. The most detailed maps supplied in this report are at a scale of 17 inches to the mile.

The number of samples chosen for this investigation was based upon field examination and selection deemed sufficient to support the purposes outlined above. Samples were selected in areas representative of the mapped soil series with regard to topography and surface appearance. Samples were typically selected towards the center of the soil map units in order to minimize potential edge effects.

(b) Field Investigation Dates

Field investigations were conducted on August 11,19, 22, 24, 2005. Conditions were consistent with clear, dry, and warm conditions. Preceding seasonal conditions were at the outer bounds of observed norms for the area. Winter rainfall was significantly below normal, however spring rainfall was above normal, especially for the month of May. The investigator recorded rainfall for the month of May at his base of operations in South Hills of Eugene at twice the long term average for the May. Rainfall for the preceding month of July was twice the ten year average, however no precipitation was recorded for the month of August at the time of the site investigations. Annual and perennial grass vegetation was mature and dry. Soils were dry and granular. Slight soil moisture was encountered on several of the deeper test holes at depths of two feet or deeper. There was no observed standing water. Spencer Creek was dry.

Table 7. Photographic Record Descriptions

Figure Number	Title	Description
Panorama No. 1	South Facing Hillside Slope	Floodplain to toeslope to steep, dry hillside
Panorama No. 2	Midslope Area	Chehulpum and Steiwer series
No. 1	Landscape at AH # 7	Toeslope above floodplain
No. 2	Auger Hole # 7	Mapped as Hazelair series
No. 3	Landscape at AH # 9	Area of Witzel looking towards Steiwer
No. 4	Auger Hole # 10	Mapped as Steiwer series but deeper inclusion
No. 5	Landscape at AH # 10	Steiwer series with young colonizing trees
No. 6	Landscape at AH # 19	Looking towards Pengra floodplain soil
No. 7	Auger Hole # 12	Floodplain influenced Hazelair series
No. 8	Landscape at AH # 16	Typical Chehulpum series landscape
No. 9	Auger Hole # 17	Chehulpum series

No. 10	Auger Hole # 11	Mapped as Chehulpum, very shallow, more as Witzel

(b) Observation Methodology

A wide range of observations were conducted in order to characterize the landscape and soils present. Historical soil surveys, aerial photography and vegetation surveys were consulted (see maps in the attachments) in order to detect trends in vegetative cover. An initial field observation was conducted in order to detect vegetation patterns and determine representative soils present. This survey was conducted on 8/11/05. Also general site conditions were observed at this time.

An intensive examination of representative sites (both forested and open grassy areas) was conducted on 8/19/05. Auger holes were dug until bedrock was struck or to a depth of 60 inches on 8/19,22,24/05. Sites were chosen based upon their position in the landscape, vegetative cover present, and the published soil mapping. The results of field sampling are displayed as tables in the attachments. General site evaluations were conducted that characterized important ecological site conditions of climate, topography, hydrological conditions and vegetation. Individual site assessments are summarized in the site evaluation forms in the attachments.

Representative soil samples were collected at all auger sites. Samples were collected sufficient to distinguish horizonal difference in texture, color, and structure. Especially noted was the depth to either fractured or weathered bedrock. Soil pH tests were conducted on the A horizon of the collected samples. Observations of collected samples were compared with published values for the soil series mapped on the property.

(d) Observed Limitations

Soils were examined with the goal of determining the extent of any limitations present to the growth of desirable tree species. The principal question asked was what if anything is preventing the growth of desirable tree species on the large, grassy open area in the center of the property. This open areas are primarily mapped as Chehulpum, Dixonville, Philomath, Hazelair, McAlpin, Panther, Pengra, Steiwer and Witzel soil series. They range from deep, nearly level floodplain soils (e.g. McAlpin, Panther, and Pengra series) to shallow and steep soils on the hillsides (e.g. Chehulpum, Philomath, and Witzel series). The remaining soils (the Dixonville, Hazelair and Steiwer) occur predominantly on the lower toeslopes between the floodplain and the hillsides.

This landscape can be clearly seen in Panorama No. 1 in the photographic record. These soils all include inclusions of deeper or shallower soils than the predominant soil map unit. The investigation conducted by *Agronomic Analytics* sought to identify the limitations, if any to the growth of trees in the open areas. Certain soils within the open areas are unrated for timber production. Other soils are rated for potential tree production but are currently without appreciable tree growth. The observed pattern of vegetative cover has been influenced by both natural and manmade influences.

Table 8. below summarizes the silvicultural requirements for Douglas fir. One can observe in particular that Douglas fir grows poorly on shallow soils, germinates poorly

in grassy, overgrown areas, and is especially subject to lethal conditions on hot, dry aspects. The large open, grassy areas of this property, especially those on the hillsides with south and west exposures exceeds the limiting conditions and consequently is severely limited for the propagation and survival of desirable tree species based upon these published values.

Table 8. Douglas Fir Silvicultural Requirements	
Regimes	Moderate Temperatures & Moisture
Growth Limitations	Poor growth on shallow soils or over high water tables
Climate	Mild, humid climate, dry summers
Temperature	Average annual temperatures: 45 - 55 degrees F
Precipitation	Annual precipitation: 35 - 200 inches/yr.
Elevation	Sea level - 1,500 ft
Reproduction	Reproduction difficulties - germination & survival best on mineral soils. Natural restocking low due high soil temperature. Seedling failures after clearcutting caused by temperature extremes.
Limitations	Lethal conditions - soil surface temperature above 140°F common on south slopes in late spring and summer. Temperatures are usually too high on sunlit seedbeds of organic matter
Shade Tolerance	Medium shade tolerance, Young Douglas fir seedlings require 1/3 full sunlight to achieve maximum photosynthesis. 50% shade required on worst sites for best survival.
Soil Quality	Presence of soil aggregations improves long term productivity. Shallow soils generally do not support productive forests.

(4) Results, Findings, and Decisions

(a) Geologic Setting and Overview

The fundamental geology of this area is well understood and has been extensively described. Several types of bedrock were encountered during the course of this investigation. Commonly occurring fractured basalt and weathered tuffaceous materials were observed. The property is primarily underlain by basaltic flows of the Fisher Formation (Tfeb described below). The fractured and weathered bedrock encountered in this investigation conformed to the published basalt and sandstones described for these soils.

Cascade Range – Consolidated Deposits (see Geology Map in Attachments)

Tfe - Fisher Formation, undivided (Oligocene and Eocene) – Predominantly

continental volcaniclastic[1] rocks, including andesitic[2] lapilli[3] tuff[4], breccia[5], water-laid and air-fall silicic[6] ash, and interbedded basaltic flows. The upper part of the upper Eocene and Oligocene Fisher Formation apparently laps onto and interfingers with the Eugene Formation.

Tib – Diabase and Basalt Intrusions – Pliocene, Miocene, and Oligocene? Sills, plugs and dikes of basaltic andesite, basalt, and andesite; mostly represents feeders, exposed by erosion, for flows and flow breccias of units Tba and Trb

Tfee – Eugene Formation (Oligocene and Eocene) – Thin to moderately thick bedded, coarse to fine-grained arkosic[7], micaceous[8], and, locally, palagonitic[9] sandstone and siltstone, locally highly pumiceous[10], assigned to the upper Eocene to middle Oligocene, marine Eugene Formation. Intruded by mafic[11] sills, dikes, and plugs, that in a few places, have been radiometrically dated at about 30 Ma. In Coburg Hills, north of Eugene, this unit is overlain unconformably by continental volcanogenic rocks, including an ash-flow tuff radimetrically dated at 30.9 ± 0.4 Ma.

(b) Landforms and Topographical Relationships

This property is characterized by two general type of geographic features. The first is convex low and rolling hills dissected by intermittent streams. Hills range from gently sloping to steep. Slopes range from 2 to greater than 75 percent. Hill soil are generally thin, skeletal and shallow to bedrock. The second general landform is the floodplain along Spencer Creek. This area is level to gently sloping with slopes of 0 to 6 percent. The soils in the floodplain formed from silty and clayey alluvium. Associated with these general settings are areas of swales, concave slopes and slump benches where deeper soils are deposited. Significant portions along the rolling ridgetops of the steeper landform is classified as the Looney geomorphic surface which is described as completely dissected and predominantly steeply sloping.

(c) Local Hydrological Conditions

This property is dissected by small, intermittent streams. There were no areas of standing water observed. Spencer Creek was dry. Soil drainage and permeability ranges from poorly drained and very slow permeability in the Panther, Hazelair, and Pengra series to the moderately well drained with moderately slow permeability of the McAlpin series to the well drained soils of the Philomath, Dixonville, Chehulpum,

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[1] Volcaniclastic -
[2] Andesitic – A common volcanic rock intermediate in composition between basalt and rhyolite.
[3] Lapilli -
[4] Tuff – A rock formed of compacted volcanic ash.
[5] Breccia – A rock made of highly angular, coarse fragments.
[6] Silicic – Silicon dioxide; when it occurs as a mineral, it is called quartz.
[7] Arkosic – A sandstone rich in feldspar minerals.
[8] Micaceous – A family of common minerals which may be either black or colorless but are always flaky.
[9] Palagonitic -
[10] Pumiceous -
[11] Mafic sills- A thin sheet of igneous rock sandwiched between layers of sedimentary rock.

Ritner, Steiwer, Willakenzie, and Witzel series that slow to moderately slow permeability.

The floodplain soils exhibit high water tables during the winter rainy season and are subject to ponding and flooding.

The open, grassy areas of the property are characterized by steep, south facing slopes. The shallow soils of these areas generally have little water holding capacity. These slopes in combination with the shallow soils present this location contribute to the hot, dry and droughty conditions of this area.

(d) Revised Soil Mapping Units Characterization

Revision of the existing soil mapping units was beyond the scope of this survey. The primary purpose of the survey was to identify the existing variability in soil depth. Insufficient sampling was undertaken to map the soils to the level of a 1st Order Survey. No revisions are made to existing soil mapping units. However significant variability was noted in the field observations.

(e) Soil Mapping Unit Tabulation

Soil map unit tabulation is for both parcels:

Table 9. Existing Soil Mapping Unit Acreage

Map Unit	Soil Name	Acreage	
		18-04-24 #300	18-03-19 #1300
28C	Chehulpum silt loam	79.7	
41C	Dixonville silty clay loam	12.2	9.0
43C	Dixonville-Philomath-Hazelair Complex	10.2	3.0
43E	Dixonville-Philomath-Hazelair Complex	28.4	23.7
52D	Hazelair silty clay loam	13.9	
78	McAlpin silty clay loam	15.0	
102C	Panther silty clay loam	34.5	14.5
105A	Pengra silt loam	11.6	
108C	Philomath cobbly silty clay	9.8	2.0
113C	Ritner cobbly silty clay loam	0.4	
113E	Ritner cobbly silty clay loam	0.1	
125C	Steiwer loam	9.0	
125D	Steiwer loam	4.0	
135E	Willakenzie clay loam	27.4	
138E	Witzel very cobbly loam	27.3	11.0
138G	Witzel very cobbly loam	37.0	4.0
	Total	**320.5**	**67.2**

Table 10. Existing Mapping Unit Soil Capability Class Acreage					
Map Units	Capability Class	Acreage		Percentage	
		TL # 300	TL # 1300	TL # 300	TL # 1300
78	II	15.0		4.7	
41C,105A,125C	III	32.8	9.0	10.2	13.4
52D,113C,125D,135E	IV	45.7		14.3	
28C,43C,43E,102C, 108C,113E,138E,G	VI	227.2	58.2	70.8	86.6
	Totals	**320.5**	**67.2**	**100.0**	**100.0**

(5) Summary and Conclusions

Detailed descriptions of the individual sample sites can be found on the site evaluation forms and field observation summaries in the attachments. Soils conform in general to the mapped data in the published Lane County Area Soil Survey (1987, USDA Soil Conservation Service). However as noted in the auger hole summaries some soils matched the published descriptions others exhibited a wider range in characteristics than the published values. Texture and stoniness in the field were as reported in the soil survey. The greatest variation noted was in the Steiwer and Chehulpum series. Areas of the Steiwer series that were contiguous with the Spencer Creek floodplain evidenced greater soil depth than the published data for the series and its inclusions. Significant areas of the Chehulpum series in the open areas were thin and shallow and at the lower range for the series' published soil depth data. Sample sites taken in the Witzel series indicate that it was at the very lowest range for the depth to bedrock feature.

Table 11. Published and Observed Soil Depths			
Map Unit	Published Soil Depth	Auger Holes	Observed Soil Depth
138G - Witzel	17 inches	AH # 1	13 inches
		AH # 2	14 inches
		AH # 6	13 inches
		AH # 9	11 inches
28C - Chehulpum	13 inches	AH # 3	18 inches
		AH # 4	18 inches
		AH # 5	5 inches
		AH # 8	28 inches
		AH # 11	11 inches
		AH # 16	7 inches
		AH # 17	21 inches
		AH # 18	23 inches
52D - Hazelair	36 inches	AH # 7	20 inches
43E – DPH Complex	14 – 36 inches	AH # 12	57 inches
125C - Steiwer	29 inches	AH # 10	57 inches

		AH # 19	10 inches
78 - McAlpin	60 inches	AH # 13	12 inches
		AH # 14	27 inches
105A - Pengra	60 inches	AH # 15	24 inches

The pattern of forest cover on the property was found to follow closely the presence of deeper soils on the property. Within the open grassland areas, which appear to have been open areas since the earliest documented observations, most of the soils mapped within these areas are unrated for timber production. The only significant exceptions are the floodplain Dixonville and McAlpin soils and the Witzel on the higher slope. The floodplain soils in the absence of mechanical mowing (runway area) are likely to reforest with typical hydrophilic trees such as willows, alders, ashes, and their associated brush , grasses, and forbs. The Witzel soils of the midslope and higher are rated for timber production and some timber is evidenced on these soils at the highest elevations along the ridgetops. This appears where the Witzel soils are in close association with the Ritner soils. Those areas of the Witzel that do not now support trees and appear not to have had for the last 100 years at least are especially shallow and subject to excessively hot and dry conditions due to their predominantly south aspect. Also apparent on these steep slopes are evidence of severe past erosion. Rills and exposed mineral soils are readily visible.

The soils on the fields examined are currently being used to their highest best use if used for resource production. If it was desired to manage the open areas for pasture production, the productive value of the pastures could be improved through the use of moderate fertilization, liming, and weed control. This however would be expensive and difficult to accomplish. The Witzel very cobbly loam is rated for available AUM's in the soil survey at 2 AUMs if in excellent condition, however in the judgement of this investigator the condition is so poor that these lands are unsuitable for agricultural production.

The soils on this property are absolutely unsuitable for cultivation and production of any agronomic (grass seed, small grains, row crop), high value fruit and vegetable, wine grapes, or nursery crops. They are at best only marginally suited for pasture and small woodlot production on the better soils. The areas of slightly better soils along the floodplain can be used for possible hardwood tree production.

The overwhelming majority of the soils are rated as predominantly Class VI in the USDA Land Capability Classification system. They are severely limited for uses other than permanent cover. They have limited water holding capacity, shallow rooting depth and have high hazards for erosion and potential runoff. Less than 27 percent of the entire property is in Class IV or better.

In conducting this site investigation the following additional vegetative and soil conditions were also observed: areas of invasive brush (scotch broom, blackberries, and poison oak).

This property is unsuited for intensive, commercial agricultural purposes. It is composed of thin, poor soils with little potential for high value production. It is incapable of supporting any significant commercial agricultural. Even with a high level of management and agricultural inputs the expected rates of return would be insufficient to support a commercial operation.

No estimates are made in this report on the value and possible returns that could be expected with modern timber management.

(6) References of Preparer and Literature Citations

Literature Cited

Patching, W.R. 1987. Soil Survey of Lane County Area, Oregon. USDA Soil Conservation Service. U.S. Government Printing Office. Washington, DC.

Retallack, G.J. et al. 2004. Eocene-Oligocene extinction and paleoclimatic change near Eugene, Oregon. GSA Bulletin. 116:7/8 p. 817-839.

Soil Survey Division Staff. 1993. Soil Survey Manual. USDA Handbook No. 18. U.S. Government Printing Office. Washington, DC.

Walker, G.W. and R.A. Duncan. 1989. Geologic Map of the Salem 1° by 2° Quadrangle, Western Oregon.. Miscellaneous Investigations Series. Map I-1893. U.S. Geological Survey. Washington, D.C.

(7) Attachments

(a) Dahlen Property Photographic Record

(b) *Agronomic Analytics* Statement of Qualifications

(c) Location Map (1:85,000)

(a) Landuse Map (1:13,000)

(b) 7.5 Topographic Quadrangle (Creswell) w/ NRCS Soils Map (1:13,000)

(c) Soil Map Units Map (1:13,000)

(b) Site Investigations Augerhole Locations (1:13,000)

(c) Soil Map Units w/ Augerhole Locations (1:4,600)

(d) Observed Soil Depths (1:13,000)

(e) Woodland Site Index Ratings (1:13,000)

(f) Elevation and Aspect Description Map (1:13,000)

(g) Historic Vegetation 1909 Map (1:13,000)

(h) Local Geology (1:13,000)

(i) Site Evaluation Forms

(j) Summarized Field Notes

(k) Mapped Soil Units and Inclusions

Property	Dahlen Property			Conditions: Predominantly hot, dry, sunny, and clear					
Date	8/19, 22, 24/2005								
Location	Auger Hole	Depth (in)	Colour	Texture	Description	Vegetation	Slope/length	Mapped Series	Notes
Site A	AH # 1	Surface				Annual grasses, scattered oaks	30% - 100 ft.	138G	Convex slope
		0 - 3	Dark brown to Reddish brown	Silty loam					Shallow Witzel with previously eroded surface
		3 - 8	Grayish brown		Small rocks present				
		8 - 13	Lighter grayish brown, yellowish to dark reddish brown	Clay loam	Slight moisture				
		13			Bedrock				
Site A	AH # 2	0 - 2	Dark reddish brown	Silty loam	Very thin duff	Fir trees (6-14"), oaks (18")			In trees, approximately 50' up slope from AH # 1, conforms to Witzel
		2 - 14	Dark reddish brown		Fewer and deeper rocks than AH # 1, moister				
		14			Bedrock				
Site B	AH # 3	0 - 3	Dark Grayish brown	Silt loam		Grasses, forbs	3% - 200	28C	Deeper than mapped series, similar to Philomath
		3 - 15	Grayish brown		Some mottles Red & black mottles				
		15 - 17	Lighter gray						
		18			Bedrock				
	AH # 4				25 ft. east of AH # 3				Same as AH # 3
Site B	AH # 5	0 - 5	Grayish brown	Silt loam	Very cobbly on surface	Thin annual grasses	Nearly level	28C	At lowest range of Chehulpum
		5			Rock				
Site C	AH # 6	0 - 3	Dark brown	Silt loam	Small pebbles	Annual grasses	33% - 150 ft.	138G	Soil surface evidences rilling, Stony (10 - 15%) all over surface, conforms to Witzel, eroded
		3 - 8	Reddish brown	S silty clay loam	2 in. rocks				
		8 - 13	Grayish		Stony				
		13			Fractured bedrock				
Site C	AH # 7	0 - 3	Dark brown/blackish			Grasses/forbs	15% - 100	52D	Lower toeslope, more like Dixonville inclusion
8/22/2005		3 - 8	Dark brown						
		10 - 15	Lighter brown		more massive, some red streaks				
		15 - 17	Lighter brown		More red, some small stones				
		20			Bedrock, tannish red				
Site C	AH # 8	0 - 7	Dark brown, grayish	Silty clay		Grasses, forbs, teasel, blackberry	10% - 150 ft.	28C	Stony (2-5%) surface, closer to Stelwer inclusion
		7 - 15	Dark brown	Silty clay	Less gray, moister				
		15 - 23	Dark brown						
		23 - 27	Dark brown						
		28			Bedrock				
Site C	AH # 9	0 - 4	Light brown			Grasses, forbs	30% - 100 ft.	138G	Witzel, eroded
		4 - 11	Light brown		Slightly lighter				
		11			Bedrock				
Site D	AH # 10	0 - 8	Very dark brown	Silt loam		Grasses, forbs, young pine & deciduous trees	15% - 200 ft.	125C	Deeper then Stelwer or any inclusions, more typical of floodplain below, Panther
		8 - 11	Lighter grayish brown		Red & yellow streaks				
		11 - 17		More clay					
		17 -28	Lighter		More yellowish, gritty				
		28 - 54	Grayish	Clay	Slightly pinkish, clayey				
		54 - 57	Slightly more reddish		no bedrock				

Location	Auger Hole	Depth (in)	Colour	Texture	Description	Vegetation	Slope/length	Mapped Series	Notes
Site C	AH # 11	0 - 11	Reddish brown	Silty loam	West face of knoll	Poor thin grass	12% - 50 ft.	28C	Witzel, thin, shallow, eroded surface
		11			Rock				
Site E	AH # 12	0 - 5	Dark grayish brown	Silty clay		Grasses, forbs	2% - 150 ft.	43E	Closest to Hazelair, more like floodplain inclusions - Panther, Dupee
8/24/2005		5 - 8	Dark grayish brown	small stones	moister				
		10	Dark brown		Tan streaks & white particles				
		12 - 32	Slightly lighter gray		Black specks				
		32 - 41	Lighter brown	clay	some pinkish gray				
		42			gritty, some pebbles				
		42 - 46	Light brown	clay					
		57	Light brown	clay	some small pebbles, no bedrock				
Site E	AH # 13	0 - 6	Brown	Silty clay	Possible cut & fill	Mown grasses	5% - 300 ft.	78	Runway area, possibly cut and leveled
		6 - 12	Brown						
		12			Bedrock				
	AH # 13a				Same as AH # 13				15 ft. North of AH # 13
	AH # 13b				Same as AH # 13				30 ft South of AH # 13
		11			Bedrock				
Site E	AH # 14	0 - 8	Dark grayish brown	Silty clay loam	Some tan/yellowish streaks	Mown grasses	2% - 150 ft.	78	West end of runway, Much soil surface cracking to 1 foot, shallower than series or any inclusions
		8 - 16	Dark grayish brown	clayey	slightly lighter				
		16 - 22	Dark grayish brown		some black, dark brown, & yellow specks				
		22 - 27	Slightly lighter brown		Many yellow, brown, white specks, rocks				
		27			bedrock				
Site E	AH # 15	0 - 6	Dark grayish brown	Silt loam		Mown grass	1% - 150 ft.	105A	Shallower than mapped series, similar to Hazelair
		8 - 22	Slightly lighter brown	Clayey	Yellow, reddish brown, black streaks				
		22 - 24			Bedrock				
Site F	AH # 16	0 - 4	Dark brown	Silt loam		Annual grasses	15% - 100 ft.	28C	AH # 16 - 18 conform to mapped series across range of characteristics
		4 - 7	Dark brown						
		7			Bedrock				
	AH # 16a	0 - 7	Dark brown	Silt loam		Annual grasses		28C	8 ft North of AH # 16
		7 - 12	Slightly lighter						
		12			Bedrock				
Site F	AH # 17	0 - 12	Dark brown	Silt loam	Same as AH # 16	Annual grasses		28C	North aspect
		12 - 21	Lighter brown						
		21			bedrock				
	AH # 18	0 - 23	Dark brown	Silt loam	Same as above	Annual grasses			West aspect
		23			Bedrock				
	AH # 19	0 - 4	Reddish Brown	Silty loam		Grasses, forbs	15% - 100 ft.	125D	Rock outcrops across the surface
		4 - 10	Reddish Brown						
		10			Bedrock				



Agronomic Analytics

3419 Chaucer Way
Eugene, Oregon 97405
541-684-8000

Site Evaluation
Name: Karen Dahlen Date: 8/19/05 Field # Site A
Site Description: Upper, steep slope, sheltered, scattered oaks and poison oaks

Climate:
Air Drainage: Poor Solar Radiation: Fair Wind: Sheltered
Avg. Precipitation: 40 to 60 inch Avg. Temperature: 50° to 54° F.

Site Characteristics:
Topography: Steep Elevation: 980 ft. Aspect: SW
Microclimate: Sheltered, hot and dry, droughty

Mapped Soil Characteristics:
Series: 138G Witzel Inclusions: Jory, Nekia, Philomath, Ritner, Rock Outcrops
Drainage: Well drained Ponding: N/A
Texture: Very cobbly loam Restrictive Layers: Shallow to bedrock
Soil Depth: 12 to 20 inches
Water Holding Capacity: 1.6 to 2.4 inches
pH: 4.6 AH # 1 Surface Layer
Nutrients: N P K B

Water Characteristics:
Irrigation Available: N/A
Water Quality:
Adequacy:

Vegetation:
Present Vegetation: Annual grasses, forbs, scattered oaks, poison oaks
Hydrophyllic: N/A

Limiting Factors:
Growth: Greatest limiting factor is soil depth and dry, south facing slopes
Ripening:
Growing Degree Days:
Frost Hazard:

Notes: This semi-open area is evident in the earliest aerial photography (1936) and in the historic vegetation survey (1909). Areas have limited soil depth



Agronomic Analytics

3419 Chaucer Way
Eugene, Oregon 97405
541-684-8000

Site Evaluation
Name: Karen Dahlen Date: 8/19/05 Field # Site B
Site Description: Open, semi-level bench, annual grasses, few scattered trees

Climate:
Air Drainage: Poor Solar Radiation: Good Wind: Closed bowl
Avg. Precipitation: 40 to 60 inch Avg. Temperature: 50° to 54° F.

Site Characteristics:
Topography: Level to moderate slope Elevation: 770 ft. Aspect: S→SW
Microclimate: Open, semi-level bench with moderate environment

Mapped Soil Characteristics:
Series: 28C Chehulpum Inclusions: Hazelair, Philomath, Steiwer, Willakenzie, Witzel
Drainage: Well drained Ponding: N/A
Texture: Silt loam Restrictive Layers: Shallow to bedrock
Soil Depth: 12 to 20 inches
Water Holding Capacity: 2.4 to 2.8 inches
pH: 4.7 AH # 3 Surface Layer
Nutrients: N P K B

Water Characteristics:
Irrigation Available: N/A
Water Quality:
Adequacy:

Vegetation:
Present Vegetation: Annual grasses, forbs, scattered hardwoods
Hydrophyllic: Some sedge areas

Limiting Factors:
Growth: Greatest limiting factor is soil depth and droughtiness
Ripening:
Growing Degree Days:
Frost Hazard:

Notes: This semi-open area is evident in the earliest aerial photography (1936) and in the historic vegetation survey (1909). Areas have limited soil depth.



Agronomic Analytics

3419 Chaucer Way
Eugene, Oregon 97405
541-684-8000

Site Evaluation
Name: Karen Dahlen Date: 8/19/05 Field # Site C
Site Description: Open, steep, south facing slope, annual grasses, few scattered trees

Climate:
Air Drainage: Good Solar Radiation: Excellent Wind: Open westerly
Avg. Precipitation: 40 to 60 inch Avg. Temperature: 50° to 54° F.

Site Characteristics:
Topography: Steep slope Elevation: 900 ft. Aspect: S→SW
Microclimate: Open, steep slope with hot, dry environment

Mapped Soil Characteristics:
Series: 138G Witzel Inclusions: Jory, Nekia, Philomath, Ritner, Rock Outcrops
Drainage: Well drained Ponding: N/A
Texture: Very cobbly loam Restrictive Layers: Shallow to bedrock
Soil Depth: 12 to 20 inches
Water Holding Capacity: 1.6 to 2.4 inches
pH: _____
Nutrients: _____ N _____ P _____ K _____ B _____

Water Characteristics:
Irrigation Available: N/A
Water Quality: _____
Adequacy: _____

Vegetation:
Present Vegetation: Thin annual grasses, forbs, few scattered hardwoods
Hydrophyllic: _____

Limiting Factors:
Growth: Greatest limiting factor is soil depth and droughtiness
Ripening: _____
Growing Degree Days: _____
Frost Hazard: _____

Notes: This semi-open area is evident in the earliest aerial photography (1936) and in the historic vegetation survey (1909). Areas have limited soil depth. Scattered rock outcrops present.



Agronomic Analytics

3419 Chaucer Way
Eugene, Oregon 97405
541-684-8000

Site Evaluation
Name: Karen Dahlen Date: 8/22/05 Field # Site D
Site Description: Open, moderately rolling slope, scattered younger trees colinizing

Climate:
Air Drainage: Fair Solar Radiation: Good Wind: Semi-closed, westerly
Avg. Precipitation: 40 to 60 inch Avg. Temperature: 50° to 54° F.

Site Characteristics:
Topography: Moderate slope Elevation: 800 ft. Aspect: S
Microclimate: Semi-open, protected and sheltered

Mapped Soil Characteristics:
Series: 125C Steiwer Inclusions: Chehulpum, Hazelair, Willakenzie
Drainage: Well drained Ponding: N/A
Texture: Loam Restrictive Layers: None
Soil Depth: 27 to 40 inches
Water Holding Capacity: 4.9 to 6.0 inches
pH: 5.0 AH # 10 Surface Layer
Nutrients: _____ N _____ P _____ K _____ B _____

Water Characteristics:
Irrigation Available: N/A
Water Quality: _____
Adequacy: _____

Vegetation:
Present Vegetation: Annual and perennial grasses, forbs, scattered hardwoods younger trees colonizing
Hydrophyllic: Some sedge areas

Limiting Factors:
Growth: Greatest limiting factor is droughtiness
Ripening: _____
Growing Degree Days: _____
Frost Hazard: _____

Notes: This semi-open area is evident in the earliest aerial photography (1936) and in the historic vegetation survey (1909).



Agronomic Analytics

3419 Chaucer Way
Eugene, Oregon 97405
541-684-8000

Site Evaluation
Name: Karen Dahlen Date: 8/24/05 Field # Site E
Site Description: Open, shallow slope, scattered younger trees colonizing

Climate:
Air Drainage: Good Solar Radiation: Good Wind: Open, westerly
Avg. Precipitation: 40 to 60 inch Avg. Temperature: 50° to 54° F.

Site Characteristics:
Topography: Shallow slope Elevation: 800 ft. Aspect: South
Microclimate: Open, upper floodplain

Mapped Soil Characteristics:
Series: 52D Hazelair Inclusions: Dixsonville, Dupee, Panther, Philomath
Drainage: Poorly drained Ponding: N/A
Texture: Silty clay loam Restrictive Layers: None
Soil Depth: 30 to 40 inches
Water Holding Capacity: 4.2 to 5.3 inches
pH: 5.0 AH # 14 Surface Layer
Nutrients: N P K B

Water Characteristics:
Irrigation Available: N/A
Water Quality:
Adequacy:

Vegetation:
Present Vegetation: Annual and perennial grasses, forbs, scattered hardwoods younger trees colonizing
Hydrophyllic: Some sedge areas

Limiting Factors:
Growth: Greatest limiting factor is high water table during substatial part of the year
Ripening:
Growing Degree Days:
Frost Hazard:

Notes: This semi-open area is evident in the earliest aerial photography (1936) and in the historic vegetation survey (1909).



Agronomic Analytics

3419 Chaucer Way
Eugene, Oregon 97405
541-684-8000

Site Evaluation
Name: Karen Dahlen Date: 8/24/05 Field # Site F
Site Description: Moderate to steep slopes, sheltered

Climate:
Air Drainage: Poor Solar Radiation: Fair Wind: Closed, westerly
Avg. Precipitation: 40 to 60 inch Avg. Temperature: 50° to 54° F.

Site Characteristics:
Topography: Moderate slope Elevation: 850 ft. Aspect: E→N→W
Microclimate: Open, upper floodplain

Mapped Soil Characteristics:
Series: 28C Chehulpum Inclusions: Hazelair, Philomath, Steiwer, Willakenzie, Witzel
Drainage: Well drained Ponding: N/A
Texture: Silt loam Restrictive Layers: Shallow to bedrock
Soil Depth: 12 to 20 inches
Water Holding Capacity: 2.4 to 2.8 inches
pH: 5.0 AH # 16 Surface Layer
Nutrients: _____ N _____ P _____ K _____ B _____

Water Characteristics:
Irrigation Available: N/A
Water Quality: _____
Adequacy: _____

Vegetation:
Present Vegetation: Annual and perennial grasses, forbs, scattered hardwoods
Hydrophyllic: N/A

Limiting Factors:
Growth: Greatest limiting factor is droughtiness and shallow to bedrock
Ripening: _____
Growing Degree Days: _____
Frost Hazard: _____

Notes: This semi-open area is evident in the earliest aerial photography (1936) and in the historic vegetation survey (1909).

Table 3a Soil Properties of Inclusions - Horizons, Depth, and Colour					
Map Unit	Soil Name	Inclusions	Depth (in)	Colour	Texture
28C	Chehulpum silt loam	Hazelair	0 - 11	very dark brown	silty clay loam
			11 - 15	dark brown	silty clay
			15 - 36	dark brown, light olive brown (mottled)	clay
			20 - 40	weathered bedrock	
		Philomath	0 - 6	very dark brown	silty clay
			6 - 14	very dark brown	clay
			12 - 20	weathered bedrock	
		Steiwer	0 - 9	Very dark grayish brown	loam
			9 - 16	Dark brown	loam
			16 - 29	Dark yellowish brown	clay loam
		Willakenzie	0 - 11	Dark brown	Clay loam
			11 - 36	Dark reddish brown	Silty clay loam, clay loam
			36		Weathered bedrock
		Witzel	0 - 4	Dark brown	Very cobbly loam
			4 - 17	Dark reddish brown	Very stony silty clay loam, very cobbly clay loam
			17		Unweathered bedrock
		Rock outcrop			
41C	Dixonville silty clay loam	Bellpine	0 - 13	Dark reddish brown	silty clay loam
			13 - 34	Dark reddish brown, dark red	silty clay
			34		Weathered tuffaceous sandstone
		Hazelair	See above		
		Nekia	0 - 0.5	duff	
			0.5 - 10.5	dark reddish brown, reddish brown	silty clay loam
			10.5 - 35.5	dark reddish brown	clay
			20 - 40	fractured basalt	
		Philomath	See above		
		Witzel	See above		
		Rock outcrop			
52D	Hazelair silty clay loam	Dixonville	0 - 14	very dark brown	silty clay loam
			14 - 26	dark brown	silty clay
			20 - 40	weathered bedrock	
		Dupee	0 - 12	very dark grayish brown	silt loam
			12 - 51	dark brown, brown (mottled)	silty clay loam,silty clay, clay loam
			51 -55	variagated	clay loam
			40 - 60	bedrock	
		Panther	0 - 10	very dark brown	silty clay loam
			10 - 29	very dark grayish brown, dark grayish brown	clay
			29 - 42	dark grayish brown (mottled)	clay
			40 - 60	weathered bedrock	
		Philomath	See above		
78	McAlpin silty clay loam	Abiqua	0 - 21	Dark brown	silty clay loam
			21 - 31	Dark brown	silty clay
			31 - 38	Dark brown	silty clay loam
			38 - 60	Dark brown	gravelly clay loam
		Waldo	0 - 11	Very dark brown	silty clay loam
			11 - 60	Very dark gray,gray, mottled	silty clay, clay
		Riverwash	0- 60		Sand & gravel
		Fluvents	0 - 60	Brown, dark brown	Stratified sand, silt, & clay
102C	Panther silty clay loam	Bashaw	0 - 7	very dark gray	clay
			7 - 41	black, very dark gray	clay
			41 - 63	olive brown, light browish gray	silty clay
		Dupee	See above		
		Hazelair	See above		
		Philomath	See above		
105A	Pengra silt loam	Courtney	0 - 15	Very dark brown	gravelly silty clay loam
			15 - 28	Dark grayish brown	gravelly clay
			28 - 41	Brown	very gravelly clay loam
			41 - 60	Multicoloured	very gravelly sand
		Dupee	See above		
		Hazelair	See above		
		Natroy	0 - 5	Very dark grayish brown	silty clay
			5 - 26	Very dark gray	clay
			26 - 60	Dark grayish brown,dark brow	clay, gravelly clay
		Panther	See above		

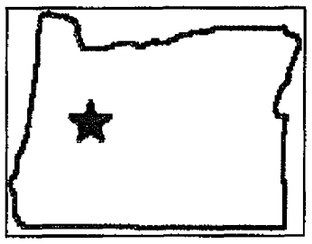
Dahlen Soil Report

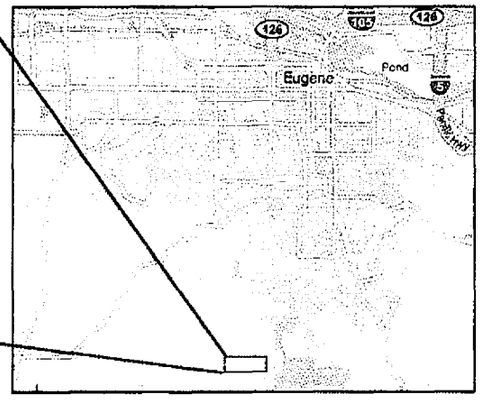
Map Unit	Soil Name	Inclusions	Depth (in)	Colour	Texture
108C	Philomath cobbly silty clay	Dixonville	See above		
		Hazelair	See above		
		Panther	See above		
		Witzel	See above		
113C,E	Ritner cobbly silty clay loam	Jory	0 - 9	dark reddish brown	silty clay loam
			9 - 60	dark reddish brown	silty clay
		Nekia	See above		
		Witzel	See above		
125C,D	Steiwer loam	Chehulpum	0 - 7	Very dark grayish brown	Silt loam
			7 - 13	Dark brown	Silt loam, clay loam, gravelly silt loam
			13		Weathered bedrock
		Hazelair	See above		
		Willakenzie	See above		
135E	Willakenzie clay loam	Bellpine	See above		
		Hazelair	See above		
		Nekia	See above		
138E,G	Witzel very cobbly loam	Jory	See above		
		Nekia	See above		
		Philomath	See above		
		Ritner	0 - 1	Duff	
			1 - 8	dark reddish brown	Cobbly silty clay loam
			8 - 32	dark reddish brown & yellowish red	Very gravelly silty clay, Very cobbly silty clay loam
			32		Unweathered bedrock
		Rock Outcrop			

Section 24 Twp. 18S. R. 4W.

Section 19 Twp. 18S. R. 3W.







Location Map

Dahlen Property
Map No. 18--04--24 #300
Map No. 18--03--19 #1300

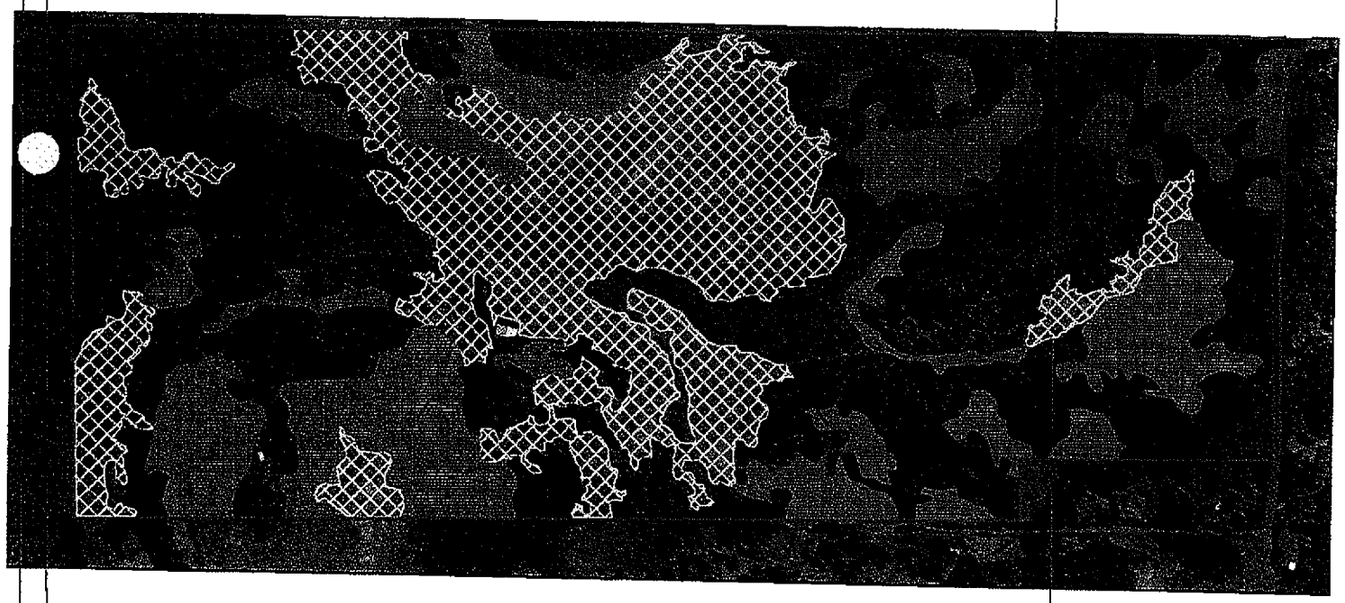
GRAPHIC SCALE

(IN FEET)
1 inch = 500 ft.

Prepared by:
Agronomic Analytics

Section 24 Twp. 18S. R. 4W.

Section 19 Twp. 18S. R. 3W.



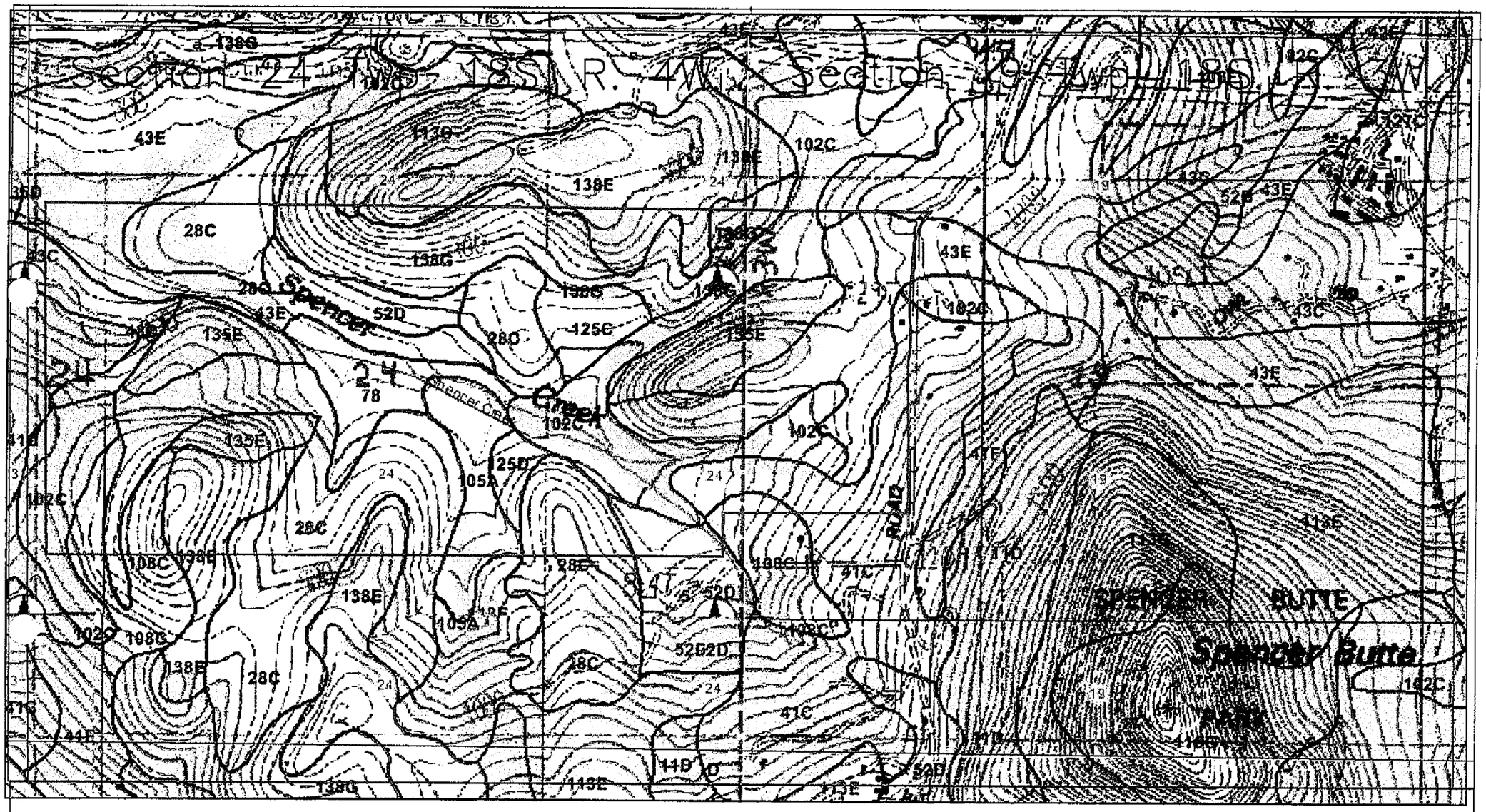
Landuse Map

Dahlen Property
Map No. 18-04-24 #300
Map No. 18-03-19 #1300

Open Areas, Predominantly Grasslands

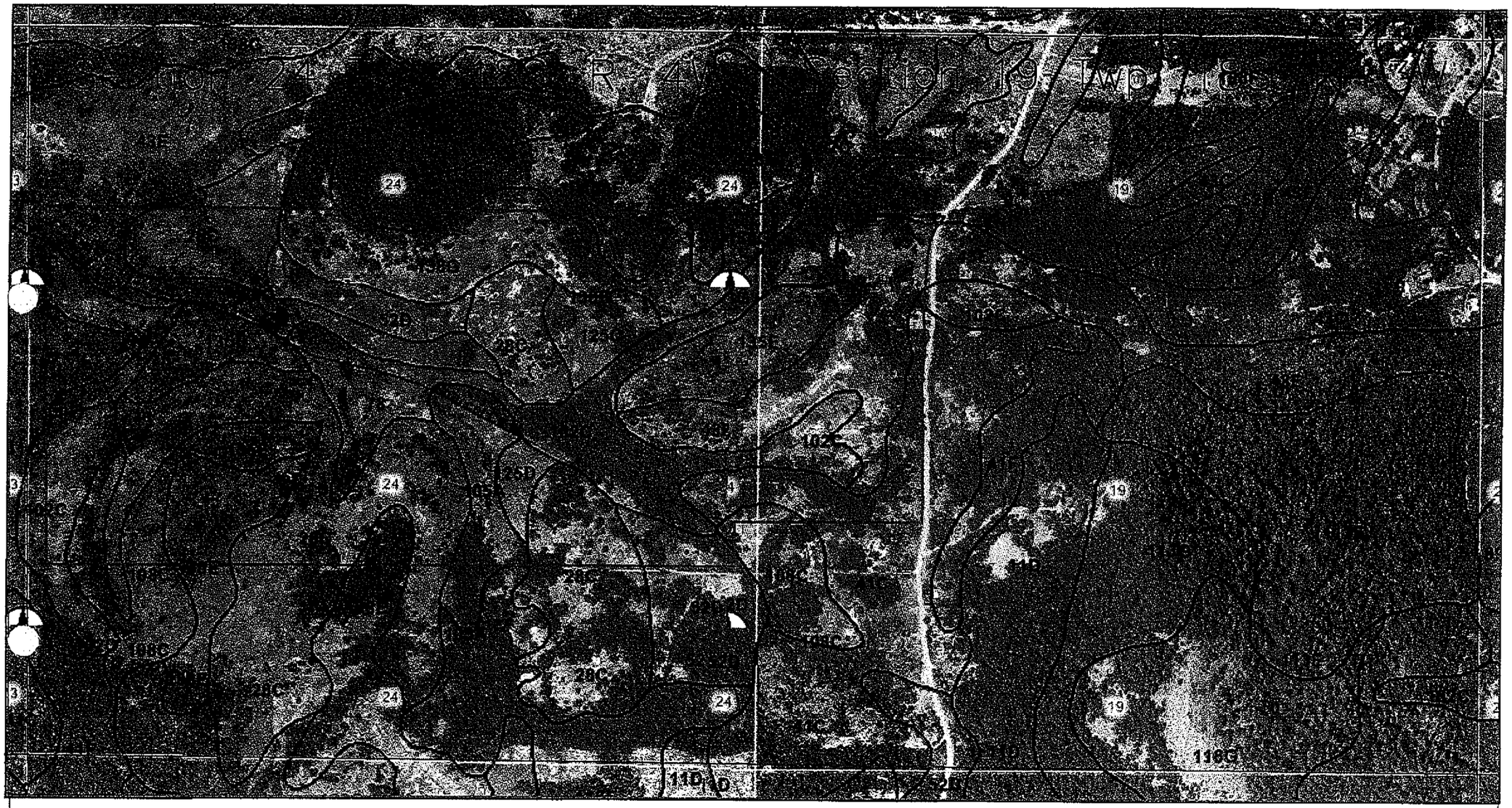
Mixed Open Areas and Trees, Grassland, Brush, Young Trees

Forested Areas, Predominantly Second Growth, Some Older Trees



Dahlen Property
Map No. 18–04–24 #300
Map No. 18–03–19 #1300

7.5 Topo Map
Creswell Quadrangle

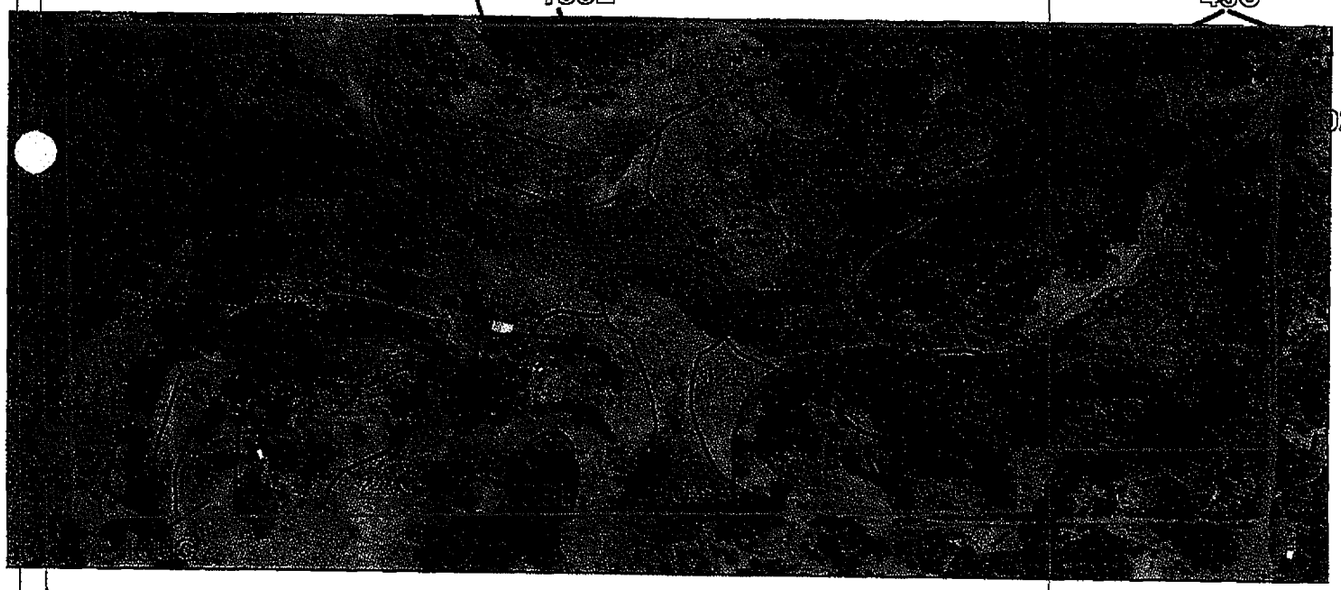


Dahlen Property
Map No. 18-04-24 #300
Map No. 18-03-19 #1300

USDA Soil Survey of Lane County Area, Oregon
1987. SCS. Excerpt from Page 103

Section 24 Twp. 18S. R. 4W.

Section 19 Twp. 18S. R. 3W.



Soils Occuring Under Open Grasslands

28C - Chehulpum silt loam
43C,E - Dixonville-Philomath-Hazelair Complex
52D - Hazelair silty clay loam
78 - McAlpin silty clay loam
102C - Panther silty clay loam
105A - Pengra silt loam
125C,D - Steiwer loam
138E,G - Witzel very cobbly loam

Soil Map Units

Dahlen Property
Map No. 18-04-24 #300
Map No. 18-03-19 #1300

28C - Chehulpum silt loam
41C - Dixonville silty clay loam
43C,E - Dixonville-Philomath-Hazelair Complex
52D - Hazelair silty clay loam
78 - McAlpin silty clay loam
102C - Panther silty clay loam
105A - Pengra silt loam
108C - Philomath cobbly silty clay loam
113C,E - Ritner cobbly silty clay loam
125C,D - Steiwer loam
135E - Willakenzie clay loam
138E,G - Witzel very cobbly loam

Section 24 Twp. 18S. R. 4W.



Section 19 Twp. 18S. R. 3W.

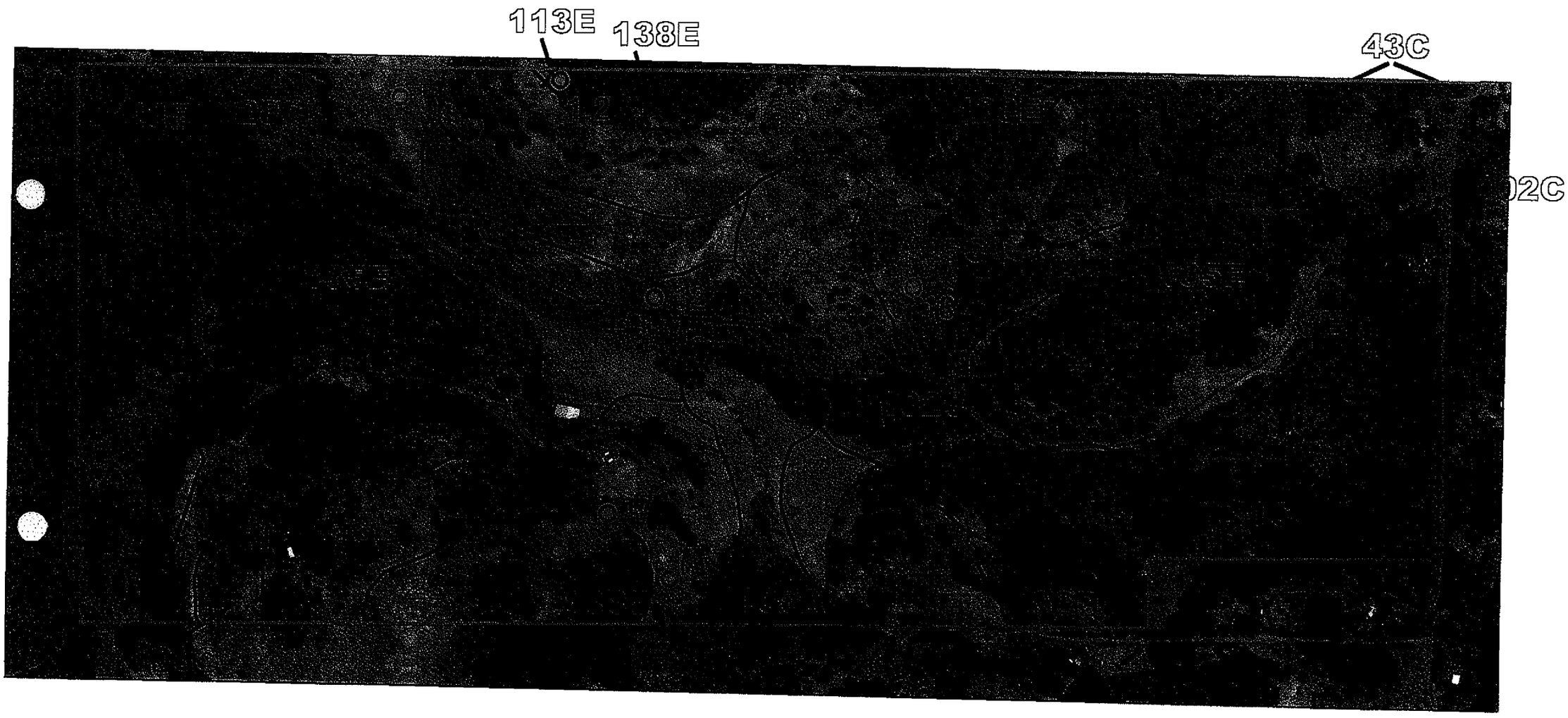
Augerhole Soil Depths

No. 1 – 13 inches
No. 2 – 14 inches
No. 3,4 – 18 inches
No. 5 – 5 inches
No. 6 – 13 inches
No, 7 – 20 inches
N0. 8 – 28 inches
No. 9 – 11 inches
No. 10 – > 57 inches
No. 11 – 11 inches
No. 12 – > 57 inches
No. 13 – 12 inches
No. 14 – 27 inches
No. 15 – 24 inches
No. 16 – 7 inches
No. 17 – 21 inches
No. 18 – 23 inches
No. 19 – 10 inches

Augerholes

Dahlen Property
Map No. 18–04–24 #300
Map No. 18–03–19 #1300

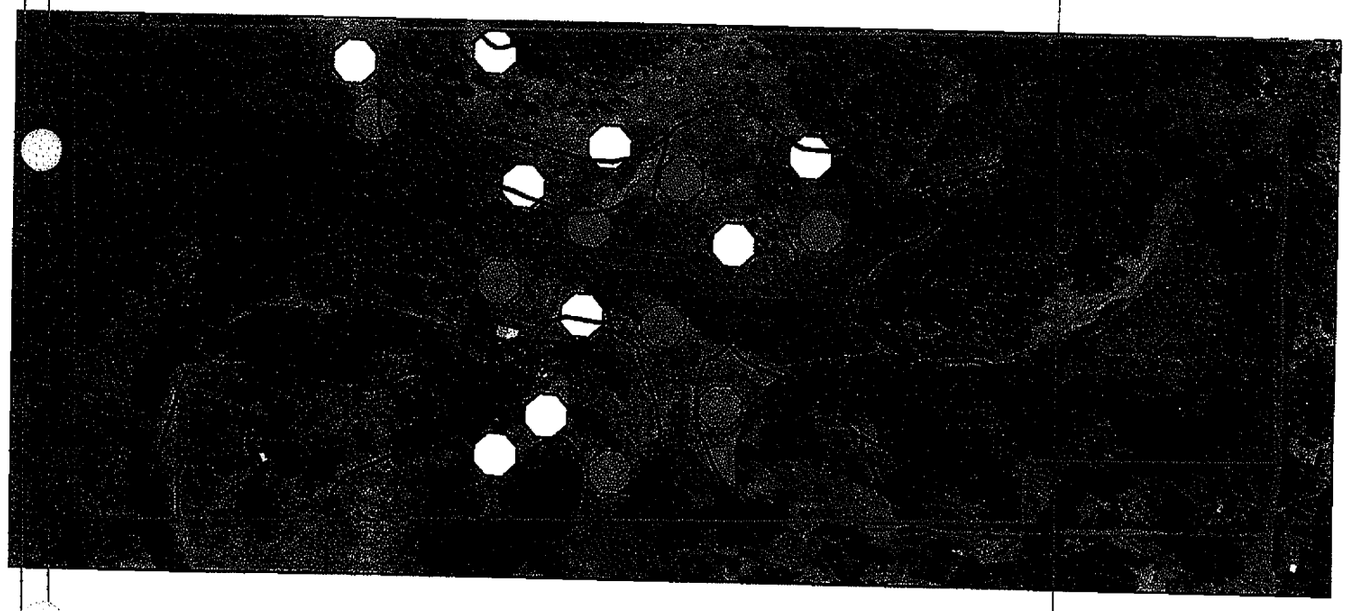
◎ Augerholes



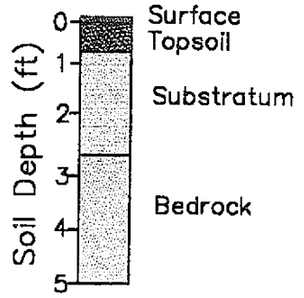
Soil Map Units w/ Augerhole Locations

Section 24 Twp. 18S. R. 4W.

Section 19 Twp. 18S. R. 3W.



Typical Soil Profile



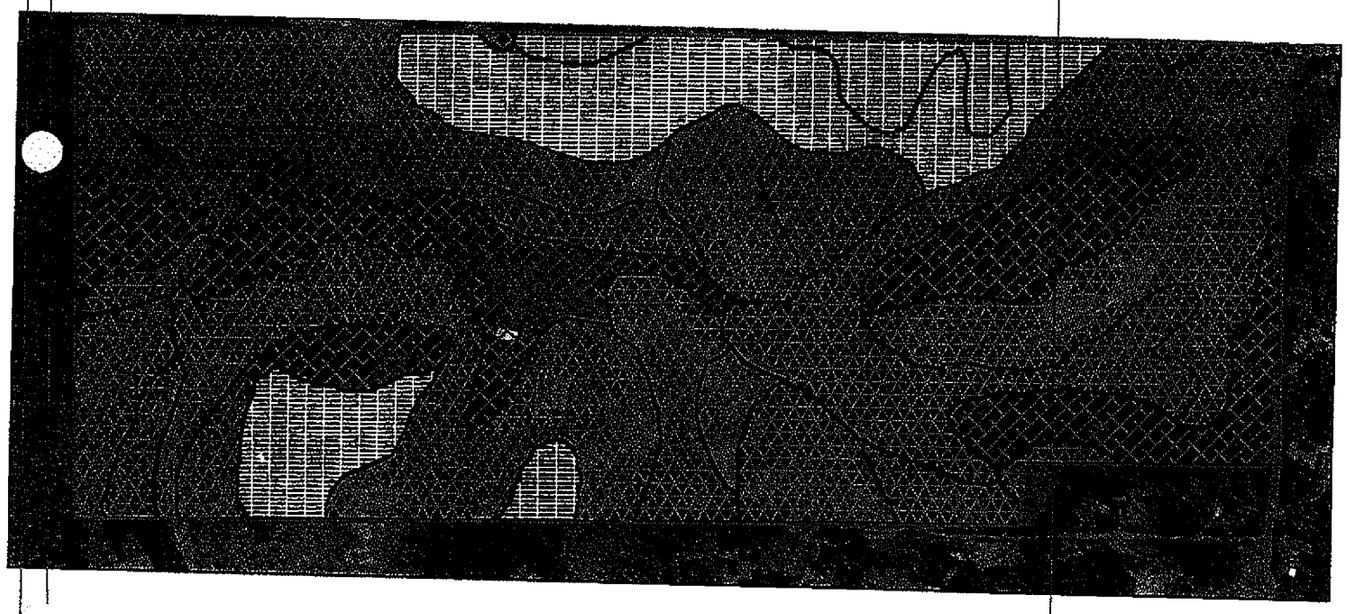
Observed Soil Depths

Dahlen Property
Map No. 18-04-24 #300
Map No. 18-03-19 #1300

- Observed Soil Depths Greater Than 20 inches
- Observed Soil Depths Greater Than 10 inches but Less Than 20 inches
- Observed Soil Depths Less Than 10 inches

Section 24 Twp. 18S. R. 4W.

Section 19 Twp. 18S. R. 3W.



Woodland Site Index Ratings (USDA, 1987)

Dahlen Property
Map No. 18-04-24 #300
Map No. 18-03-19 #1300

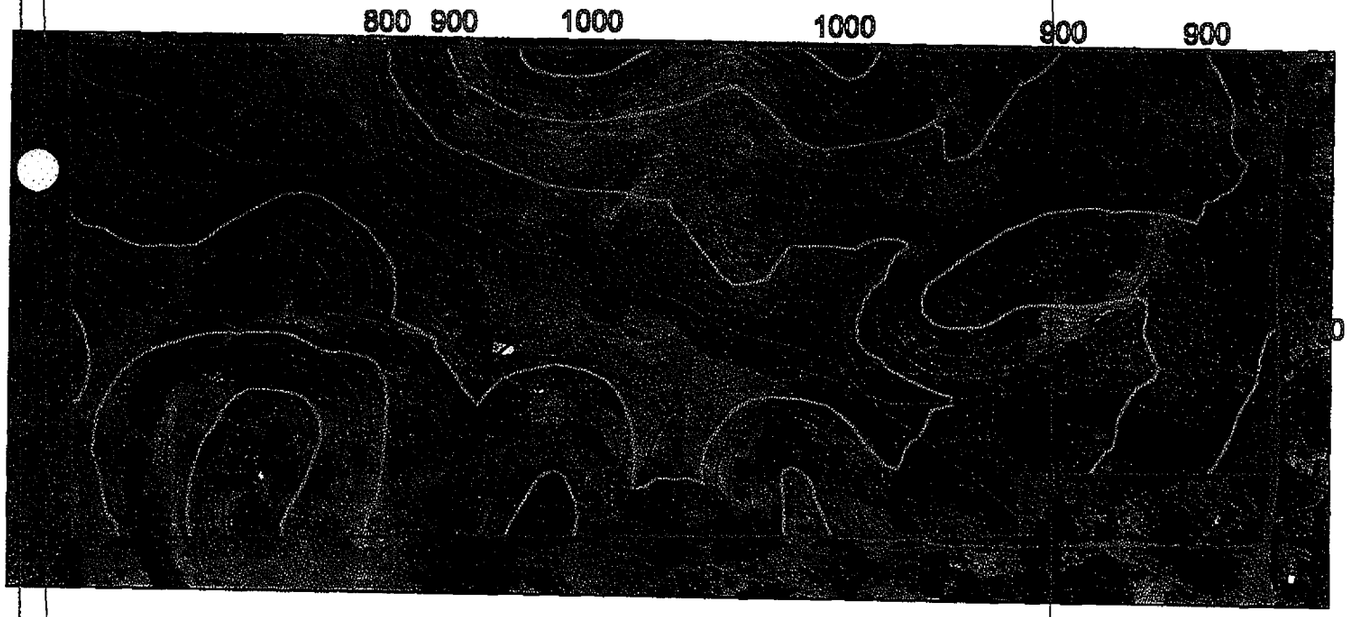
Soils with Woodland Site Index Ratings Greater Than 100

Soils with Woodland Site Index Ratings Less Than 100

Soils Without Woodland Site Indexs

Section 24 Twp. 18S. R. 4W.

Section 19 Twp. 18S. R. 3W.



Elevation and Aspect Description

Elevations on the Dahlen Property range from a low of 730 feet above sea level in the NW corner to a high of 1080 feet in the SE corner and at the main house. Open grasslands exhibit primarily a south and southwest aspect.

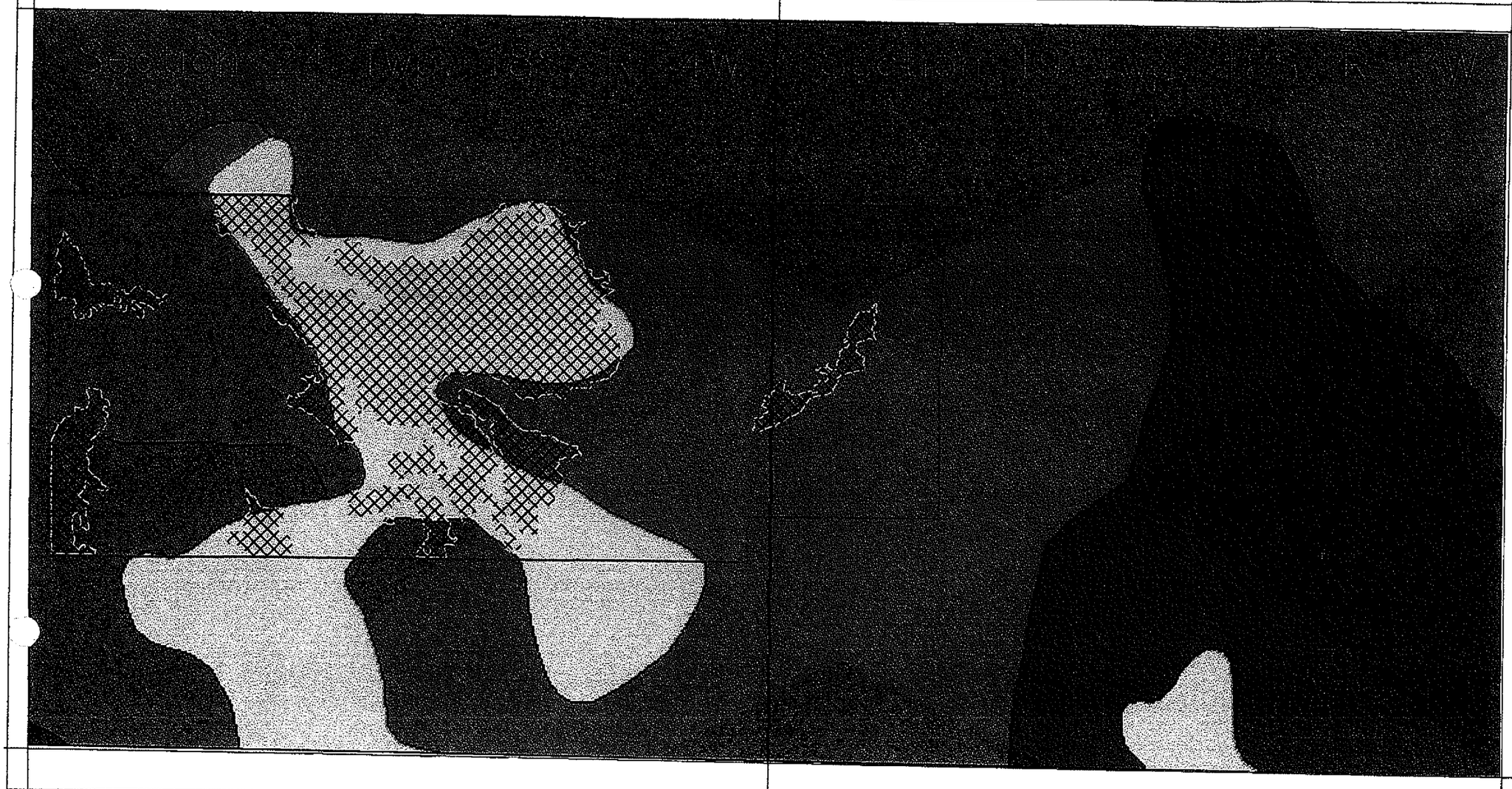
Elevation Map

Dahlen Property
Map No. 18–04–24 #300
Map No. 18–03–19 #1300

100 foot contours

20 foot contours

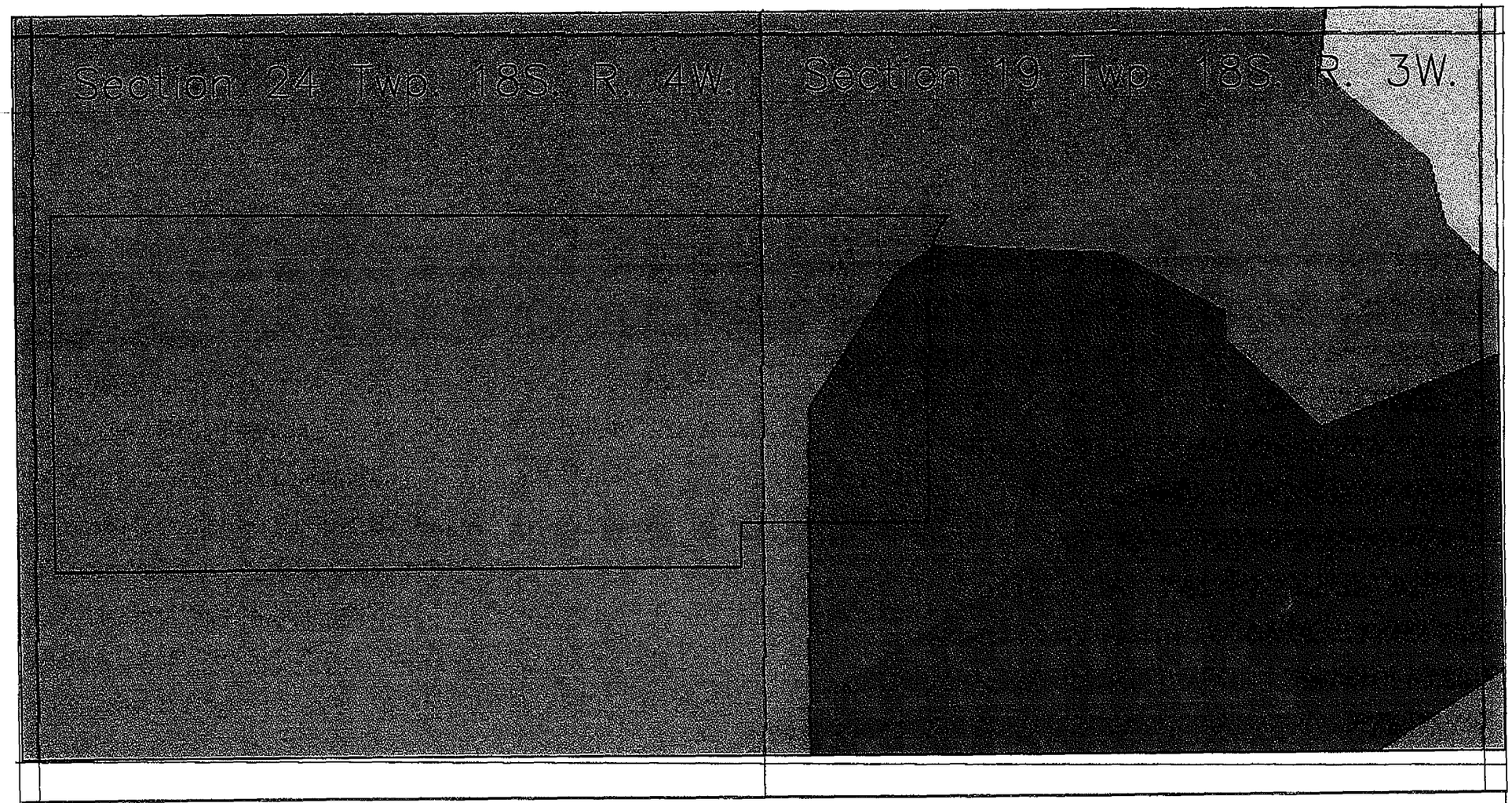
Spencer Creek



Historic Vegetation - 1909

Dahlen Property
Map No. 18-04-24 #300
Map No. 18-03-19 #1300

- Oak – Douglas Fir
- Oak Savanna
- Douglas Fir
- Grasslands – Roemer Fescue
- Current Open Grasslands



Local Geology

Dahlen Property
Map No. 18-04-24 #300
Map No. 18-03-19 #1300

Tfeb – Fisher and Eugene formations basaltic rocks Oligocene and upper Eocene basaltic rocks

Tib – Basalt and andesite intrusions Pliocene, Miocene, and Oligocene? Sills, plugs and dikes of basaltic andesite, basalt, and andesite; mostly represents feeders, exposed by erosion, for flows and flow breccias of units Tba and Trb

Tfee – Marine Eugene Formation, where mapped separately Oligocene and upper Eocene thin to moderately thick bedded, coarse- to fine-grained arkosic and micaceous sandstone and siltstone, locally highly pumiceous

Dahlen Property August 2005 Photographic Record ***Agronomic Analytics***



Figure No. 1 Landscape at Auger Hole # 7

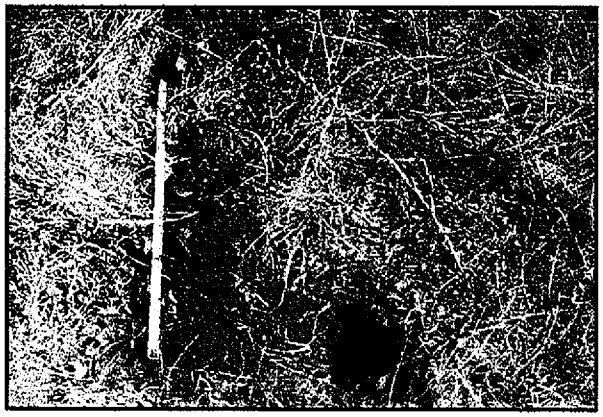


Figure No. 2 Auger Hole # 7



Figure No. 3 Landscape at Auger Hole # 9 looking East towards Auger Hole # 10



Figure No. 4 Auger Hole # 10



Figure No. 5 Landscape at Auger Hole # 10

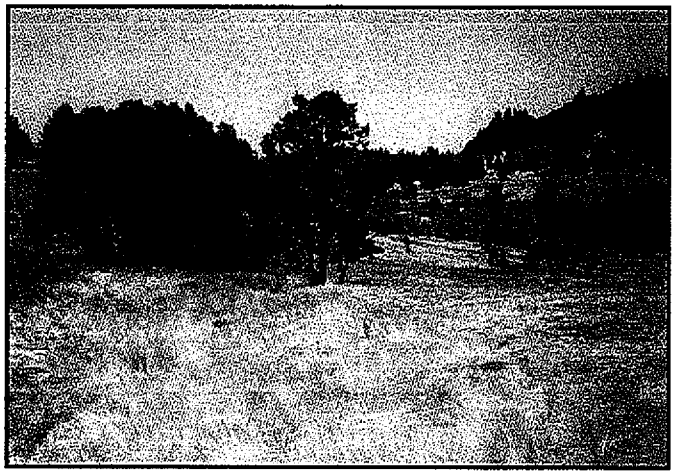


Figure No. 6 Landscape at Auger Hole # 19 looking Northwest towards Auger Hole # 15



Figure No. 8 Landscape at Auger Hole # 16

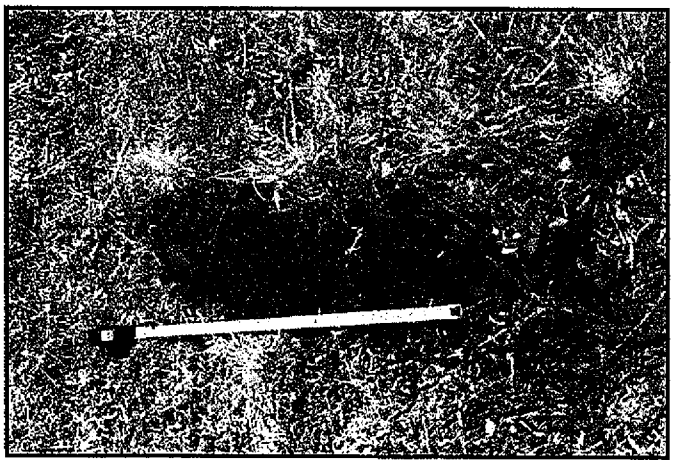


Figure No. 9 Auger Hole # 17

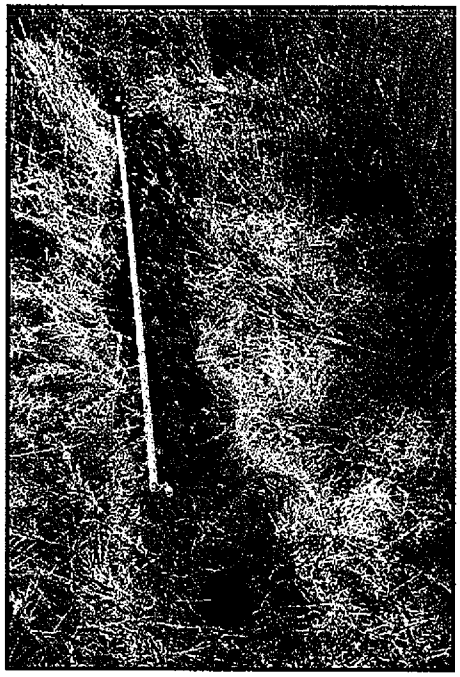


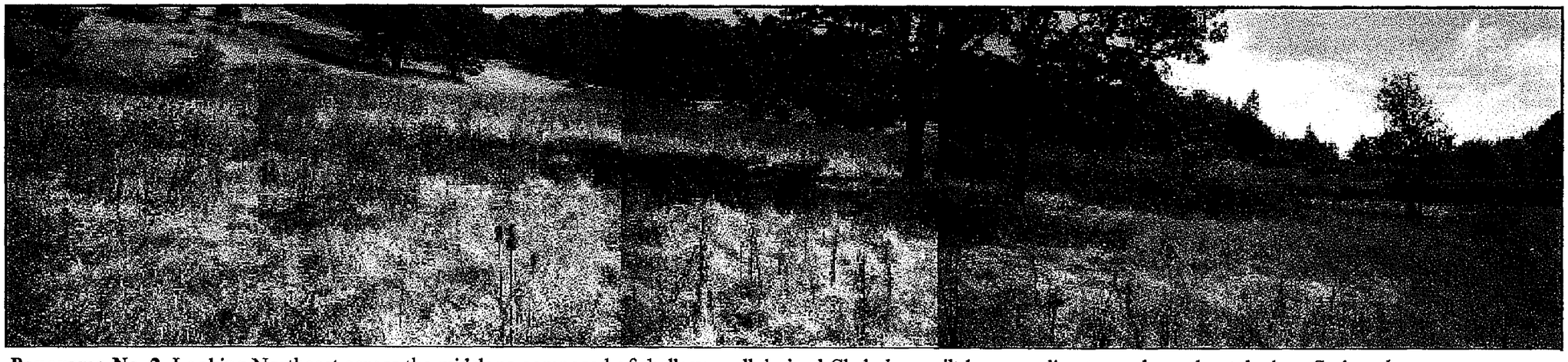
Figure No. 7 Auger Hole # 12



Figure No. 10 Auger Hole # 11



Panorama No. 1 Looking North from the location of the shop across the Spencer Creek floodplain composed of deep to moderately alluvial silty clay soils (McAlpin, Pengra, and Hazelair). Lower toe of the hilside composed of gradually shallower soils (Hazelair, Dixsonville, and Philomath) formed over colluvium. Steep upper slopes consist of shallow soils (Witzel) formed in weathered basaltic bedrock.



Panorama No. 2 Looking Northeast across the midslope composed of shallow, well drained Chehulpum silt loam grading towards moderately deep Steiwer loam.

September 29, 2005

Jerry Kendall
Lane County Land Management Division
Public Service Building
125 E. 8th Avenue
Eugene, OR 97401

Re: Karen Dahlen (PA 04-6092)
Our File No. 22186.30005

Dear Jerry:

Enclosed are documents and materials that are delivered to you with our request that you include the same in the record of PA 04-6092. The enclosures are provided to the record to support the Dahlen application as evidence addressing applicable criteria, issues raised during the Lane County Planning Commission proceedings and issues raised by opponents of the application.

The following documents and materials, with a brief explanation of each and its purpose, are enclosed:

1. Soil Investigation Report for Karen Dahlen, prepared by Stephen Caruana, Agronomic Analytics;

2. Findings of Fact and Conclusions of Law for Minor Amendment of the Lane County Rural Comprehensive Plan and Zone Change From Exclusive Farm Use to Marginal Lands PA 04-6092.

Please place this correspondence and its enclosures into the record of PA 04-6092. If you have any questions regarding this matter please contact me. Please contact me once you

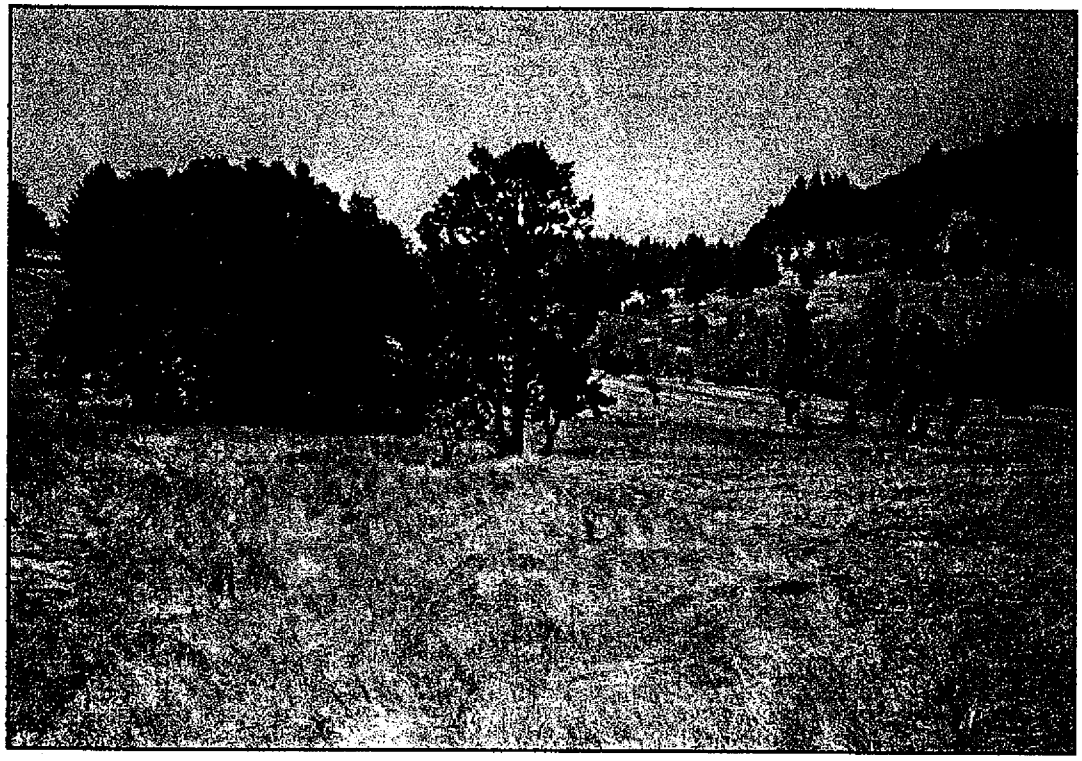
have determined the date and time that this matter will be scheduled for hearing before the Lane County Board of Commissioners.

Best regards,

STEVE CORNACCHIA

PSC:ss
Enclosures
Cc: Karen Dahlen (with enclosures)

Soil Investigation Report
For
Karen Dahlen
Eugene, Oregon



Prepared by:
Stephen Caruana

Agronomic Analytics

3419 Chaucer Way • Eugene, OR 97405 • Phone (541) 684-8000 • caruana@integraonline.com

Dahlen Soil Report Contents

(1) General Information

(a) Report Title

(b) Land Owner

(c) Preparer

(d) Land Use Case File Number

(e) County of Survey

(f) Location

(g) Present Zoning Designation

(h) Current Land Use

(i) Purpose of the Investigation.

(2) Previous Mapping and Supporting Documentation

(3) Report Methodology

(a) Order of Survey

(b) Field Investigation Dates

(c) Observation Methodology

(d) Observed Limitations

(4) Results, Findings, and Decisions

(a) Geologic Setting and Overview

(b) Landforms and Topographical Relationships

(c) Local Hydrological Conditions

(d) Revised Soil Mapping Units Characterization

(e) Soil Mapping Unit Tabulation

(5) Summary and Conclusions

(6) References of Preparer and Literature Citations

(7) Attachments

(a) Location Map (1:85,000)

(b) Landuse Map (1:13,000)

(b) 7.5 Topographic Quadrangle (Creswell) w/ NRCS Soils Map (1:13,000)

(c) Soil Map Units Map (1:13,000)

(c) Site Investigations Augerhole Locations (1:13,000)

(d) Soil Map Units w/ Augerhole Locations (1:4,600)

(e) Observed Soil Depths (1:13,000)

(f) Woodland Site Index Ratings (1:13,000)

(g) Elevation and Aspect Description Map (1:13,000)

(h) Historic Vegetation 1909 Map (1:13,000)

(i) Local Geology (1:13,000)

(e) Assessor's Map (1:5,000) (Not Included)

Dahlen Property Soil Report

(1) General Information

(a) Report Title:

Dahlen Property Soil Investigation Report

(b) Land Owner:

Karen Dahlen
85800 S. Willamette St.
Eugene, OR 97401

(c) Preparer:

Stephen Caruana
Principal Agronomist
Agronomic Analytics
3419 Chaucer Way
Eugene, OR 97405
(see Statement of Qualifications in Attachments)

(d) Land Use Case File Number:

(e) County of Survey:

Lane County, OR

(f) Location:

The subject property consists of 387.7 acres in two parcels approximately 1/2 mile from the southern edge of the city limits of Eugene, OR on South Willamette Street. The Map & Tax Lot Numbers are: 18-04-24, TL #300 (320.5ac.) and 18-03-19, TL 1300 (67.2ac.) The property is located approximately 1/2 mile south of the current Urban Growth Boundary of Eugene. The property is centered on 43.988 North Latitude and 123.108 West Longitude. The property is located in the Cascade Range foothills that demarcate the south boundary of the City of Eugene. The soils of the foothills are generally not suitable for cultivation of any commercially viable agricultural crops. They have traditionally been used for sheep, cattle, and timber production on the slightly more suitable soils. Tax Lot # 300 is designated as **Exclusive Farm Use** and Tax Lot # 1300 is designated as **Marginal Lands**. Power lines to the north border the property. The property is entirely fenced along the perimeter and access is limited.

(g) Current Land Use:

Rural residential, small and medium sized woodlots and open lands, adjoining parcels support small-scale farming and woodlot production. Urban development exists directly to the north of the Dahlen Property.

(h) Purpose of the Investigation:

The attorney for the landowner contacted *Agronomic Analytics* to conduct a site investigation to determine if the soils mapped on this property showed any variation from the published soil survey. A further consideration was a desire on the part of the landowner and the consulting forester to sufficiently characterize the soils present in order to explain the presence or absence of commercially viable tree species on certain mapped soils. *Agronomic Analytics* was also engaged to interpret soils information and provide estimates of the productive capacity of the tract. *Agronomic Analytics* conducted field visits on August 11, 19, 22, 24, 2005.

Agronomic Analytics examined the property for the following factors:

- Soil depth (actual and variation from published values)
- Extent and areal coverage of soil inclusions and rock outcrops
- Soil pH
- Soil moisture holding capacity (as influenced by soil texture)
- Present land use (absence or presence of specific vegetation to be noted)
- Environmental factors (aspect, slope, hydrology, other conditions)

This report contains a summary of the observations made during the site investigation, an interpretation of the results, and supporting published technical material. Data are summarized in the accompanying report and graphically displayed as reference maps. As there is no indication that any agricultural use is contemplated by the landowner, no estimates are made regarding agricultural productivity.

The object of the field investigations was to characterize the soil variation encountered if any, note any natural or manmade deviation from published soil series data, and identify apparent or potential vegetative trends. The open grasslands were examined in detail in order to identify if possible the factors influencing the potential for tree growth or the lack thereof.

This report and its findings are based upon my interpretation of the Soil Survey of Lane County Area, Oregon, 1987, SCS. It includes the examination and measurement of soil maps, field visits and soil sampling, soil tests conducted by *Agronomic Analytics*, and interpretation of current and historic aerial photography and earlier forest and vegetation inventories.

Detailed, site-specific analysis is always likely to find field variability that may differ slightly from published values. Intensive laboratory analysis beyond the scope of this survey may be necessary to further define phases of published soil series. The summaries below were made based upon the best professional judgment and conclusions of the investigator.

(2) Previous Mapping and Supporting Documentation

The earliest records of this area are the General Land Office Survey Notes of 1853 and 1859. At that time the land surveyors noted the presence of streams (perrenial or intermittant), types of vegetation present, and general site conditions or limitations. The surveyors were particularly interested in the usefulness of the land for agricultural purposes. Although some Euro-American settlement had occurred prior to the 1853 survey, pricipally on the choicest agricultural lands of the Willamette Valley proper, the surveys record the native vegetation present at the time of the surveys. It would be a mistake though to assume that the native vegetation recorded in the General Land Office Surveys represent the potential native climax vegetation possible for a particular site. This is especially true in the lowland and lower foothill regions of the Willamette Valley due to the anthropogenic activities of the Native Americans.

It is well documented that the Native American Indians of the Willamette Valley were engaged in routine burning of lands throughout their region. The principal reasons for the burning were to simplify their hunting of deer and concurrently to promote the growth of desirable native plants. The 1853 Survey notes only in the vacinity of the future location of the Dahlen Property along its eastern edge in Section 19 as being "2nd rate predominantly oak and fir timber" on "Rolling and Hilly Soils."

The soils of the subject property was mapped by the Natural Resource Conservation Service (formerly Soil Conservation Service) and published as the Soil Survey of Lane County Area, Oregon in 1987. An excerpt of the Soil Survey (Map No. 103) showing the subject property is provided in the attachments. Also consulted was an earlier soil survey published in 1925 by the USDA – Bureau of Chemistry and Soils.

The following maps are provided for historical reference:

- 1909 Historic Vegetation Survey
- 1936 Army Corps of Engineer Aerial Photography
- Oregon Geology
- USGS 7.5 Quadrangle Creswell (excerpt)
- USDA Soil Survey of Lane County Area, Map 103 (excerpt)

The following tables summarize the published values for the soils observed on the property. Explanations of technical terms are provided where necessary.

Table 1. Soil Properties - Capability Class & Slope Range (USDA, 1987)			
Map Unit	**Soil Name**	**Capability Class**	**Slope Range**
28C	Chehulpum silt loam	VIe	3 - 12%
41C	Dixonville silty clay loam	IIIe	3 - 12%
43C	Dixonville-Philomath-Hazelair Complex	VIe	3 - 12%
43E	Dixonville-Philomath-Hazelair Complex	VIe	12 - 35%
52D	Hazelair silty clay loam	IVe	7 - 20%
78	McAlpin silty clay loam	IIw	0%
102C	Panther silty clay loam	VIw	2 - 12%
105A	Pengra silt loam	IIIw	1 - 4%
108C	Philomath cobbly silty clay	VIe	3 - 12%
113C	Ritner cobbly silty clay loam	IVs	2 - 12%
113E	Ritner cobbly silty clay loam	VIs	12 - 30%
125C	Steiwer loam	IIIe	3 - 12%
125D	Steiwer loam	IVe	12 - 20%
135E	Willakenzie clay loam	IVe	20 - 30%
138E	Witzel very cobbly loam	VIs	3 - 30%
138G	Witzel very cobbly loam	VIs	30 - 75%

Capability class - A classification of a soil's limitations and potential. Ranges from I to VIII, with I the best and VIII the worst. The soils on this property are ranked:

- IIw – Soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices. The 'w' indicates that the soil is mainly limited due to water in or on the soil interferes with plant growth or cultivation.
- IIIe – Soils have severe limitations that reduce the choice of plants or that require special conservation practices, or both. The 'e' indicates that the soil is mainly limited due to a risk of erosion unless a close-growing plant cover is maintained.
- IIIw – Soils have severe limitations that reduce the choice of plants or that require special conservation practices, or both. The 'w' indicates that the soil is mainly limited due to water in or on the soil interferes with plant growth or cultivation.
- IVe – Soils that have very severe limitations that reduce the choice of plants or that require very careful management, or both. The 'e' indicates that the soil is mainly limited due to a risk of erosion unless a close-growing plant cover is maintained.
- IVs - – Soils that have very severe limitations that reduce the choice of plants or that require very careful management, or both. The 's' indicates that the soil is mainly limited due to shallowness, doughtiness, and/or stoniness.
- VIe – Soils that have severe limitations that make them generally unsuitable for cultivation. The 'e' indicates that the soil is mainly limited due to a risk of erosion unless a close-growing plant cover is maintained.
- VIs - Soils that have severe limitations that make them generally unsuitable for cultivation. The 's' indicates that the soil is mainly limited due to shallowness, doughtiness, and/or stoniness.

- VIw - Soils that have severe limitations that make them generally unsuitable for cultivation. The 'w' indicates that the soil is mainly limited due to water in or on the soil interferes with plant growth or cultivation.

Table 2. Soil Properties - Woodland Ratings (USDA, 1987)			
Map Unit	Soil Name	Woodland Site Indices	
		Predominant Tree	Site Index
28C	Chehulpum silt loam		
41C	Dixonville silty clay loam	Douglas fir	120
43C	Dixonville-Philomath-Hazelair Complex		
43E	Dixonville-Philomath-Hazelair Complex		
52D	Hazelair silty clay loam		
78	McAlpin silty clay loam	Douglas fir	159
102C	Panther silty clay loam		
105A	Pengra silt loam		
108C	Philomath cobbly silty clay		
113C	Ritner cobbly silty clay loam	Douglas fir	131
113E	Ritner cobbly silty clay loam	Douglas fir	131
125C	Steiwer loam		
125D	Steiwer loam		
135E	Willakenzie clay loam	Douglas fir	160
138E	Witzel very cobbly loam	Douglas fir	90
138G	Witzel very cobbly loam	Douglas fir	90

Woodland Productivity - This table shows the potential productivity of the soils for wood crops. Potential productivity of merchantable or common trees on a soil is expressed as a site index and as a volume number. The site index is the average height, in feet, that dominant and co-dominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that forest managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability. The volume of wood fiber, a number, is the yield likely to be produced by the most important tree species. This number, expressed as cubic feet per acre per year and calculated at the age of culmination of the mean annual increment (CMAI), indicates the amount of fiber produced in a fully stocked, even-aged, unmanaged stand. (see Woodland Site Index map in attachments)

The ability of soils to produce trees varies greatly. Tree growth is influenced by soil depth, texture, fertility, and the available water capacity. The kinds of trees that can be grown on a particular site is governed by elevation, aspect, soils, and climate. The of the root zone and the available water holding capacity of the soil are of major and critical importance in the growth of trees. Most forestland within the survey area does not provide suitable forage for livestock species.

Table 3. Soil Properties - Horizon Depth and Texture (USDA, 1987)				
Map Unit	**Soil Name**	**Depth (in)**	**Texture**	**Fragments (>3in)**
28C	Chehulpum silt loam	0 - 7	Silt loam	0
		7 - 13	Silt loam, clay loam	0 - 10
		13	Weathered bedrock	
41C	Dixonville silty clay loam	0 - 14	Silty clay loam	0 - 10
		14 - 26	Clay, cobbly clay	0 - 30
		26	Weathered bedrock	
43C, 43E	Dixonville-Philomath-Hazelair Complex			
	Dixonville silty clay loam	0 - 14	Silty clay loam	0 - 10
		14 - 26	Clay, cobbly clay	0 - 30
		26	Weathered bedrock	
	Philomath	0 - 6	Cobbly silty clay	15 - 30
		6 - 14	Clay, cobbly silty clay	0 - 30
		14	Weathered bedrock	
	Hazelair silty clay loam	0 - 11	Silty clay loam	0
		11 - 15	Silty clay, silty clay loam	0
		15 - 36	Clay	0
		36	Weathered bedrock	
52D	Hazelair silty clay loam	0 - 11	Silty clay loam	0
		11 - 15	Silty clay, silty clay loam	0
		15 - 36	Clay	0
		36	Weathered bedrock	
78	McAlpin silty clay loam	0 - 14	Silty clay loam	0
		14 - 60	Silty clay, clay	0
102C	Panther silty clay loam	0 - 10	Silty clay loam	0
		10 - 42	Clay	0
		42	Weathered bedrock	
105A	Pengra silt loam	0 - 6	Silt loam	0
		6 - 21	Silty clay loam	0
		21 - 60	Clay	0
108C	Philomath cobbly silty clay	0 - 6	Cobbly silty clay	15 - 30
		6 - 14	Clay, cobbly silty clay	0 - 30
		14	Weathered bedrock	
113C,E	Ritner cobbly silty clay loam	0 - 7	Cobbly silty clay loam	0 - 35
		7 - 32	Very gravelly silty clay	20 - 45
		32	Unweathered bedrock	
125C,D	Steiwer loam	0 - 16	Loam	0
		16 - 29	Clay loam	0 - 5
		29	Weathered bedrock	
135E	Willakenzie clay loam	0 - 11	Clay loam	0
		11 - 36	Silty clay loam	0
		36	Weathered bedrock	
138E,G	Witzel very cobbly loam	0 - 4	Very cobbly loam	30-45
		4 - 17	Very stony silty clay loam	50 - 60
		17	Unweathered bedrock	

Soil depth and texture are critical soil properties that influence the health, composition, and vigor of the vegetation growing. The depth of the soil is measured to the underlying bedrock.

In general, soil depth contributes significantly to plant vigor, along with texture and inherent fertility. Soils on Dahlen Property are mapped as having depths ranging from 13 to 60 inches. Soil investigations are limited to the top 60 inches of the soil. Site investigations conducted by *Agronomic Analytics* identified soil depths ranging from 5 to greater than 57 inches.

Soil texture refers to the particle size of the mineral composition of the soil. Soil texture has a direct relationship to plant growth, especially in a winter rainfall climate typical of the Pacific Northwest where plant growth is dependent upon stored soil moisture. The principal component minerals in decreasing size are: sands, silts, and clays. As soil particles decrease in size, the soil exhibits a greater ability to retain moisture. However, if too much soil is held then soils are subject to poorly drained conditions especially when they occur in low lying locations of the landscape. In order to promote optimal plant growth soils should combine good drainage with good moisture holding ability. Soils range from sandy soils which have the quickest drainage and the least moisture holding capacity to clays with the slowest drainage and the greatest moisture holding capacity. Loams and silt loams fall intermediary in characteristics.

The soils mapped on the Dahlen Property exhibit a range of textures from loams to silty and clay loams to clays. *Agronomic Analytics* identified soil textures consistent with the mapped values.

Table 3a. in the attachments provides the properties for the identified inclusions in the mapped soils of the Dahlen Property.

Table 4. Soil Properties - pH Values (USDA, 1987)

Map Unit	Soil Name	Depth (in)	pH
28C	Chehulpum silt loam	0 - 7	5.6 - 6.5
		7 - 13	5.6 - 6.5
41C	Dixonville silty clay loam	0 - 14	5.6 - 6.5
		14 - 26	5.6 - 6.5
43C, 43E	Dixonville-Philomath-Hazelair Complex		
	Dixonville silty clay loam	0 - 14	5.6 - 6.5
		14 - 26	5.6 - 6.5
	Philomath	0 - 6	5.6 - 6.5
		6 - 14	5.6 - 7.3
	Hazelair silty clay loam	0 - 11	5.6 - 6.5
		11 - 15	5.1 - 6.5
		15 - 36	5.1 - 6.5
52D	Hazelair silty clay loam	0 - 11	5.6 - 6.5
		11 - 15	5.1 - 6.5
		15 - 36	5.1 - 6.5
78	McAlpin silty clay loam	0 - 14	5.1 - 6.0
		14 - 60	5.1 - 6.0
102C	Panther silty clay loam	0 - 10	5.6 - 6.5
		10 - 42	3.6 - 6.5
105A	Pengra silt loam	0 - 6	5.6 - 6.0
		6 - 21	5.6 - 6.0
		21 - 60	6.1 - 7.3
108C	Philomath cobbly silty clay	0 - 6	5.6 - 6.5
		6 - 14	5.6 - 7.3
113C,E	Ritner cobbly silty clay loam	0 - 7	5.6 - 6.0
		7 - 32	5.1 - 6.0

125C,D	Steiwer loam	0 - 16	5.1 - 6.5
		16 - 29	5.1 - 6.0
135E	Willakenzie clay loam	0 - 11	5.6 - 6.5
		11 - 36	4.5 - 6.0
138E,G	Witzel very cobbly loam	0 - 4	5.6 - 6.5
		4 - 17	5.6 - 6.5

Soil pH is a measure of the acidity or alkalinity of a soil. A soil that tests to pH 7.0 is described as neutral in reaction. The degree of acidity or alkalinity is expressed as extremely acid when the pH is below 4.5 to very strongly alkaline when pH is 9.1 or higher. The reaction of a soil directly influences the type and growth of vegetation on that soil. Due to the high rainfall prevalent in the Pacific Northwest, soils are highly leached and acid in reaction. The native vegetation is well adapted to these acid conditions. Desirable pasture and crop species usually require more alkaline conditions. Soils on the Dahlen Property are mapped as ranging from predominantly strongly acid to slightly acid. *Agronomic Analytics* identified soil reactions on representative soils ranging from 4.6 to 5.0.

Table 5. Soil Properties - Soil Classification (USDA, 1987)

Map Unit	Soil Name	Taxonomic Class	
		Soil Order	Soil Family
28C	Chehulpum silt loam	Mollisols	Loamy, mixed, superactive, mesic, shallow Ultic Haploxerolls
41C	Dixonville silty clay loam	Mollisols	Fine, mixed, superactive, mesic Pachic Ultic Argixerolls
52D	Hazelair silty clay loam	Mollisols	Very-fine, mixed, smectitic, mesic Aquultic Haploxerolls
78	McAlpin silty clay loam	Mollisols	Fine, mixed, superactive, mesic Aquic Cumulic Haploxerolls
102C	Panther silty clay loam	Mollisols	Very-fine, smectitic, mesic Vertic Epiaquolls
105A	Pengra silt loam	Mollisols	Fine-silty over clayey, mixed over smectic, superactive, mesic Vertic Epiaquolls
108C	Philomath cobbly silty clay	Mollisols	Clayey, smectitic, mesic, shallow Vertic Haploxerolls
113C,E	Ritner cobbly silty clay loam	Inceptisols	Clayey-skeletal, superactive, mesic Typic Haploxweepts
125C,D	Steiwer loam	Mollisols	Fine-loamy, mixed, superactive, mesic Ultic Haploxerolls
135E	Willakenzie clay loam	Alfisols	Fine-loamy, mixed, active, mesic Ultic Haploxeralfs
138E,G	Witzel very cobbly loam	Mollisols	Loamy-skeletal, mixed, superactve, mesic Lithic Ultic Haploxerolls

Soil classification and taxonomy is a rigorous methodology that classifies soils in a hierarchy and in order to establish relations between soils and with one another.

Table 6. Soil Properties - Total Available Soil Moisture (calculated by Agronomic Analytics)			
Map Unit	**Soil Name**	**Soil Depth (in)**	**Total Available Water (in/profile)**
28C	Chehulpum silt loam	13	2.6
41C	Dixonville silty clay loam	26	4.5
43C,E	Dixonville-Philomath-Hazelair Complex		
	Dixsonville	26	4.5
	Philomath	14	2.1
	Hazelair	36	4.7
52D	Hazelair silty clay loam	36	4.7
78	McAlpin silty clay loam	60	10.2
102C	Panther silty clay loam	42	6.6
105A	Pengra silt loam	60	8.5
108C	Philomath cobbly silty clay	14	2.1
113C,E	Ritner cobbly silty clay loam	32	4.2
125C,D	Steiwer loam	29	5.5
135E	Willakenzie clay loam	36	6.3
138E	Witzel very cobbly loam	17	2

Soil available moisture is a critical limiting factor influencing the adaptability of plants and the suitability of certain soils for desirable species. Because native species (e.g. Douglas fir) are adapted to the prevalent winter rainfall pattern, the moisture stored in the soil at the beginning of the growing season greatly influences the health and vigor of the plants growing there. Table 6. above clearly shows that the shallow soils (those with soil depths less than 30 inches) on the Dahlen Property (28C, 41C, 108C, 125C, 125D, and 138E) generally only have half or less of the total available soil moisture in the soil profile than the deeper soils on the property. This has a direct bearing on the ability of these soil to support healthy tree growth.

(3) Report Methodology

(a) Order of Survey

Orders of soil surveys are described as the level of detail that is mapped and sampled in the survey. Orders range from 1st Order surveys up to and exceeding 5th Order surveys. First order surveys are very intensive (i.e. experimental plots, individual building sites), with soil map unit delineations of less than 2.5 acres, and at scales of 1:15,840. Fifth order surveys are very extensive (i.e. regional planning, countrywide surveys), delineations range from 750 to greater than 10,000 acres. Scales for fifth order surveys can be as small as 1:1,000,000.

The published Soil Survey of Lane County would be described as generally a 2nd order survey. It is typically useful for general agriculture and urban planning. The minimum areas delineated range from 2 to 4 acres. The survey is mapped at a scale of 1:20,000 or 3.168 inches per mile.

The recommended scale for intensive land use studies is 1:5000. On the 387 acres under study on the Dahlen Property this would require a sampling rate of approximately 1 soil sample per acre. *Agronomic Analytics* chose to concentrate sampling in the open areas and within in those areas mapped as Witzel, Chehulpum, Steiwer, Pengra,

McAlpin and the Dixonville-Philomath-Hazelair Complex. Areas with existing forest cover were generally not sampled. Samples were taken though in the higher elevation areas mapped as Ritner and Witzel soil series within forested areas. The most detailed maps supplied in this report are at a scale of 17 inches to the mile.

The number of samples chosen for this investigation was based upon field examination and selection deemed sufficient to support the purposes outlined above. Samples were selected in areas representative of the mapped soil series with regard to topography and surface appearance. Samples were typically selected towards the center of the soil map units in order to minimize potential edge effects.

(b) Field Investigation Dates

Field investigations were conducted on August 11,19, 22, 24, 2005. Conditions were consistent with clear, dry, and warm conditions. Preceding seasonal conditions were at the outer bounds of observed norms for the area. Winter rainfall was significantly below normal, however spring rainfall was above normal, especially for the month of May. The investigator recorded rainfall for the month of May at his base of operations in South Hills of Eugene at twice the long term average for the May. Rainfall for the preceding month of July was twice the ten year average, however no precipitation was recorded for the month of August at the time of the site investigations. Annual and perennial grass vegetation was mature and dry. Soils were dry and granular. Slight soil moisture was encountered on several of the deeper test holes at depths of two feet or deeper. There was no observed standing water. Spencer Creek was dry.

Table 7. Photographic Record Descriptions

Figure Number	Title	Description
Panorama No. 1	South Facing Hillside Slope	Floodplain to toeslope to steep, dry hillside
Panorama No. 2	Midslope Area	Chehulpum and Steiwer series
No. 1	Landscape at AH # 7	Toeslope above floodplain
No. 2	Auger Hole # 7	Mapped as Hazelair series
No. 3	Landscape at AH # 9	Area of Witzel looking towards Steiwer
No. 4	Auger Hole # 10	Mapped as Steiwer series but deeper inclusion
No. 5	Landscape at AH # 10	Steiwer series with young colonizing trees
No. 6	Landscape at AH # 19	Looking towards Pengra floodplain soil
No. 7	Auger Hole # 12	Floodplain influenced Hazelair series
No. 8	Landscape at AH # 16	Typical Chehulpum series landscape
No. 9	Auger Hole # 17	Chehulpum series

Cell Phones

Allison, Peder	954-2499	Hoffman, Chad	954-3807	Rice, Rob	954-8770
Anderson, Dan	999-9766	Hoover, Craig	954-9295	Russell, Mike	954-4363
Armstrong, Mike	954-6440	Humphrey, Kim	954-2700	Saari, Carmin	999-9770
Banyas, Kirsten	954-7979	Hurley, Dan	954-1935	Sather, Dennis	968-7979
Bishop, Jeff	954-7447	Ingram, Dan	954-0563	Schumacher, Dan	206-7484
Bordeaux, Denny	954-1146	Jackson, Mike	954-6968	Schumacher, Orin	228-5679
Bothel, Bruce	954-6661	Jones, Kyle	954-7780	Schussler, Howard	556-2249
Bourland, John	285-8170	Kingsley, Dave	954-1397	Shankle, Bill	285-8168
Bowen, Todd	954-2567	Knoll, Duane	954-8678	Skinner, Ken	285-8177
Boyle, Greg	285-8167	Knox, Katrinka	285-8564	Smith, Dolores	954-9559
Brown, Dave	954-3550	Lalich, Rick	954-7774	Smith, Jeff	285-8164
Burgess, Jane	954-2108	Lang-Byers, Penny	953-4380	Snowden, Ollie	954-3549
Card, Dave	954-2337	Langdon, Michelle	953-6434	Soliz, Armando	912-1059
Carson, Kit	968-1689	Leatham, Scott	285-8173	Sorenson, Jana	954-7781
Chastain, Ed	954-6637	Lindgren, Linda	912-9094	South, Kim	954-4644
Chickering, Sonny	225-8132	Manewal, Bill	285-8166	Starkey, Suzanne	228-5731
Clauson, Mollie	954-7479	Martin, Bill	359-7839	Steers, Jim	954-7903
Corcoran, Michael	968-7982	Marx, Tom	954-5174	Stinchfield, Tom	914-7196
Cummings, Bill	954-8199	Mathews, Steve	228-5536	Stinger, Cal	999-9772
Daniels, Ed	285-8169	Mathison, Jay	954-8805	Stroda, Jim	954-2818
Diess, Ken	954-7553	Matthews, John	954-0044	Strunk, Don	954-0616
Ditgen, Mark	968-7981	Mayfield, Eric	954-0787	Tanner, Rick	225-8427
Farstad, Cory	285-8221	McIntyre, Scot	954-8596	Thorpe, Joe	999-9771
Ficek, Chad	954-4312	Mladenich, Brian	915-6295	Thurman, Bob	954-2499
Franklin, Jim	968-7984	Morgan, Bill	954-6650	Towery, Jeff	913-2904
Ehlers, George	954-8803	Morris, John	285-8163	Warkentin, Rick	968-7978
Frazee, Skip	954-1786	Murray, Bob	285-8636	Weck, Gary	954-3386
Gibbs, Larry	954-6344	Myers, Craig	968-7986	Whitney, Nina	954-0204
Gilmore, Bob	556-5601	Nelson, Arno	285-8165	Wilson, Bob	954-4227
Glenn, Chris	954-0797	Nichols, Steve	954-0040	Winter, Todd	954-8243
Grenz, Todd	954-1188	Nickell, Don	954-5749	Wobbe, Dave	954-0035
Grimm, Sarah	954-7047	Osborne, Loralyn	285-6205	Wood, Dan	915-0259
Grossman, Keith	285-8696	Owen, Jared	968-7987	Wurster, Eric	968-7983
Guyette, Phil	206-4481	Petsch, John	954-1527	Young, Carolyn	954-3548
Hall, Greg	954-8877	Plaep, Bruce	999-9768		
Hansen, Don	954-6984	Randall, Darrell	285-8171	Fleet (Parts)	954-2315
Hansen, Patti	915-7522	Reed, Brenda	954-9511	Mapleton WMD Site	953-0217
Heaton, Tanya	556-8722	Remont, Rich	954-1318		

7/06

Pagers

Chastain, Ed (A)	710-2707
Dahlen, Tom	710-4089
Kletzok, Melinda	341-2483
McCartney, Howard	710-9507
Electricians (A)	710-2009

(A) = Alpha Pager

7/06

Cell Phones & Pagers

Public Works

No. 10	Auger Hole # 11	Mapped as Chehulpum, very shallow, more as Witzel

(b) Observation Methodology

A wide range of observations were conducted in order to characterize the landscape and soils present. Historical soil surveys, aerial photography and vegetation surveys were consulted (see maps in the attachments) in order to detect trends in vegetative cover. An initial field observation was conducted in order to detect vegetation patterns and determine representative soils present. This survey was conducted on 8/11/05. Also general site conditions were observed at this time.

An intensive examination of representative sites (both forested and open grassy areas) was conducted on 8/19/05. Auger holes were dug until bedrock was struck or to a depth of 60 inches on 8/19,22,24/05. Sites were chosen based upon their position in the landscape, vegetative cover present, and the published soil mapping. The results of field sampling are displayed as tables in the attachments. General site evaluations were conducted that characterized important ecological site conditions of climate, topography, hydrological conditions and vegetation. Individual site assessments are summarized in the site evaluation forms in the attachments.

Representative soil samples were collected at all auger sites. Samples were collected sufficient to distinguish horizonal difference in texture, color, and structure. Especially noted was the depth to either fractured or weathered bedrock. Soil pH tests were conducted on the A horizon of the collected samples. Observations of collected samples were compared with published values for the soil series mapped on the property.

(d) Observed Limitations

Soils were examined with the goal of determining the extent of any limitations present to the growth of desirable tree species. The principal question asked was what if anything is preventing the growth of desirable tree species on the large, grassy open area in the center of the property. This open areas are primarily mapped as Chehulpum, Dixonville, Philomath, Hazelair, McAlpin, Panther, Pengra, Steiwer and Witzel soil series. They range from deep, nearly level floodplain soils (e.g. McAlpin, Panther, and Pengra series) to shallow and steep soils on the hillsides (e.g. Chehulpum, Philomath, and Witzel series). The remaining soils (the Dixonville, Hazelair and Steiwer) occur predominantly on the lower toeslopes between the floodplain and the hillsides.

This landscape can be clearly seen in Panorama No. 1 in the photographic record. These soils all include inclusions of deeper or shallower soils than the predominant soil map unit. The investigation conducted by *Agronomic Analytics* sought to identify the limitations, if any to the growth of trees in the open areas. Certain soils within the open areas are unrated for timber production. Other soils are rated for potential tree production but are currently without appreciable tree growth. The observed pattern of vegetative cover has been influenced by both natural and manmade influences.

Table 8. below summarizes the silvicultural requirements for Douglas fir. One can observe in particular that Douglas fir grows poorly on shallow soils, germinates poorly

in grassy, overgrown areas, and is especially subject to lethal conditions on hot, dry aspects. The large open, grassy areas of this property, especially those on the hillsides with south and west exposures exceeds the limiting conditions and consequently is severely limited for the propagation and survival of desirable tree species based upon these published values.

Table 8. Douglas Fir Silvicultural Requirements	
Regimes	Moderate Temperatures & Moisture
Growth Limitations	Poor growth on shallow soils or over high water tables
Climate	Mild, humid climate, dry summers
Temperature	Average annual temperatures: 45 - 55 degrees F
Precipitation	Annual precipitation: 35 - 200 inches/yr.
Elevation	Sea level - 1,500 ft
Reproduction	Reproduction difficulties - germination & survival best on mineral soils. Natural restocking low due high soil temperature. Seedling failures after clearcutting caused by temperature extremes.
Limitations	Lethal conditions - soil surface temperature above 140°F common on south slopes in late spring and summer. Temperatures are usually too high on sunlit seedbeds of organic matter
Shade Tolerance	Medium shade tolerance, Young Douglas fir seedlings require 1/3 full sunlight to achieve maximum photosynthesis. 50% shade required on worst sites for best survival.
Soil Quality	Presence of soil aggregations improves long term productivity. Shallow soils generally do not support productive forests.

(4) Results, Findings, and Decisions

(a) Geologic Setting and Overview

The fundamental geology of this area is well understood and has been extensively described. Several types of bedrock were encountered during the course of this investigation. Commonly occurring fractured basalt and weathered tuffaceous materials were observed. The property is primarily underlain by basaltic flows of the Fisher Formation (Tfeb described below). The fractured and weathered bedrock encountered in this investigation conformed to the published basalt and sandstones described for these soils.

Cascade Range – Consolidated Deposits (see Geology Map in Attachments)

Tfe - Fisher Formation, undivided (Oligocene and Eocene) – Predominantly

continental volcaniclastic[1] rocks, including andesitic[2] lapilli[3] tuff[4], breccia[5], water-laid and air-fall silicic[6] ash, and interbedded basaltic flows. The upper part of the upper Eocene and Oligocene Fisher Formation apparently laps onto and interfingers with the Eugene Formation.

Tib – Diabase and Basalt Intrusions – Pliocene, Miocene, and Oligocene? Sills, plugs and dikes of basaltic andesite, basalt, and andesite; mostly represents feeders, exposed by erosion, for flows and flow breccias of units Tba and Trb

Tfee – Eugene Formation (Oligocene and Eocene) – Thin to moderately thick bedded, coarse to fine-grained arkosic[7], micaceous[8], and, locally, palagonitic[9] sandstone and siltstone, locally highly pumiceous[10], assigned to the upper Eocene to middle Oligocene, marine Eugene Formation. Intruded by mafic[11] sills, dikes, and plugs, that in a few places, have been radiometrically dated at about 30 Ma. In Coburg Hills, north of Eugene, this unit is overlain unconformably by continental volcanogenic rocks, including an ash-flow tuff radimetrically dated at 30.9 ± 0.4 Ma.

(b) Landforms and Topographical Relationships

This property is characterized by two general type of geographic features. The first is convex low and rolling hills dissected by intermittent streams. Hills range from gently sloping to steep. Slopes range from 2 to greater than 75 percent. Hill soil are generally thin, skeletal and shallow to bedrock. The second general landform is the floodplain along Spencer Creek. This area is level to gently sloping with slopes of 0 to 6 percent. The soils in the floodplain formed from silty and clayey alluvium. Associated with these general settings are areas of swales, concave slopes and slump benches where deeper soils are deposited. Significant portions along the rolling ridgetops of the steeper landform is classified as the Looney geomorphic surface which is described as completely dissected and predominantly steeply sloping.

(c) Local Hydrological Conditions

This property is dissected by small, intermittent streams. There were no areas of standing water observed. Spencer Creek was dry. Soil drainage and permeability ranges from poorly drained and very slow permeability in the Panther, Hazelair, and Pengra series to the moderately well drained with moderately slow permeability of the McAlpin series to the well drained soils of the Philomath, Dixonville, Chehulpum,

---

[1] Volcaniclastic -
[2] Andesitic – A common volcanic rock intermediate in composition between basalt and rhyolite.
[3] Lapilli -
[4] Tuff – A rock formed of compacted volcanic ash.
[5] Breccia – A rock made of highly angular, coarse fragments.
[6] Silicic – Silicon dioxide; when it occurs as a mineral, it is called quartz.
[7] Arkosic – A sandstone rich in feldspar minerals.
[8] Micaceous – A family of common minerals which may be either black or colorless but are always flaky.
[9] Palagonitic -
[10] Pumiceous -
[11] Mafic sills- A thin sheet of igneous rock sandwiched between layers of sedimentary rock.

Ritner, Steiwer, Willakenzie, and Witzel series that slow to moderately slow permeability.

The floodplain soils exhibit high water tables during the winter rainy season and are subject to ponding and flooding.

The open, grassy areas of the property are characterized by steep, south facing slopes. The shallow soils of these areas generally have little water holding capacity. These slopes in combination with the shallow soils present this location contribute to the hot, dry and droughty conditions of this area.

(d) Revised Soil Mapping Units Characterization

Revision of the existing soil mapping units was beyond the scope of this survey. The primary purpose of the survey was to identify the existing variability in soil depth. Insufficient sampling was undertaken to map the soils to the level of a 1st Order Survey. No revisions are made to existing soil mapping units. However significant variability was noted in the field observations.

(e) Soil Mapping Unit Tabulation

Soil map unit tabulation is for both parcels:

Table 9. Existing Soil Mapping Unit Acreage

Map Unit	Soil Name	Acreage	
		18-04-24 #300	18-03-19 #1300
28C	Chehulpum silt loam	79.7	
41C	Dixonville silty clay loam	12.2	9.0
43C	Dixonville-Philomath-Hazelair Complex	10.2	3.0
43E	Dixonville-Philomath-Hazelair Complex	28.4	23.7
52D	Hazelair silty clay loam	13.9	
78	McAlpin silty clay loam	15.0	
102C	Panther silty clay loam	34.5	14.5
105A	Pengra silt loam	11.6	
108C	Philomath cobbly silty clay	9.8	2.0
113C	Ritner cobbly silty clay loam	0.4	
113E	Ritner cobbly silty clay loam	0.1	
125C	Steiwer loam	9.0	
125D	Steiwer loam	4.0	
135E	Willakenzie clay loam	27.4	
138E	Witzel very cobbly loam	27.3	11.0
138G	Witzel very cobbly loam	37.0	4.0
	Total	**320.5**	**67.2**

Table 10. Existing Mapping Unit Soil Capability Class Acreage					
Map Units	Capability Class	Acreage		Percentage	
		TL # 300	TL # 1300	TL # 300	TL # 1300
78	II	15.0		4.7	
41C,105A,125C	III	32.8	9.0	10.2	13.4
52D,113C,125D,135E	IV	45.7		14.3	
28C,43C,43E,102C, 108C,113E,138E,G	VI	227.2	58.2	70.8	86.6
	Totals	**320.5**	**67.2**	**100.0**	**100.0**

(5) Summary and Conclusions

Detailed descriptions of the individual sample sites can be found on the site evaluation forms and field observation summaries in the attachments. Soils conform in general to the mapped data in the published Lane County Area Soil Survey (1987, USDA Soil Conservation Service). However as noted in the auger hole summaries some soils matched the published descriptions others exhibited a wider range in characteristics than the published values. Texture and stoniness in the field were as reported in the soil survey. The greatest variation noted was in the Steiwer and Chehulpum series. Areas of the Steiwer series that were contiguous with the Spencer Creek floodplain evidenced greater soil depth than the published data for the series and its inclusions. Significant areas of the Chehulpum series in the open areas were thin and shallow and at the lower range for the series' published soil depth data. Sample sites taken in the Witzel series indicate that it was at the very lowest range for the depth to bedrock feature.

Table 11. Published and Observed Soil Depths			
Map Unit	Published Soil Depth	Auger Holes	Observed Soil Depth
138G - Witzel	17 inches	AH # 1	13 inches
		AH # 2	14 inches
		AH # 6	13 inches
		AH # 9	11 inches
28C - Chehulpum	13 inches	AH # 3	18 inches
		AH # 4	18 inches
		AH # 5	5 inches
		AH # 8	28 inches
		AH # 11	11 inches
		AH # 16	7 inches
		AH # 17	21 inches
		AH # 18	23 inches
52D - Hazelair	36 inches	AH # 7	20 inches
43E – DPH Complex	14 – 36 inches	AH # 12	57 inches
125C - Steiwer	29 inches	AH # 10	57 inches

		AH # 19	10 inches
78 - McAlpin	60 inches	AH # 13	12 inches
		AH # 14	27 inches
105A - Pengra	60 inches	AH # 15	24 inches

The pattern of forest cover on the property was found to follow closely the presence of deeper soils on the property. Within the open grassland areas, which appear to have been open areas since the earliest documented observations, most of the soils mapped within these areas are unrated for timber production. The only significant exceptions are the floodplain Dixonville and McAlpin soils and the Witzel on the higher slope. The floodplain soils in the absence of mechanical mowing (runway area) are likely to reforest with typical hydrophilic trees such as willows, alders, ashes, and their associated brush , grasses, and forbs. The Witzel soils of the midslope and higher are rated for timber production and some timber is evidenced on these soils at the highest elevations along the ridgetops. This appears where the Witzel soils are in close association with the Ritner soils. Those areas of the Witzel that do not now support trees and appear not to have had for the last 100 years at least are especially shallow and subject to excessively hot and dry conditions due to their predominantly south aspect. Also apparent on these steep slopes are evidence of severe past erosion. Rills and exposed mineral soils are readily visible.

The soils on the fields examined are currently being used to their highest best use if used for resource production. If it was desired to manage the open areas for pasture production, the productive value of the pastures could be improved through the use of moderate fertilization, liming, and weed control. This however would be expensive and difficult to accomplish. The Witzel very cobbly loam is rated for available AUM's in the soil survey at 2 AUMs if in excellent condition, however in the judgement of this investigator the condition is so poor that these lands are unsuitable for agricultural production.

The soils on this property are absolutely unsuitable for cultivation and production of any agronomic (grass seed, small grains, row crop), high value fruit and vegetable, wine grapes, or nursery crops. They are at best only marginally suited for pasture and small woodlot production on the better soils. The areas of slightly better soils along the floodplain can be used for possible hardwood tree production.

The overwhelming majority of the soils are rated as predominantly Class VI in the USDA Land Capability Classification system. They are severely limited for uses other than permanent cover. They have limited water holding capacity, shallow rooting depth and have high hazards for erosion and potential runoff. Less than 27 percent of the entire property is in Class IV or better.

In conducting this site investigation the following additional vegetative and soil conditions were also observed: areas of invasive brush (scotch broom, blackberries, and poison oak).

This property is unsuited for intensive, commercial agricultural purposes. It is composed of thin, poor soils with little potential for high value production. It is incapable of supporting any significant commercial agricultural. Even with a high level of management and agricultural inputs the expected rates of return would be insufficient to support a commercial operation.

No estimates are made in this report on the value and possible returns that could be expected with modern timber management.

(6) References of Preparer and Literature Citations

Literature Cited

Patching, W.R. 1987. Soil Survey of Lane County Area, Oregon. USDA Soil Conservation Service. U.S. Government Printing Office. Washington, DC.

Retallack, G.J. et al. 2004. Eocene-Oligocene extinction and paleoclimatic change near Eugene, Oregon. GSA Bulletin. 116:7/8 p. 817-839.

Soil Survey Division Staff. 1993. Soil Survey Manual. USDA Handbook No. 18. U.S. Government Printing Office. Washington, DC.

Walker, G.W. and R.A. Duncan. 1989. Geologic Map of the Salem 1° by 2° Quadrangle, Western Oregon.. Miscellaneous Investigations Series. Map I-1893. U.S. Geological Survey. Washington, D.C.

(7) Attachments

(a) Dahlen Property Photographic Record

(b) *Agronomic Analytics* Statement of Qualifications

(c) Location Map (1:85,000)

(a) Landuse Map (1:13,000)

(b) 7.5 Topographic Quadrangle (Creswell) w/ NRCS Soils Map (1:13,000)

(c) Soil Map Units Map (1:13,000)

(b) Site Investigations Augerhole Locations (1:13,000)

(c) Soil Map Units w/ Augerhole Locations (1:4,600)

(d) Observed Soil Depths (1:13,000)

(e) Woodland Site Index Ratings (1:13,000)

(f) Elevation and Aspect Description Map (1:13,000)

(g) Historic Vegetation 1909 Map (1:13,000)

(h) Local Geology (1:13,000)

(i) Site Evaluation Forms

(j) Summarized Field Notes

(k) Mapped Soil Units and Inclusions

Property	Dahlen Property			Conditions: Predominantly hot, dry, sunny, and clear					
Date	8/19, 22, 24/2005								
Location	Auger Hole	Depth (in)	Colour	Texture	Description	Vegetation	Slope/length	Mapped Series	Notes
Site A	AH # 1	Surface				Annual grasses, scattered oaks	30% - 100 ft.	138G	Convex slope
		0 - 3	Dark brown to Reddish brown	Silty loam					Shallow Witzel with previously eroded surface
		3 - 8	Grayish brown		Small rocks present				
		8 - 13	Lighter grayish brown, yellowish to dark reddish brown	Clay loam	Slight moisture				
		13			Bedrock				
Site A	AH # 2	0 - 2	Dark reddish brown	Silty loam	Very thin duff	Fir trees (6-14"), oaks (18")			In trees, approximately 50' up slope from AH # 1, conforms to Witzel
		2 - 14	Dark reddish brown		Fewer and deeper rocks than AH # 1, moister				
		14			Bedrock				
Site B	AH # 3	0 - 3	Dark Grayish brown	Silt loam		Grasses, forbs	3% - 200	28C	Deeper than mapped series, similar to Philomath
		3 - 15	Grayish brown		Some mottles Red & black mottles				
		15 - 17	Lighter gray						
		18			Bedrock				
	AH # 4				25 ft. east of AH # 3				Same as AH # 3
Site B	AH # 5	0 - 5	Grayish brown	Silt loam	Very cobbly on surface	Thin annual grasses	Nearly level	28C	At lowest range of Chehulpum
		5			Rock				
Site C	AH # 6	0 - 3	Dark brown	Silt loam	Small pebbles	Annual grasses	33% - 150 ft.	138G	Soil surface evidences rilling, Stony (10 - 15%) all over surface, conforms to Witzel, eroded
		3 - 8	Reddish brown	S silty clay loam	2 in. rocks				
		8 - 13	Grayish		Stony				
		13			Fractured bedrock				
Site C	AH # 7	0 - 3	Dark brown/blackish			Grasses/forbs	15% - 100	52D	Lower toeslope, more like Dixonville inclusion
8/22/2005		3 - 8	Dark brown						
		10 - 15	Lighter brown		more massive, some red streaks				
		15 - 17	Lighter brown		More red, some small stones				
		20			Bedrock, tannish red				
Site C	AH # 8	0 - 7	Dark brown, grayish	Silty clay		Grasses, forbs, teasel, blackberry	10% - 150 ft.	28C	Stony (2-5%) surface, closer to Steiwer inclusion
		7 - 15	Dark brown	Silty clay	Less gray, moister				
		15 - 23	Dark brown						
		23 - 27	Dark brown						
		28			Bedrock				
Site C	AH # 9	0 - 4	Light brown			Grasses, forbs	30% - 100 ft.	138G	Witzel, eroded
		4 - 11	Light brown		Slightly lighter				
		11			Bedrock				
Site D	AH # 10	0 - 8	Very dark brown	Silt loam		Grasses, forbs, young pine & deciduous trees	15% - 200 ft.	125C	Deeper then Steiwer or any inclusions, more typical of floodplain below, Panther
		8 - 11	Lighter grayish brown		Red & yellow streaks				
		11 - 17		More clay					
		17 -28	Lighter		More yellowish, gritty				
		28 - 54	Grayish	Clay	Slightly pinkish, clayey				
		54 - 57	Slightly more reddish		no bedrock				

Location	Auger Hole	Depth (in)	Colour	Texture	Description	Vegetation	Slope/length	Mapped Series	Notes
Site C	AH # 11	0 - 11	Reddish brown	Silty loam	West face of knoll	Poor thin grass	12% - 50 ft.	28C	Witzel, thin, shallow, eroded surface
		11			Rock				
Site E	AH # 12	0 - 5	Dark grayish brown	Silty clay		Grasses, forbs	2% - 150 ft.	43E	Closest to Hazelair, more like floodplain inclusions - Panther, Dupee
8/24/2005		5 - 8	Dark grayish brown	small stones	moister				
		10	Dark brown		Tan streaks & white particles				
		12 - 32	Slightly lighter gray		Black specks				
		32 - 41	Lighter brown	clay	some pinkish gray				
		42			gritty, some pebbles				
		42 - 46	Light brown	clay					
		57	Light brown	clay	some small pebbles, no bedrock				
Site E	AH # 13	0 - 6	Brown	Silty clay	Possible cut & fill	Mown grasses	5% - 300 ft.	78	Runway area, possibly cut and leveled
		6 - 12	Brown						
		12			Bedrock				
	AH # 13a				Same as AH # 13				15 ft. North of AH # 13
	AH # 13b				Same as AH # 13				30 ft South of AH # 13
		11			Bedrock				
Site E	AH # 14	0 - 8	Dark grayish brown	Silty clay loam	Some tan/yellowish streaks	Mown grasses	2% - 150 ft.	78	West end of runway, Much soil surface cracking to 1 foot, shallower than series or any inclusions
		8 - 16	Dark grayish brown	clayey	slightly lighter				
		16 - 22	Dark grayish brown		some black, dark brown, & yellow specks				
		22 - 27	Slightly lighter brown		Many yellow, brown, white specks, rocks				
		27			bedrock				
Site E	AH # 15	0 - 6	Dark grayish brown	Silt loam		Mown grass	1% - 150 ft.	105A	Shallower than mapped series, similar to Hazelair
		8 - 22	Slightly lighter brown	Clayey	Yellow, reddish brown, black streaks				
		22 - 24			Bedrock				
Site F	AH # 16	0 - 4	Dark brown	Silt loam		Annual grasses	15% - 100 ft.	28C	AH # 16 - 18 conform to mapped series across range of characteristics
		4 - 7	Dark brown						
		7			Bedrock				
	AH # 16a	0 - 7	Dark brown	Silt loam		Annual grasses		28C	8 ft North of AH # 16
		7 - 12	Slightly lighter						
		12			Bedrock				
Site F	AH # 17	0 - 12	Dark brown	Silt loam	Same as AH # 16	Annual grasses		28C	North aspect
		12 - 21	Lighter brown						
		21			bedrock				
	AH # 18	0 - 23	Dark brown	Silt loam	Same as above	Annual grasses			West aspect
		23			Bedrock				
	AH # 19	0 - 4	Reddish Brown	Silty loam		Grasses, forbs	15% - 100 ft.	125D	Rock outcrops across the surface
		4 - 10	Reddish Brown						
		10			Bedrock				

Agronomic Analytics

3419 Chaucer Way
Eugene, Oregon 97405
541-684-8000

Site Evaluation
Name: Karen Dahlen Date: 8/19/05 Field # Site A
Site Description: Upper, steep slope, sheltered, scattered oaks and poison oaks

Climate:
Air Drainage: Poor Solar Radiation: Fair Wind: Sheltered
Avg. Precipitation: 40 to 60 inch Avg. Temperature: 50° to 54° F.

Site Characteristics:
Topography: Steep Elevation: 980 ft. Aspect: SW
Microclimate: Sheltered, hot and dry, droughty

Mapped Soil Characteristics:
Series: 138G Witzel Inclusions: Jory, Nekia, Philomath, Ritner, Rock Outcrops
Drainage: Well drained Ponding: N/A
Texture: Very cobbly loam Restrictive Layers: Shallow to bedrock
Soil Depth: 12 to 20 inches
Water Holding Capacity: 1.6 to 2.4 inches
pH: 4.6 AH # 1 Surface Layer
Nutrients: _____ N _____ P _____ K _____ B _____

Water Characteristics:
Irrigation Available: N/A
Water Quality: _____
Adequacy: _____

Vegetation:
Present Vegetation: Annual grasses, forbs, scattered oaks, poison oaks
Hydrophyllic: N/A

Limiting Factors:
Growth: Greatest limiting factor is soil depth and dry, south facing slopes
Ripening: _____
Growing Degree Days: _____
Frost Hazard: _____

Notes: This semi-open area is evident in the earliest aerial photography (1936) and in the historic vegetation survey (1909). Areas have limited soil depth



Agronomic Analytics

3419 Chaucer Way
Eugene, Oregon 97405
541-684-8000

Site Evaluation
Name: Karen Dahlen Date: 8/19/05 Field # Site B
Site Description: Open, semi-level bench, annual grasses, few scattered trees

Climate:
Air Drainage: Poor Solar Radiation: Good Wind: Closed bowl
Avg. Precipitation: 40 to 60 inch Avg. Temperature: 50° to 54° F.

Site Characteristics:
Topography: Level to moderate slope Elevation: 770 ft. Aspect: S→SW
Microclimate: Open, semi-level bench with moderate environment

Mapped Soil Characteristics:
Series: 28C Chehulpum Inclusions: Hazelair, Philomath, Steiwer, Willakenzie, Witzel
Drainage: Well drained Ponding: N/A
Texture: Silt loam Restrictive Layers: Shallow to bedrock
Soil Depth: 12 to 20 inches
Water Holding Capacity: 2.4 to 2.8 inches
pH: 4.7 AH # 3 Surface Layer
Nutrients: N P K B

Water Characteristics:
Irrigation Available: N/A
Water Quality:
Adequacy:

Vegetation:
Present Vegetation: Annual grasses, forbs, scattered hardwoods
Hydrophyllic: Some sedge areas

Limiting Factors:
Growth: Greatest limiting factor is soil depth and droughtiness
Ripening:
Growing Degree Days:
Frost Hazard:

Notes: This semi-open area is evident in the earliest aerial photography (1936) and in the historic vegetation survey (1909). Areas have limited soil depth.



Agronomic Analytics

3419 Chaucer Way
Eugene, Oregon 97405
541-684-8000

Site Evaluation
Name: Karen Dahlen Date: 8/19/05 Field # Site C
Site Description: Open, steep, south facing slope, annual grasses, few scattered trees

Climate:
Air Drainage: Good Solar Radiation: Excellent Wind: Open westerly
Avg. Precipitation: 40 to 60 inch Avg. Temperature: 50° to 54° F.

Site Characteristics:
Topography: Steep slope Elevation: 900 ft. Aspect: S→SW
Microclimate: Open, steep slope with hot, dry environment

Mapped Soil Characteristics:
Series: 138G Witzel Inclusions: Jory, Nekia, Philomath, Ritner, Rock Outcrops
Drainage: Well drained Ponding: N/A
Texture: Very cobbly loam Restrictive Layers: Shallow to bedrock
Soil Depth: 12 to 20 inches
Water Holding Capacity: 1.6 to 2.4 inches
pH: _____
Nutrients: _____ N _____ P _____ K _____ B _____

Water Characteristics:
Irrigation Available: N/A
Water Quality: _____
Adequacy: _____

Vegetation:
Present Vegetation: Thin annual grasses, forbs, few scattered hardwoods
Hydrophyllic: _____

Limiting Factors:
Growth: Greatest limiting factor is soil depth and droughtiness
Ripening: _____
Growing Degree Days: _____
Frost Hazard: _____

Notes: This semi-open area is evident in the earliest aerial photography (1936) and in the historic vegetation survey (1909). Areas have limited soil depth. Scattered rock outcrops present.



Agronomic Analytics

3419 Chaucer Way
Eugene, Oregon 97405
541-684-8000

Site Evaluation
Name: Karen Dahlen Date: 8/22/05 Field # Site D
Site Description: Open, moderately rolling slope, scattered younger trees colinizing

Climate:
Air Drainage: Fair Solar Radiation: Good Wind: Semi-closed, westerly
Avg. Precipitation: 40 to 60 inch Avg. Temperature: 50° to 54° F.

Site Characteristics:
Topography: Moderate slope Elevation: 800 ft. Aspect: S
Microclimate: Semi-open, protected and sheltered

Mapped Soil Characteristics:
Series: 125C Steiwer Inclusions: Chehulpum, Hazelair, Willakenzie
Drainage: Well drained Ponding: N/A
Texture: Loam Restrictive Layers: None
Soil Depth: 27 to 40 inches
Water Holding Capacity: 4.9 to 6.0 inches
pH: 5.0 AH # 10 Surface Layer
Nutrients: _____ N _____ P _____ K _____ B _____

Water Characteristics:
Irrigation Available: N/A
Water Quality: _____
Adequacy: _____

Vegetation:
Present Vegetation: Annual and perennial grasses, forbs, scattered hardwoods younger trees colonizing
Hydrophyllic: Some sedge areas

Limiting Factors:
Growth: Greatest limiting factor is droughtiness
Ripening: _____
Growing Degree Days: _____
Frost Hazard: _____

Notes: This semi-open area is evident in the earliest aerial photography (1936) and in the historic vegetation survey (1909).



Agronomic Analytics

3419 Chaucer Way
Eugene, Oregon 97405
541-684-8000

Site Evaluation
Name: Karen Dahlen Date: 8/24/05 Field # Site E
Site Description: Open, shallow slope, scattered younger trees colonizing

Climate:
Air Drainage: Good Solar Radiation: Good Wind: Open, westerly
Avg. Precipitation: 40 to 60 inch Avg. Temperature: 50° to 54° F.

Site Characteristics:
Topography: Shallow slope Elevation: 800 ft. Aspect: South
Microclimate: Open, upper floodplain

Mapped Soil Characteristics:
Series: 52D Hazelair Inclusions: Dixsonville, Dupee, Panther, Philomath
Drainage: Poorly drained Ponding: N/A
Texture: Silty clay loam Restrictive Layers: None
Soil Depth: 30 to 40 inches
Water Holding Capacity: 4.2 to 5.3 inches
pH: 5.0 AH # 14 Surface Layer
Nutrients: _____ N _____ P _____ K _____ B _____

Water Characteristics:
Irrigation Available: N/A
Water Quality: _____
Adequacy: _____

Vegetation:
Present Vegetation: Annual and perennial grasses, forbs, scattered hardwoods younger trees colonizing
Hydrophyllic: Some sedge areas

Limiting Factors:
Growth: Greatest limiting factor is high water table during substatial part of the year
Ripening: _____
Growing Degree Days: _____
Frost Hazard: _____

Notes: This semi-open area is evident in the earliest aerial photography (1936) and in the historic vegetation survey (1909).



Agronomic Analytics

3419 Chaucer Way
Eugene, Oregon 97405
541-684-8000

Site Evaluation
Name: Karen Dahlen Date: 8/24/05 Field # Site F
Site Description: Moderate to steep slopes, sheltered

Climate:
Air Drainage: Poor Solar Radiation: Fair Wind: Closed, westerly
Avg. Precipitation: 40 to 60 inch Avg. Temperature: 50° to 54° F.

Site Characteristics:
Topography: Moderate slope Elevation: 850 ft. Aspect: E→N→W
Microclimate: Open, upper floodplain

Mapped Soil Characteristics:
Series: 28C Chehulpum Inclusions: Hazelair, Philomath, Steiwer, Willakenzie, Witzel
Drainage: Well drained Ponding: N/A
Texture: Silt loam Restrictive Layers: Shallow to bedrock
Soil Depth: 12 to 20 inches
Water Holding Capacity: 2.4 to 2.8 inches
pH: 5.0 AH # 16 Surface Layer
Nutrients: N P K B

Water Characteristics:
Irrigation Available: N/A
Water Quality:
Adequacy:

Vegetation:
Present Vegetation: Annual and perennial grasses, forbs, scattered hardwoods
Hydrophyllic: N/A

Limiting Factors:
Growth: Greatest limiting factor is droughtiness and shallow to bedrock
Ripening:
Growing Degree Days:
Frost Hazard:

Notes: This semi-open area is evident in the earliest aerial photography (1936) and in the historic vegetation survey (1909).

Table 3a Soil Properties of Inclusions - Horizons, Depth, and Colour					
Map Unit	Soil Name	Inclusions	Depth (in)	Colour	Texture
28C	Chehulpum silt loam	Hazelair	0 - 11	very dark brown	silty clay loam
			11 - 15	dark brown	silty clay
			15 - 36	dark brown, light olive brown (mottled)	clay
			20 - 40	weathered bedrock	
		Philomath	0 - 6	very dark brown	silty clay
			6 - 14	very dark brown	clay
			12 - 20	weathered bedrock	
		Steiwer	0 - 9	Very dark grayish brown	loam
			9 - 16	Dark brown	loam
			16 - 29	Dark yellowish brown	clay loam
		Willakenzie	0 - 11	Dark brown	Clay loam
			11 - 36	Dark reddish brown	Silty clay loam, clay loam
			36		Weathered bedrock
		Witzel	0 - 4	Dark brown	Very cobbly loam
			4 - 17	Dark reddish brown	Very stony silty clay loam, very cobbly clay loam
			17		Unweathered bedrock
		Rock outcrop			
41C	Dixonville silty clay loam	Bellpine	0 - 13	Dark reddish brown	silty clay loam
			13 - 34	Dark reddish brown, dark red	silty clay
			34		Weathered tuffaceous sandstone
		Hazelair	See above		
		Nekia	0 - 0.5	duff	
			0.5 - 10.5	dark reddish brown, reddish brown	silty clay loam
			10.5 - 35.5	dark reddish brown	clay
			20 - 40	fractured basalt	
		Philomath	See above		
		Witzel	See above		
		Rock outcrop			
52D	Hazelair silty clay loam	Dixonville	0 - 14	very dark brown	silty clay loam
			14 - 26	dark brown	silty clay
			20 - 40	weathered bedrock	
		Dupee	0 - 12	very dark grayish brown	silt loam
			12 - 51	dark brown, brown (mottled)	silty clay loam,silty clay, clay loam
			51 -55	variagated	clay loam
			40 - 60	bedrock	
		Panther	0 - 10	very dark brown	silty clay loam
			10 - 29	very dark grayish brown, dark grayish brown	clay
			29 - 42	dark grayish brown (mottled)	clay
			40 - 60	weathered bedrock	
		Philomath	See above		
78	McAlpin silty clay loam	Abiqua	0 - 21	Dark brown	silty clay loam
			21 - 31	Dark brown	silty clay
			31 - 38	Dark brown	silty clay loam
			38 - 60	Dark brown	gravelly clay loam
		Waldo	0 - 11	Very dark brown	silty clay loam
			11 - 60	Very dark gray,gray, mottled	silty clay, clay
		Riverwash	0- 60		Sand & gravel
		Fluvents	0 - 60	Brown, dark brown	Stratified sand, silt, & clay
102C	Panther silty clay loam	Bashaw	0 - 7	very dark gray	clay
			7 - 41	black, very dark gray	clay
			41 - 63	olive brown, light browish gray	silty clay
		Dupee	See above		
		Hazelair	See above		
		Philomath	See above		
105A	Pengra silt loam	Courtney	0 - 15	Very dark brown	gravelly silty clay loam
			15 - 28	Dark grayish brown	gravelly clay
			28 - 41	Brown	very gravelly clay loam
			41 - 60	Multicoloured	very gravelly sand
		Dupee	See above		
		Hazelair	See above		
		Natroy	0 - 5	Very dark grayish brown	silty clay
			5 - 26	Very dark gray	clay
			26 - 60	Dark grayish brown,dark brow	clay, gravelly clay
		Panther	See above		

Dahlen Soil Report

Map Unit	Soil Name	Inclusions	Depth (in)	Colour	Texture
108C	Philomath cobbly silty clay	Dixonville	See above		
		Hazelair	See above		
		Panther	See above		
		Witzel	See above		
113C,E	Ritner cobbly silty clay loam	Jory	0 - 9	dark reddish brown	silty clay loam
			9 - 60	dark reddish brown	silty clay
		Nekia	See above		
		Witzel	See above		
125C,D	Steiwer loam	Chehulpum	0 - 7	Very dark grayish brown	Silt loam
			7 - 13	Dark brown	Silt loam, clay loam, gravelly silt loam
			13		Weathered bedrock
		Hazelair	See above		
		Willakenzie	See above		
135E	Willakenzie clay loam	Bellpine	See above		
		Hazelair	See above		
		Nekia	See above		
138E,G	Witzel very cobbly loam	Jory	See above		
		Nekia	See above		
		Philomath	See above		
		Ritner	0 - 1	Duff	
			1 - 8	dark reddish brown	Cobbly silty clay loam
			8 - 32	dark reddish brown & yellowish red	Very gravelly silty clay, Very cobbly silty clay loam
			32		Unweathered bedrock
		Rock Outcrop			

FINDINGS OF FACT AND CONCLUSIONS OF LAW

for

MINOR AMENDMENT OF THE LANE COUNTY

RURAL COMPREHENSIVE PLAN

and

ZONE CHANGE FROM EXCLUSIVE FARM USE

to

MARGINAL LAND

PA 04-6092

KAREN A. DAHLEN TRUST

P.O. BOX 5687
Eugene, OR 97405-0687

Submitted by:
P. STEVEN CORNACCHIA
HERSHNER HUNTER, LLP

PROPOSAL

Applicant:	Karen A. Dahlen
Property Owner:	Karen A. Dahlen Trust
Property Location:	Located approximately ½ mile south of Eugene city limits, west of Willamette Street
Assessor's Map and Lot:	Assessor's Map No. 18-04-24-0300
Current County Zoning:	Exclusive Farm Use (EFU 30)
Attorney-Consultant:	P. Steven Cornacchia Hershner Hunter 180 E. 11th Avenue Eugene, Oregon 97401

1. EVIDENCE.

1.1 Application materials dated September 15, 2004, with exhibits;

1.2 Lane County Planning Commission Staff Report with attachments;

1.3 Marc Setchko Report, dated February 15, 2005.

1.4 Correspondence from Steve Cornacchia, dated April 19, 2005, with exhibits, including March 27, 2005, Setchko report;

1.5 Correspondence from Steve Cornacchia, dated May 24, 2005;

1.6 Correspondence from Steve Cornacchia, dated July 25, 2005, with attachments, including a copy of LUBA Decision No. 2005-029, James Just v. Lane County (Carver) and affidavits of Art Moshofsky and Mark Minty;

1.7 Agronomic Analytics Dahlen Property Soil Investigation Report.

2. INTRODUCTION.

The property that is the subject of this application consists of a 316-acre parcel located immediately south of, but not adjacent to, the Eugene city limits and the Eugene-Springfield Metropolitan Plan Urban Growth Boundary, west off of Willamette Street.This application is for approval of a Minor Plan Amendment to the Lane County Rural Comprehensive Plan (RCP) diagram to designate the subject property from Agriculture to Marginal Lands, and a concurrent Lane County zoning map amendment from Exclusive Farm Use (EFU 30) to Marginal Lands (MLRCP).

3. BACKGROUND INFORMATION

3.1 General Site Description.

The subject property is described as Tax Lot 300 of Lane County Assessor's Map No. 18-04-24. Immediately to the east of the property is located Tax Lot 1300 of Lane County Assessor's Map No. 18-03-19, a parcel of land consisting of approximately 67.16 acres, zoned Marginal Lands (ML) and owned by the applicant.

Property adjacent to the southern boundary of the subject property consists of six small parcels, all zoned Impacted Forest (F-2). Tax Lots 18-04-24-100 and 102 are adjacent to the northeast boundary of the subject property and are also zoned Impacted Forest (F-2). Tax Lots 18-04-24-200 and 201 are adjacent to the northwest boundary of the subject property and are zoned Marginal Lands (ML). Tax Lot 18-04-23-204 is adjacent to the western boundary of the subject property and is zoned Impacted Forest (F-2).

The subject property receives the following public services: Eugene School District 4J (schools); Lane Electric Co-op (electrical power); Eugene Rural Fire Protection District 1(fire and ambulance); Qwest (telephone); LTD (bus service); Lane County Sheriff's Department and Oregon State Police.

3.2 **Description of Proposed Amendments** The application before Lane County is for approval of the following:

a. An amendment to the county's comprehensive plan and map designating the subject property as Marginal Lands and re-zoning it to Marginal Lands (ML).

b. The Lane County Board of Commissioners also finds as follows:

4. PLAN AMENDMENT CRITERIA OF LANE CODE 16.400

This application to amend the Lane County Rural Comprehensive Plan was initiated by Karen Dahlen on September 15, 2004.

The following criteria apply to amendments of the comprehensive plan:

4.1 Lane Code 16.400(6)(h)(iii) (Method of Adoption and Amendment) provides that the Board may amend or supplement the Rural Comprehensive Plan upon making the following findings

(aa) For Major and Minor Amendments as defined in LC 16 400(8)(a) below, the Plan component or amendment meets all applicable requirements of local and state law, including Statewide Planning Goals and Oregon Administrative Rules

(bb) For Major and Minor Amendments as defined in LC 16.400(8)(a) below, the Plan amendment or component is:

(i-i) necessary to correct an identified error in the Plan; or

(ii-ii) necessary to fulfill an identified public or community need for the intended result of the component or amendment; or

(iii-iii) necessary to comply with the mandate of local, state or federal policy or law; or

(iv-iv) necessary to provide for the implementation of adopted Plan policy or elements, or

(v-v) otherwise deemed by the Board, for reasons briefly set forth in its decisions, to be desirable, appropriate or proper.

(cc) For Minor Amendments as defined in LC 16.400(8)(a), the Plan amendment or component does not conflict with adopted Policies of the Rural Comprehensive Plan and if possible, achieves policy support.

4.2 Lane Code 16.400(6)(i) provides that a change of zoning to implement a proposed Plan amendment may be considered concurrently with such amendment. In such case, the Board shall also make the final zone change decision, and the Hearings Official's consideration need not occur.

4.3 Lane Code 16.400(6)(h)(iii)(aa).

For Major and Minor Amendments as defined in LC 16 400(8)(a) below, the Plan component or amendment meets all applicable requirements of local and state law, including Statewide Planning Goals and Oregon Administrative Rules.

(1) **Goal 1 - Citizen Involvement.**

To ensure the opportunity for citizen involvement in all phases of the planning process.

Lane County has provided written notice of the proposed amendments and public hearings before its planning commission and board of commissioners in conformance with ORS 197.763. The information included in the notices conforms with ORS 197.763 (2) and (3) and enabled citizens to identify and comprehend the issues and to participate in a public process prior to final action by the county. Referral notices were also mailed to all federal, state, and private organizations as required by state law and Lane Code. The proposed amendments have been processed in a manner that assures full compliance with Goal 1.

(2) **Goal 2 - Land Use Planning**

To establish a land use planning process and policy framework as a basis for all decisions and actions related to the use of land and to assure an adequate factual base for such decisions and actions.

Goal 2 establishes a land use planning process and policy framework as a basis for all land use decisions, and requires development of an adequate factual base to support those decisions. A minor change is one that does not have significant effects beyond the immediate area of change, and is based on special studies or information. The justification for the specific change must be established by substantial evidence in support of the conclusion that the applicable criteria have been met.

Lane County has adopted a comprehensive land use plan amendment process with specific standards that must be addressed to justify a minor change. Substantial compliance with the plan amendment criteria in Lane Code (LC)16.400 constitutes compliance with the applicable provisions. This plan amendment must also address and satisfy the criteria set forth in ORS

197.247 (1991 ed.). This application is supported by substantial evidence upon which the Lane County Board of Commissioners conclude that the applicable criteria have been met.

(3) **Goal 3 - Agricultural Land.**

To preserve and maintain agricultural lands.

The subject property is not agricultural land as defined by Goal 3. It contains soils predominantly classified as Class V-VII by the Soil Conservation Service and is of low suitability for farming as discussed in Section 4.2 below. Accordingly, this decision is consistent with Goal 3.

(4) **Goal 4 - Forest Lands.**

To preserve forest lands for forest use.

The subject property is not suitable for growing and sustaining Douglas-fir or other less merchantable tree species as discussed more fully in Section 4.2 below. No other species would grow as fast on the subject property or be as valuable and merchantable as Douglas-fir. Zoning the property for Marginal Lands maintains the property in a resource zone and capable of being used for limited, marginal, resource uses. The subject property's suitability for growing and sustaining merchantable tree species is discussed more fully in Section 4.2 below. Accordingly, this decision is consistent with Goal 4.

(5) **Goal 5 - Open Space, Scenic and Historic Areas, and Natural Resource.**

To conserve open space and protect natural and scenic resources.

Goal 5 is not applicable to this request. There has previously been a legislative determination by Lane County, as embodied in the acknowledged Lane County Rural Comprehensive Plan, that no Goal 5 resources exist on subject site. The subject property has not been included in any inventory of needed open space or scenic areas defined by Goal 5, nor has it been identified in the comprehensive plan as having any historic, cultural or natural resources which need to be preserved and/or protected. The proposed amendments will not conflict with any Goal 5 resources.

(6) **Goal 6 - Air, Water and Land Resources Quality.**

To maintain and improve the quality of the air, water and land resources of the state.

Goal 6 requires that air, land and water resources of the state be maintained and improved by assuring that future development, in conjunction with existing development, does not violate applicable state and federal environmental quality standards, and does not exceed the carrying capacity of local air sheds, degrade land resources or threaten the availability of such resources.

Lane County has sufficient regulatory measures in place so as to ensure that existing land use activities, as well as any future development on the site, will not produce any unanticipated impacts resulting from the proposed amendments.

The subject property lies within an area identified as a "broad areas of very limited groundwater" area in Lane Manual 13.010 and the availability of water commensurate with the proposed development of the subject property is demonstrated by the analysis and conclusions of EGR and Associates, Inc. (EGR). The results of the aquifer analysis by EGR, dated July 27, 2004, are provided as evidence by the attachment of the analysis to the original application as Exhibit E.

In that aquifer analysis EGR concludes that there is sufficient water available for domestic use from the aquifer for all of the proposed parcels without adverse effects to neighboring wells. The record contains no other evidence from professional consultants that the analysis and conclusion of EGT is inaccurate or in error. The EGR report is sufficient and substantial evidence of the availability of water on the subject property and within its vicinity and demonstrates that application approval would be consistent with Goal 6.

The proposed amendments will not produce results that will be in conflict or inconsistent with the purpose and intent of Goal 6. The proposed amendments change the use designation on the subject property and any additional uses or change of use will require compliance with Lane County's existing regulatory system and measures.

(7) **Goal 7 - Areas subject to Natural Disasters and Hazards.**

To protect life and property from natural disasters and hazards.

No areas containing or prone to natural disasters or natural hazards have been identified on the subject property.

(8) **Goal 8 - Recreational Needs.**

To satisfy the recreational needs of the citizens of the state.

Goal 8 is not applicable to this request. There has previously been a legislative determination by Lane County, as embodied in the acknowledged Lane County Rural Comprehensive Plan, that no Goal 8 resources exist on subject site. The subject property has not been included in any inventory of recreational needs as defined by Goal 8. The proposed amendments will not conflict with any Goal 8 resources.

(9) **Goal 9 - Economy of the State..**

To diversify and improve the economy of the state.

Goal 9 is directed towards the comprehensive plans of the state's political subdivisions. Lane County's Rural Comprehensive Plan has been acknowledged by the Land Conservation and

Development Commission. Goal 9 is primarily focused on commercial and industrial development within urban areas. OAR 660-009-0010(1) specifically limits the application of Goal 9 to comprehensive plans for areas within urban growth boundaries. Goal 9 is not directly applicable to rural residential use in a non-resource designation.

Approval of the subject application will allow the subject property to be developed with eleven additional home sites. Goal 9 has limited, if any, applicability to the subject application.

(10) **Goal 10 – Housing.**

To provide for the housing needs of the citizens of the state.

Approval of this application would result in the development of up to eleven additional dwellings on the subject property. Approval of this application would be consistent with Goal 10.

(11) **Goal 11 - Public Facilities and Services.**

To plan and develop a timely, orderly and efficient arrangement of public facilities and services to serve as a framework for urban development.

The subject property receives the following public services: Eugene School District 4J (schools); Lane Electric Co-op (electrical power); Eugene Rural Fire Protection District 1(fire and ambulance); Qwest (telephone); LTD (bus service); Lane County Sheriff's Department and Oregon State Police.

The subject property has access to the full range of public services specified for Communities in RCP Goal 11: Public Facilities and Services, Policy 6.j. No additional public facilities and services will be required beyond the present level. While Goal 11 is couched in terms of urban development, approval of the application will not result in any urban level of development in a rural area. The public services identified above are adequate to serve the level of rural uses that the application envisions and provide the demonstration of consistency with Goal 11.

(12) **Goal 12 – Transportation.**

The intent of Goal 12 is implemented through the provisions of the State Transportation Planning Rule (TPR) (OAR 660, Division 12), which was adopted by LCDC in 1991.

OAR 660-012-0060(1) requires that amendments to functional plans, acknowledged comprehensive plans, and land use regulations which significantly affect a transportation facility shall assure that allowed land uses are consistent with the identified function, capacity, and level of service of the facility.

To determine whether the proposed amendments will significantly affect a transportation facility, the TPR lists specific criteria against which the proposed amendments are to be evaluated. The TPR provides that a plan or land use regulation amendment significantly affects a transportation facility if it:

(a) Changes the functional classification of an existing or planned transportation facility;

(b) Changes standards implementing a functional classification system;

(c) Allows types or levels of land uses which would result in levels of travel or access which are inconsistent with the functional classification of a transportation facility; or,

(d) Would reduce the level of service of the facility below the minimum acceptable level identified in the TSP (Transportation System Plan).

The Board finds that the approval of the proposal cannot result in any of the four situations provided by the TPR criteria listed above. Development of 11 parcels with dwellings will produce typically 10 trips per day for each parcel, resulting in a total trip per day count of approximately 110. Willamette Street, a major collector, will not experience a change in its functional classification as a result of an additional 110 trips per day and the total trips per day are not inconsistent for a major collector and will not reduce the level of service below the minimum acceptable level identified in the TSP (Transportation System Plan).

The engineering firm Branch Engineering has analyzed the traffic impact resulting from approval of the application and has concluded that it would not have a significant impact on transportation facilities.

Application approval is consistent with Goal 12.

(13) **Goal 13 - Energy Conservation..**

To conserve energy.

Goal 13 requires that land uses maximize conservation of all forms of energy based on sound economic principles. It is implemented by local plans and regulations that control location, orientation and density of development to minimize net energy consumption. Any development on the subject property will be subject to those rules.

(14) **Goal 14 – Urbanization*To provide for an orderly and efficient transition from rural to urban land use.***

OAR 660-004-0040(2)(c)(G) specifically exempts marginal land from the provisions of Goal 14 and its implementing rules. The rule specifically states that it does not apply to marginal land. Upon application approval the subject property will be designated marginal land. Therefore, Goal 14 is has little, if any, application to this application.

The entire ownership of the applicant is within an area committed to rural uses, both resource and non-resource in nature, as designated and provided by Lane Code and the acknowledged Lane County Rural Comprehensive Plan. No urban uses are contemplated as a result of approval of this application. No extension of urban services is necessary as a result of approval

of this application. Approval of this application will not change the uses made on the subject parcel from rural to urban.

The uses on the subject parcels resulting from approval of this application would be resource and rural residential, both of which are rural in nature. The uses are not considered urban by the code in its implementation of the acknowledged Lane County Rural Comprehensive Plan. Therefore, approval of this application would not result in the establishment of urban land use or urban land use in transition from rural land use.

All parcels resulting from approval of the subject application shall be no less than 10 acres in size which will not prevent further urban development in the future if the subject property is included within the UGB and city limits.

Approval of the application will not result in any level of urbanization of the subject property or the surrounding area and, therefore, is consistent with Goal 14 as the goal may be relevant to the application.

(15) **Goal l5 - Willamette River Greenway**

To protect, conserve, enhance and maintain the natural, scenic, historical, agricultural, economic and recreational qualities of lands along the Willamette River as the Willamette River Greenway.

The subject property is not located within the Willamette River Greenway. Goal 15 is not applicable to this application.

(16) **Goal 16 - Estuarine Resources.**

To recognize and protect the unique environmental, economic, and social values of each estuary and associated wetlands; and

To protect, maintain, where appropriate develop, and where appropriate restore the long-term environmental, economic, and social values, diversity and benefits of Oregon's estuaries.

The subject property contains no estuarine resources. Goal 16 is not applicable to this request.

(17) **Goal 17 - Coastal Shorelines*To conserve, protect, where appropriate, develop and where appropriate restore the resources and benefits of all coastal shorelines, recognizing their value for protection and maintenance of water quality, fish and wildlife habitat, water-dependent uses, economic resources and recreation and aesthetics.***

The subject property contains no coastal shorelines. Goal 17 is not applicable to this request.

(18) **Goal 18 - Beaches and Dunes**

To conserve, protect, where appropriate develop, and where appropriate restore the resources and benefits of coastal beach and dune areas.

The subject property contains no beaches or dunes. Goal 18 is not applicable to this request.

(19) **Goal 19 - Ocean Resources**

To conserve the long-term values, benefits, and natural resources of the nearshore ocean and the continental shelf.

The subject property contains no ocean resources. Goal 19 is not applicable to this request.

4.4 **Lane Code 16.400(6)(h)(iii)(bb).**

For Major and Minor Amendments as defined in LC 16.400(8) (a) below, the Plan amendment or component is:

(i-i) necessary to correct an identified error in the Plan; or

The subject property was designated Agriculture and zoned EFU 30 as part of the Lane County Rural Comprehensive Plan (RCP) adoption process in 1984. Nonetheless, it was so designated and zoned pursuant to County policy which determined that lands that might qualify as marginal lands should be addressed subsequently on a case-by-case basis pursuant to policies in the RCP and the statutory criteria in ORS 197.247.

(ii-ii) necessary to fulfill an identified public or community need for the intended result of the component or amendment; or

Not applicable.

(iii-iii necessary to comply with the mandate of local, state or federal policy or law; or

Not applicable.

(iv-iv) necessary to provide for the implementation of adopted Plan policy or elements, or

ORS 197.247 (1991 ed.) authorizes counties to designate land as marginal land. Lane County has acted to utilize this authority through the adoption of RCP Goal 3, Policy 14 and Goal 4, Policy 3. Those policies require an applicant for a marginal lands designation and zoning to address and satisfy the requirements of ORS 197.247 (1991 ed.) and applicable Lane County policies and requirements. The subject application is implementing policies in the RCP which allow qualified resource lands to be designated as Marginal Lands rather than Agriculture or Forest.

In order to aid applicants, county planning staff and the general public in addressing the marginal lands criteria, the Lane County Board of Commissioners, in 1997, adopted an interpretation of

and supplement to the County's marginal lands information sheet ("the Board interpretation") a copy of which has been made a part of the record of this decision. The Board interpretation clarifies how the marginal lands statute and criteria are to be applied in specific situations by addressing seven issues and providing policy direction for each. As discussed in these findings, the Board interpretation has particular relevance to this application in the context of evaluating the site's ability to grow merchantable timber.

ORS. 194.247(1) (1991 ed.) provides the following criteria:

> **(a) The proposed marginal land was not managed, during the three of the five calendar years preceding January 1, 1983, as part of a farm operation that produced $20,000 or more in annual gross income or a forest operation capable of producing on average, over the growth cycle, of $10,000 in annual gross income; and**
>
> **(b) The proposed marginal land meets at least one of the following tests:**
>
> **(A) At least 50 percent of the proposed marginal land plus the lots or parcels at least partially located within one-quarter mile of the perimeter of the proposed marginal land consists of lots or parcels 20 acres or less in size on July 1, 1983;**
>
> **(B) The proposed marginal land is located within an area of not less than 240 acres of which at least 60 percent is composed of lots or parcels that are 20 acres or less in size on July 1, 1983; or**
>
> **(C) The proposed marginal land is composed predominately of soils in capability classes V through VIII in the Agricultural Capability Class Classification System in use by the United States Department of Agriculture Conservation Service on October 15, 1983, and is not capable of producing eighty-five cubic feet of merchantable timber per acre per year in those counties west of the summit of the Cascade Range.**

The applicant has addressed subsections (a) and (b)(C) of the statute for demonstrating that the subject property is suitable for Marginal Lands designation. The following findings address each of those criteria:

ORS 197.247(1)(a):

It is found that the applicant has demonstrated that the subject property was not managed, during three of the five calendar years preceding January 1, 1983, as part of a farm operation that produced $20,000 or more in annual gross income. Art Moshofsky and members of his family owned the subject property during and throughout the period between 1978 and 1983. Mr. Moshofsky has provided several affidavits, that demonstrate that the subject property was not managed, during three of the five calendar years preceding January 1, 1983, as part of a farm operation that produced $20,000 or more in annual gross income. In his affidavits, Mr. Moshofsky has provided evidence that the only farm use made of the subject property during the applicable period was the intermittent and limited grazing of cattle, usually less than 25 head at any one time, by C&M Livestock Company. The grazing was the product of an informal agreement between Mr. Moshofsky and the company that provided that the company would graze a limited number of cattle on the property in exchange for fence maintenance and the

human presence of the company. The company's presence on the property provided some security at the time for Mr. Moshofsky, who was an absentee owner residing in Portland faced with trespass and vandalism problems on the subject property. Mr. Moshofsky testified that at no time did monetary consideration between the parties for the grazing exceeded $1000 annually. Mark Minty, a partner in C&M Livestock Company during that period, provided testimony in an affidavit in the record that Mr. Moshofsky's description of the activity and the agreement of the parties was accurate and that the company did not own or manage any property adjacent to, contiguous with or in the vicinity of the subject property. Mr. Minty also testified that it is his opinion that the subject property is of marginal value for grazing or other agricultural production and could not be managed as part of a farm operation capable of producing $20,000 in gross income annually.

Furthermore it is found that the applicant has demonstrated that the subject property was not managed as part of a forest operation that produced an average, over the growth cycle, of $10,000 in annual gross income.

The applicant's forester, Marc Setchko, provided an analysis to the record of the timber-growing potential of the subject property and concluded that the subject property could not be managed as a forest operation capable of producing an average, over the growth cycle, of $10,000 in annual gross income. Mr. Setchko, with both professional credentials and 27 years of experience, is highly qualified to render such any analysis and conclusion.

Mr. Setchko's opinion was based on a detailed analysis of the existing soils, their ability to grow timber (primarily Douglas-fir) and conversion of that growth potential into dollars based upon log prices in 1983. Mr. Setchko's methodology is dictated by the Board interpretation (Direction for Issue 4). Mr. Setchko's analysis used a fifty-year growth cycle as directed by the Board interpretation (Direction for Issue 5).

Mr. Setchko, in his report dated March 27, 2005, conducted a forest income analysis of the subject property that included the entire 387.65 acres of common Moshofsky ownership in 1983. In that report Mr. Setchko calculated the average gross annual income of the property through a complete growth and harvest rotation. He calculated what the forest operation on the subject property was capable of, in terms of income, based on actual stocking of the property during the 1978-1983 period. His calculation is based upon the actual volume of timber removed from the property in 1990 by Mr. Moshofsky (Mr. Moshofsky's affidavit of that timber removal, dated March 15, 2005, is included in the record) and his timber cruise of the remaining portion of the property containing stands of merchantable Douglas Fir. Included in Mr. Setchko's report is a map of the property with areas of timber harvest and existing stands of merchantable Douglas Fir delineated. Mr. Setchko's earlier reports in the record of this proceeding, and incorporated herein by this reference, demonstrate that significant portions of the property have not had any merchantable trees growing thereon for at least 50 years (and likely 100 years), due primarily to the steep, rock-laden, barren slopes of the northern portion of the property and the continually moist bottom land throughout the middle of the property. Those areas of the property contain poor soils for timber production (138G, 52 D, and 28C) as shown in Mr. Setchko's numerous reports in the record of this proceeding. The record of this proceeding includes aerial photos of

the property, dating back to 1952, that display that those same areas have been devoid of any trees, merchantable or otherwise, long before the 1978-1983 period and continue to this day to be devoid of trees. Mr. Setchko was not required to make any assumptions on stocking levels in his analysis and calculations—he used the actual condition of the property during the applicable time period and its ability, at that time, to produce forest income over the growth cycle of the merchantable stands of timber existing at that time.

The applicant has provided testimony from Stephen Caruana, principal agronomist of Agronomic Analytics, regarding the relationship between the soils of the subject property in areas devoid of trees and the fact that no trees have grown in those areas for at least the past 50 years. Mr. Caruana testified, in his Dahlen Property Soil Investigation Report, that silvicultural requirements of Douglas fir demonstrate that Douglas fir grows poorly on shallow soils, germinates slowly in grassy, overgrown areas, and is especially subject to lethal conditions on hot, dry aspects. Mr. Caruana testified that such areas and conditions are prevalent in the areas of the subject property that are devoid of trees. He testified that the large open, grassy areas of the subject property, especially those on the hillsides with south and west exposures, exceeded the limiting conditions and are, consequently, severely limited for the propagation and survival of desirable tree species. Mr. Caruana further testified that shallow soils significantly contribute to the limiting conditions and that the pattern of forest cover on the subject property followed closely the presence of deeper soils. He found that those areas that do not now support trees (and appear not to have had for the last 100 years) are especially shallow and subject to excessively hot and dry conditions due to their predominantly south aspect. He further found that the non-forested floodplain area soils are more likely to reforest with non-commercial species of typical hydrophilic tress such as willows, alders, ashes and the associated brush, grasses and forbs rather than commercial tree species. Mr. Caruana concludes that the subject property's history of no trees on those particular areas is a direct result of the areas' soils having limited water holding capacity, shallow rooting depth and high hazards for erosion and potential runoff. Mr. Caruana's analysis and conclusions provide substantial evidence to support the conclusions of Mr. Setchko regarding the subject property's capability of producing forest income.

The applicant asserts that the income capability of the property in this case can be calculated by actual stocking conditions of the property before, during and after the applicable 1978-1983 period. Mr. Setchko's analysis and calculations of the actual timber available for harvest, throughout the growing cycle, demonstrates that the entire property was and is not capable of producing over $10,000.00 in annual income over the growing cycle from a forest operation.

Goal One Coalition has challenged the applicant's demonstration that the subject property meets the agriculture and forest income tests of the statute. The Board finds that the challenges by Goal One Coalition are without legal foundation and do not include any supporting professional opinion regarding agriculture or forest income of the subject property and, therefore, are' without merit.

The specific challenges of Goal One Coalition, which cover both ORS 197.247(1)(a) and (b)(C), are discussed and rejected as without merit as follows:

1. **The income test "forest operation" has not been addressed.**

Goal One Coalition argues that the applicant has not conducted any analysis of the "income-producing capability" of the proposed marginal lands using "current timber values" to calculate the potential gross income over the growth cycle. Goal One Coalition is correct in asserting that the calculation of the annual gross income for the ORS 197.247(1)(a) income test can be accomplished by the use of timber values. However, it is incorrect in its assertion that the calculation must use "current timber values."

Goal One Coalition references language in *DLCD v. Lane County* (Ericcson)[1] that mentions that "current prices" were used in the calculations of the Ericcson application. In that case, however, the use of a particular year's prices was not at issue and LUBA made no determination regarding such use. What the decision in Ericcson did establish, in addition to affirming Lane County's approval of a Marginal Lands re-zoning application, was that on-site evaluation of forest productivity by a qualified expert is weightier evidence than published data or that provided by individuals not qualified as experts in forest management.

Mr. Setchko used 1983 Douglas-fir log prices and volumes in his calculation of the projected gross forest operation income of the proposed marginal land. In this case Mr. Setchko is the qualified expert with 27 years of forest management experience, including 17 years as a private consultant and a Master's Degree in Forestry. Goal One Coalition has not established that it has any experience or credentials in forest management. Furthermore, it has not provided any testimony from a qualified expert in forest management to support its assumptions and conclusions.

Lane County, in response to and in reliance upon Ericcson, issued its interpretations of the Marginal Lands statutes in the Board of Commissioners' 1997 Supplement to Marginal Lands Information Sheet. A copy of the supplement and the information sheet was provided to the record of this decision. It is a binding policy statement providing guidance and direction to applicants, county planning staff, the public and to the Lane County Planning Commission and Board of Commissioners regarding the statute. The Board direction stated in ISSUE 4 of the supplement provides:

> **"ISSUE 4: <u>What price date should be used to calculate gross annual income for forest lands?</u>**
>
> **Board's Direction:**
> The legislative intent of the "management and income test" of the Marginal Lands Law was to identify those lands which were not, at the time the Marginal Lands law was enacted (1983), making a "significant contribution" to commercial forestry. Therefore, it is appropriate and statistically valid to use the following methodology:

[1] 23 Or LUBA 33 (1992)

1. Based on the best information available regarding soils, topography, etc., determine the optimal level of timber production for the tract assuming reasonable management.

2. Assume that the stand was, in 1983, fully mature and ready for harvest.

3. **Using** the volumes calculated in step (1), and **1983 prices**, calculate the average gross income over the growth cycle." (Emphasis added)

The Board's direction to use 1983 prices was an essential and reasonable approach to determining the productivity of forest lands at that time and obviates the need to make annual adjustments for inflation as the years go by (by adjusting the $10,000 income figure).

Mr. Setchko's use of 1983 prices to determine average annual gross income is consistent with Lane County policy and is directed by the Board of Commissioners' binding local level policy statement in the aforementioned supplement. Using 1983 prices, Mr. Setchko has determined that the subject property was not capable of being managed for forest operations producing at least $10,000 in annual gross income. Goal One Coalition has provided no evidence that contradicts or refutes Mr. Setchko's conclusions.

The Oregon Land Use Board of Appeals affirmed Lane County's policy of utilizing 1983 log prices in the forest income test analysis. In *Just v. Lane County*, LUBA No. 2005-029, dated June 8, 2005, LUBA affirmed the use of 1983 log prices in another Marginal Lands case and stated:

> "Although ORS 197.247(1)(a) does not expressly mandate that counties use 1983 timber prices in applying the gross income test, we agree with the county and intervenor that it implicitly does so. The purpose of the forest operation test is to identify lands that are not capable of meeting the specified $10,000 threshold averaged over the growth cycle. Both the "farm operation" and "forest operation" prongs of the test are specifically linked to January 1, 1983."

2. Mr. Setchko fails to explain his use of a 50-year growth cycle.

In ISSUE 5 of its 1997 Supplement, Lane County adopted the use of a 50-year growth cycle as the usual standard. Jim Just assigned that policy as an assignment of error in *Just v. Lane County* and LUBA rejected his arguments in that assignment and affirmed the county's use of the 50-year growth cycle. It is found that the policy remains valid today and that the applicant's use of a 50-year growth cycle in calculating forest income complied with the policy and adequately demonstrated, in part, that the forest income test had been appropriately met.

3. All Moshofsky-owned property and milling operations throughout the world during the 1978-83 test period must be included in the calculations for the forest income test

Goal One Coalition raised this issue in its letter to the Lane County Planning Commission, dated February 25, 2005. The letter provides no authority for the proposition that the legislature intended the statute, and particularly the forest income test, be applied to all land and industrial operations, wherever located on the planet, of an individual in the analysis of what the subject property could contribute to the forestry economy of the state. Lane County's 1997 supplement, ISSUE 3, provides that "the law creates a general presumption that all **contiguous** land owned during 1978-82 was part of the owner's 'operation' (emphasis added)." The interpretation includes no direction that non-contiguous property or operations of the applicant be considered in the income analysis. Lane County has consistently required Marginal Lands applicants to address the income tests on a contiguous property basis only. That requirement is an objective criteria authorized by ORS 197.247(5).

Not only has Lane County historically not required that all of an applicant's lands or operations in other locations not contiguous, adjacent or nearby the application's subject property be considered in the analysis, but to do so would be unreasonably beyond what the legislature intended to require in the statute. If the legislature had intended such a result, which could place worthless property (from a resource perspective) of a larger, non-contiguous, ownership in a totally unusable condition, it would have stated such an intent in the body of the statute. Goal One's assertion that the income capability analysis of a particular piece of property must include all other lands and operations owned by the property owner, regardless of its location and relationship to the subject property, defeats the intent of the legislature to capture particular, non-contributing, properties and to allow both residential and resource use of them through application of the Marginal Lands statute. It appears more reasonable that the legislature intended the analysis to be of the subject property; to require that the analysis combine the subject property with other non-contiguous and non-related property defeats the overall intent of the legislation to identify those lands which are unproductive and not contributing to the agricultural and forestry economy of the state of Oregon. Goal One's assertion in this issue is without any legal foundation, is supported by no substantial evidence of its requirement and should be rejected by the Commission.

4. All income from operations of C&M Livestock Company must be included in the calculations for the agriculture income test.

The findings provided on the forest income test, regarding forest operations on contiguous property are fully incorporated herein as though fully set forth and are applied to farm operations also. Mr. Minty has testified that C&M Livestock Company owned no property contiguous to, adjacent to or nearby the subject property. Therefore, it is found that the intermittent grazing of a limited number of cattle on the subject property should be reasonably considered as not contributing significantly to the agricultural economy of the area or state and that the subject property was not managed as part of a farm operation that produced more than $20,000 in annual income during the subject period.

5. The applicant has not established that the subject parcel is not capable of producing 85 cu.ft./ac./yr. of merchantable timber.

Goal One Coalition argues two points within this argument. First it argues that the applicant's consulting forester has not applied a sanctioned methodology for determining forest productivity.

Mr. Setchko used information generated by Lane County and the Oregon State Forester's office consistent with LCDC regulations for providing such ratings.[2] Mr. Setchko calculated the forest productivity capability of the subject property using the same sources of ratings that were used in the Carver application (the subject of *Just v. Lane County* referred to hereinabove). Those sources of ratings and the use of the ratings were affirmed by LUBA in that decision. Mr. Setchko applied a rating to each of the soils of the proposed marginal land and concluded that the proposed marginal land produces less than 85 cu.ft./ac./yr. of merchantable timber.

The second part of Goal One Coalition's second argument is that "(A)n evaluation of a property's capacity for forest production must consider productivity for all merchantable forest tree species, not just Douglas-fir." Mr. Setchko has provided an analysis of the species that Goal One Coaltion argues are "merchantable" and concludes that a majority of those species are not "merchantable." He further concludes that all other species that may be merchantable grow sufficiently slower than Douglas-fir on the subject soils and that they would not produce at least 85 cu.ft./ac./yr. on the subject property. Mr. Setchko includes that analysis in each of his "Forest Productivity Analysis" that were provided to the record in support of the application. Mr. Setchko's experience and expertise provides the conclusion that many of the species, especially KMX and hybrid poplar, have no established market and are, therefore, not merchantable. His overall conclusion is that if the proposed marginal land is not capable of producing an average of $10,000 in annual gross income from Douglas-fir, then there are no other merchantable tree species that could produce any more than the calculated figures that he has provided in his analysis for Douglas-fir. Goal One Coalition has not provided any evidence that contradicts or conflicts with the findings and conclusion of the Setchko reports. It is found that the applicant, through the evidence provided by Mr. Setchko's reports, has demonstrated that the subject property is not capable of producing more than 85 cu.ft./ac./yr. of merchantable timber.

ORS 197.247(1)(b)(C):

The applicant has demonstrated, through use of the 1987 SCS Soil Survey of Lane County Area, Oregon, (1987 Soil Survey) that the subject property contains predominately classes V-VIII in the Agricultural Capability Class Classification System in use by the United States Department of Agriculture Conservation Service on October 15, 1983. The applicant has further demonstrated, with the inclusion of the Lane County Agricultural Lands Working Paper of the Lane Rural Comprehensive Plan ("Working Paper") published in November 1981, and its 1983

[2] See OAR 660-006-0005(2)

Addendum, the cover page and forward of the 1987 Soil Survey and the forward of the 1987 Soil Survey currently posted on the NRCS web site, that the soil map units and soil classifications contained in the 1987 Soil Survey were the classifications of the SCS system in use on October 15, 1983.

It further found that, in addition to the findings contained in the previous sub-paragraph 5. findings regarding Goal One Coalition arguments, that the applicant has adequately demonstrated, through the evidence provided by Marc Setchko, that the subject property is not capable of producing more than 85 cubic feet per acre per year in merchantable timber.

Conclusion: The subject property qualifies under ORS 197.247(1) as marginal land because:

(a) it was not managed during three of the five calendar years preceding January 1, 1983, as part of a farm operation that produced $20,000 or more in annual gross income;

(b) it was not managed as a part of a forest operation during that same time period which was capable of producing an average, over the growth cycle, of $10,000 in annual gross income;

(c) it is composed predominantly of soils in agricultural capability classes V through VIII, and

(d) it is not capable of producing 85 cubic feet of merchantable timber per acre per year.

It is found that substantial evidence in the record, primarily, but not limited to, the Setchko reports, exists to support each of the above conclusions. No documentation, expert testimony or other substantial evidence has been submitted to the record that refutes or contradicts that evidence with regard to the resource capabilities of the subject property as measured by the statutory standards and criteria in ORS 197.247.

For the reasons set forth above, the Board finds that the policies in the RCP, specifically RCP Goal 3, Policy 14 and RCP Goal 4, Policy 3, authorize and allow certain qualified resource lands to be designated and zoned marginal lands. Approval of this application implements those policies which have been acknowledged by the Land Conservation and Development Commission to be in conformity with Statewide Planning Goals and ORS 197.247 (1991 ed.).

(v-v) otherwise deemed by the Board, for reasons briefly set forth in its decisions, to be desirable, appropriate or proper.

The totality of this application's response to and treatment of applicable criteria, coupled with the benefits accruing to both the public and the applicant as demonstrated in this application, provides the Lane County Board of Commissioners with adequate foundation and reason to find

that approval of the application is desirable, appropriate and proper and would be a demonstration of good public policy.

4.5 Lane Code 16.400(6)(h)(iii)(cc).

> For Minor Amendments as defined in LC 16.400(8)(a), the Plan amendment or component does not conflict with adopted policies of the Rural Comprehensive Plan and if possible, achieves policy support.

There are no policies in the adopted and acknowledged RCP that conflict with this request for plan amendment. As discussed in the previous section, there are policies in the RCP that specifically support and encourage approval of marginal lands applications for qualified property. The subject property addresses and satisfies the marginal lands criteria that are set forth in ORS 197.247 (1991 ed.).

Approval of this plan amendment is also consistent with the Board's interpretation of the Marginal Lands statute (ORS 197.247 (1991 ed.)) and its application to individual requests for plan amendment. The application is supported by detailed and thorough analysis and testimony provided by a qualified and experienced forester. The analysis and testimony was produced and provided in conformance with direction provided by the Board's interpretation.

Other RCP policies that may be relevant to this decision are as follows:

(1) GOAL ONE: CITIZEN INVOLVEMENT.

Notice to affected property owners and evidentiary hearings provided by Lane County ensures that the application meets and supports the citizen involvement goal and policies of the comprehensive plan.

(2) GOAL TWO: LAND USE PLANNING.

(a) Policy 25: Changes to Plan Diagram.

This application for amendment of the Plan Diagram designations for the subject property has been evaluated through the county's plan amendment procedure and approval of this application is based upon fulfillment of the criteria of Lane Code 16.400 which is addressed in Section 4 of these findings.

(3) GOAL THREE: AGRICULTURAL LANDS.

There has previously been a legislative determination by Lane County, as embodied in the acknowledged Lane County Rural Comprehensive Plan, that the subject property is not agricultural land and is not High Value Farmland. Nonetheless, consideration of agricultural use of the subject property and application of all relevant criteria regarding agricultural considerations has been adequately provided in the application and during the evidentiary hearings.

(4) **GOAL FOUR: FOREST LANDS.**

(a) **Policy 1: Conservation of forest lands.**

The primary policy of both the comprehensive plan and statewide planning goals regarding forest lands is the conservation of those lands for multiple forest uses. Approval of this application is consistent with and supports Policy 1 of Goal Four of the Comprehensive Plan.

4.6 **Lane Code 16.400(6)(h)(iii)(dd)**

> ***For Minor Amendments as defined inn LC 16.400(8)(a) below, the Plan amendment or component is compatible with the existing structure of the Rural Comprehensive Plan, and is consistent with the unamended portions or elements of the Plan.***

As discussed in previous sections, this plan amendment is consistent with and satisfies the criteria that are referenced and adopted by specific policies in the RCP. Those policies are RCP Goal 3, Agricultural Lands, Policy 14 and RCP Goal 4, Forest Lands, Policy 3 which specifically allow certain, qualified, resource lands to be designated and zoned as marginal lands. Approval of this amendment is consistent with the RCP policies for farm (Goal 3) and forest (Goal 4) lands.

The Board interpretation recognizes this consistency. It states under "ISSUE 1":

> "Marginal land is intended to be a sub-set of resource land, i.e., there are 'prime; resource lands and 'marginal' resource lands. The marginal lands are to be available for occupancy and use as small tracts than are required in the better resource lands. The criteria in the law define which lands may be designated as marginal. Evidence for this position is found in the legislative history and the fact that marginal lands are recognized in both Statewide Goal 3 – Agricultural Lands and Goal 4 – Forest Lands."

Marginal lands are resource lands that are intended for occupancy with limited rural residential development.

Based on the evidence in the record which addresses and satisfies the criterion in ORS 197.247 (1991 ed.) and the above-referenced RCP resource policies, the Board concludes that approval of the subject plan amendment is compatible with the existing structure of the acknowledged RCP and is consistent with the unamended portions and elements of the RCP.

4.7 **Zone Change Criteria of Lane Code 16.252Lane Code 16.252(2)(Criteria).**

> ***Zonings, rezonings and changes in the requirements of this Chapter shall be enacted to achieve the general purpose of this Chapter and shall not be contrary to the public interest. In addition, zonings and rezonings shall be consistent***

with the specific purposes of the zone classification proposed, applicable to Rural Comprehensive Plan elements and components, and Statewide Planning Goals for any portion of Lane County which has not been acknowledged by the Land Conservation and Development Commission. Any zonings or rezonings may be effected by Ordinance or Order of the Board of County Commissioners, the Planning Commission or the Hearings Official in accordance with the procedures of this section.

This decision results in a change from Exclusive Farm Use to ML Marginal Lands. The facts relevant to the zone change standards are largely redundant with the facts relevant to plan policies and the Statewide Planning Goals and have been addressed in preceding sections of these findings of fact and are incorporated into these findings by this reference.

This zone change is consistent with the general purposes of LC Chapter 16 as set forth in LC 16.003 in that:

1) In conformity with various development rules discussed above, the subject property will be developed commensurate with the character and physical limitations of the land and will thus promote the health, safety and general welfare of the built environment;

2) It will provide home construction opportunities that will aid the economy;

3) It will conserve other farm and forest lands by locating residential opportunities within a resource zone that allows limited residential development;

4) It will aid the provision of affordable housing within the Metro area by providing reasonable selections for a place to live;

5) By its location near the Metro Plan UGB, it will provide for the orderly and efficient transition from rural to urban lands and the efficient provision of public facilities and services;

6) By virtue of regulations discussed above, it will protect the quality of the land, air and water of the county and will protect life and property in areas subject to flooding.

This zone change is consistent with the purposes of the Marginal Lands Zoning District because it provides an alternative to more restrictive farm and forest zoning and it will allow any of the uses permitted in the Marginal Lands zoning district and thereby provide opportunities for persons to live in a rural environment and to conduct part-time farm or forest operations. It is being applied to property in accordance with Lane Code Chapter 16 criteria and procedures, RCP plan policies and criteria in ORS 197.247 (1991 ed.).

CONCLUSION

This application has addressed the applicable criteria, shown consistency with that criteria, has demonstrated good public policy through the public and private benefits accruing from its proposals.

Based on the substantial evidence presented above and included in the record of this decision, the Board of County Commissioners finds and concludes that the subject application for plan amendment and zone change meets and satisfies all of the relevant criteria and hereby is granted approval.

HERSHNER HUNTER LLP

STEVE CORNACCHIA
scornacchia@hershnerhunter.com

May 9, 2006

Jerry Kendall
Lane County Land Management Division
Public Service Building
125 E. 8th Avenue
Eugene, OR 97401

Re: Karen Dahlen (PA 04-6092)
Our File No. 22186.30005

Dear Jerry:

Enclosed is a report, with attachments, from Marc Setchko, the applicant's consulting professional forester. The report is in response to the materials and arguments submitted at the Board of Commissioners' hearing on April 19, 2006, by James Just.

We believe that the applicant has previously provided adequate and substantial evidence to support the relevant criteria for approval of the subject plan amendment and zone change. Therefore, we are only submitting the Setchko materials to the record in response and rebuttal to Mr. Just's April 19th materials and arguments. Please place them in the record of the proceeding.

Best regards,

STEVE CORNACCHIA

PSC:ss
Enclosures
Cc: Karen Dahlen (with enclosures)

Marc E. Setchko
CONSULTING FORESTER

870 Fox Glenn Avenue
Eugene, Oregon 97405
Phone: (541) 344-0473
FAX: (541) 344-7791

May 4, 2006

Lane County Board of Commissioners

RE: Lane County File #PA 04-6092, Dahlen; Response to Goal One Coalition Letter dated April 18, 2006

Members of the Board:

In conjunction with several Forest Productivity Analyses, completed December, 2003, through March, 2005, I have enclosed the following written response to a letter written by Jim Just of Goal One Coalition, dated April 18, 2006. I have addressed each issue as presented in the letter, most of which I have already addressed in my analyses. I am answering these questions as a qualified, Society of American Foresters Certified Professional Forester (#2953), with 28 years of experience including 18 years as a consultant, with Bachelor of Science (Cal Poly, SLO) and Master of Forestry (Oregon State) Degrees. As a consultant I have extensive experience in drawing up forest management plans, handling the administration of these plans and the merchandising of logs to maximize the return to my clients.

Following are responses to questions raised in Goal One Letter:

Page 7: Mr. Just notes that my income information is based on actual stocking rates rather than the capability of the forest operation. He then states that I considered only income from a partially stocked stand; while pointing out I argue that establishing fully stocked stands is "unlikely", due to multiple environmental factors. He then states that these management challenges are commonly overcome. For confirmation of all these statements he presents Exhibit 1: *Establishing & Managing Ponderosa Pine in the Willamette Valley*. I will use this publication as well.

On page 3 (included in Mr. Just's Exhibits) of the above mentioned publication, first paragraph, it states: "In the foothills, ponderosas occupy the harshest of forest sites, where Douglas-fir and other species cannot dominate. On sites suitable for other conifers, ponderosa may grow for some time but eventually is shaded out by the taller more dominant species. Commonly, ponderosas are found in association with Oregon white oak and many times in thick patches of poison-oak. The last statement sums up the current conditions on the Dahlen property.

The publication then presents the most common scenarios for ponderosa pine on three general soil types:

1. Poorly drained, heavy clay soils on the Valley bottom or in the low foothills.
2. Shallow, rocky clay soils in the Valley foothills.
3. Well-drained, sandy soils in the flood plain of the Willamette River and its tributaries.

The publication then states that these soil types represent the **low** end of the growth potential for ponderosa pine. It grows better on soils with good drainage and depth. The predominant soil types on the Dahlen property fit the criteria described in number 1 and 2.

The above statements, from the Exhibit presented by Mr. Just, confirm my observations concerning the property; that establishing fully stocked stands would be difficult.

Mr. Just then states that establishing a fully stocked stand could be accomplished through thorough site preparation, selection of suitable tree species for planting, and subsequent weed, brush, and pest control. He further states that I have failed to consider the income the forest operation was capable of producing.

Throughout all of Mr. Just's arguments he continues to talk about **"reasonable forest management practices".** He points this out again on page 8; citing DLCD v. Lane County (Ericsson). What he fails to state is that this decision supported the contention that the parcel in question could not support a fully stocked stand. He then presents options that are extremely expensive to carry out, with no guarantee of success. Following his suggestions would cost the landowner more to establish a fully stocked stand than the future income from the stand. Throughout Mr. Just's arguments he assumes that because an acre of ground exists it can be fully stocked. I have spent 28 years dealing with different soil types, environmental conditions and tree species. I have been involved with tree planting from 1975 through the present. In the late 1970's I was a tree planting inspector in the Oregon Cascades; I oversaw planting certain sites for a **fifth** planting. And the sites **still failed** to support a fully stocked stand of conifers. There are areas of natural meadows, rock and other material which will simply **not support trees.** Mr. Just seems to believe that a tree will grow from solid rock; all you have to do is spend a enough money and the tree will grow.

In conclusion: **professional foresters** know that certain soil types, site aspects and other environmental conditions will not support tree growth. This is why there are natural meadows, swamps, bogs and rocky areas where no trees grow. **Trees will not simply grow because there is a spot to plant them.** Furthermore, if a benefit/cost analysis is used for the areas of the Dahlen parcel where no trees are growing (and have not for as far back as aerial photos are available), **no** money would be spent on trying to plant trees, let alone establish a fully stocked stand. Considering all of the above factors, I have to ask: at what point do you pass beyond "reasonable management practices"?

Mr. Just then states that I have not addressed the "income capability" of the adjoining 67.16 acre property. My report dated March 17, 2005 addresses this issue; did Mr. Just read that report?

Page 8: Mr. Just states that 1978-82 prices must by used. This issue will be addressed by Mr. Steve Cornacchia.

Mr. Just states that a 50-year growth cycle has not been justified and is not appropriate. He then states that I changed an initial 60-year growth cycle to a 50-year growth cycle (in an analysis of another parcel), without explaining why. **The reason it was changed was due to Mr. Just's loud denouncement (at the public hearing) of my use of a 60-year rotation.** At the time Mr. Just argued long and hard that I was ignoring the intent of the Planning Commission. He argued that I should use the accepted 50-year rotation. Apparently, he has changed his mind on the issue.

A fifty year rotation is used, for the necessary volume and productivity calculations, primarily because that is what all of the growth and productivity data is based on in the soils tables and tree growth tables. **The cubic foot per acre per year data presented in all of the soils tables is based on a 50-year rotation.** In a few cases, when noted, the data is for 100-year rotations. In the 1997 NRCS tables of soil productivity there are **four (4) soils out of 142 soils** in Lane County that use a 100-year productivity figure. The use of 100-year tables is extremely rare for sites west of the Cascade mountain range. The are two primary reasons for this: management for 100-year rotations is almost nonexistent (from a financial standpoint it is nonexistent) and the majority of trees growing in the Willamette valley have passed the "culmination of mean annual increment" (which Mr. Just repeatedly brings up) by the age of 45 years.

All of the above factors are confirmed by the fact that the vast majority of trees in the Willamette Valley have been harvested before the age of 50 years. Mr. Just points out that a 100 year old tree would return more money than a 50 year old tree. This is obviously true. However, it completely ignores the cost of holding onto the tree. By the time a tree is 100 years old, particularly on poor sites, the tree is only growing at 1-3% per year, if that. Most people would consider this an extremely poor investment of their money. Industry and the majority of tree farmers would not even consider such a long rotation, for this very reason.

If other than 50-year rotations are to be used, data on cubic foot per acre per year will need to be presented. The growth of a tree goes through three stages: the tree grows slowly after it has been planted (while the roots establish themselves), then starts to pick up speed once it is established, then peaks (culmination of mean annual increment), then slows down, eventually leveling off, and **finally the growth actually decreases.** This final stage happens when the trees get old. The tops break out and the trees begin to die, like all living things. The use of a 50-year rotation has been the standard in forestry for many years; the King 50 year site index tables were published in 1966.

To sum this all up: you cannot simply take 50-year growth rates and apply them to different length rotations. **The 50-year growth figures are used throughout the Willamette Valley, Cascades and Coast Range, because they fit the vast majority of forest management practices being used today.**

Page 10-12: Mr. Just presents new data on the income test. I have presented the income test numerous times in previous analyses. For his tables to have any validity, it must be assumed that all of the acres on the property (regardless of soil type, site aspect or other environmental conditions) are fully stocked and growing at the most optimistic rate. I have discussed at great length why this is not possible on this parcel, or for that matter any site similar to this one. This is based on 28 years of experience and extensive schooling at Oregon State University where I received a Master of Forestry in Silviculture (management of trees). The majority of what Mr. Just proposes under the guise of "reasonable management practices" is so far fetched it is difficult to respond to, not to mention extremely expensive. The only tree farmers who would be willing to follow his proposals would be people who have other reasons (esthetic, emotional or otherwise) for carrying these proposals out. From a monetary, time and labor standpoint they are costly and unreasonable. For these reasons I will just concentrate on pointing out the fallacies involved in Mr. Just's presentation.

For the Douglas-fir calculations Mr. Just uses grade percentages which are too optimistic and prices which are too high. In the past I have hedged on the high side to prove that, even using optimistic numbers, the parcel cannot exceed the income test. In reality (for Douglas-fir) the 2saw, on a poor site, would be closer to 30% and the 4 saw would be closer to 20%. This would lower the camprun (average price paid for all logs) from $229.50/MBF to $224.00/MBF. This is not a big difference in price; so for the sake of argument I have always used the higher figure to present the most optimistic price. Mr. Just has used a camprun price of $283.90/MBF, which is approximately 24% higher than $229.50. From this number alone Mr. Just can inflate his income tables by 24%. But the biggest problem with the income figures presented is that they assume full stocking, using the average productivity figures for Douglas-fir in the soil types on the parcel. Full stocking is difficult, if not impossible to achieve on droughty south slopes with a high rock content and extremely high soil temperatures in the summer months. Professional foresters know this and use lower productivity numbers when projecting growth and volume figures into the future for long term management of their lands. The growth tables are averages which include the high site ground with the low site ground. A particular soil will only produce the volumes shown on the tables if the soil is on a statistically average site. The Dahlen parcel is a poor site, due to environmental conditions, regardless of soil types.

Mr. Just also points out that a 100 year rotation would produce a greater percentage of higher grades. This is true. However, from a financial standpoint it does not make sense. The cost of holding onto these trees until 100 years, when the growth per year is leveling off (approaching 0%), exceeds the extra money generated by the increased grades. For the majority of tree farmers **this is not reasonable forest management.** A 100-year rotation is not even considered by industry.

Mr. Just's assumptions for ponderosa pine are even worse. To begin with, he uses 16' log length volumes. This alone inflates the volume by 20-35%, depending on the height and taper of the trees in the stand being looked at. He has used eastern Oregon volume tables because those are the only tables available. **All eastern Oregon volume tables are in 16' volumes** (see Exhibit 1-3), **because that is the way logs are scaled, bought and sold in eastern Oregon**. To date there are no 32' log volume and growth tables for Willamette Valley ponderosa pine, because there are not enough mature stands to develop data from. **Logs in western Oregon are scaled, bought and sold, based on 32' log volumes.** While other log lengths are bought and sold in eastern, and western, Oregon; **the scale tables for eastern Oregon are based on 16' logs** and **the scale tables for western Oregon are based on 32' logs. You cannot mix and match these tables and scaling rules.** The reason Douglas-fir tables show both 16' and 32' log volumes, and growth figures, is because Douglas-fir grows east **and** west of the Cascades. Mature stands of Douglas-fir have existed for centuries on both sides of the Cascades; data has been collected for decades and is considered **statistically accurate.** This **is not** the case for Willamette Valley ponderosa pine growing on the west side of the Cascades. As such, the only good volume and growth tables for ponderosa pine are for the stands **east** of the Cascades.

His assumptions regarding log prices of ponderosa pine are extremely high. In his Exhibit 9-3, he states that in the absence of information concerning distribution of grades, it is not possible to assign the different grades their proper weight in calculating an overall average. Therefore, he assigns an equal weight to the various grades. This cannot be done. To wit: the peeler, 1S, SM and 2S grades **cannot** be achieved in even a 100-year rotation of ponderosa pine. It may be possible to reach a 3S grade in 100 years, but even that would be extremely optimistic. In a 100-year rotation it is possible to have a high percentage of 4S; in a 50 or 60 year rotation the percentage of 4S would be extremely small, most likely less than 20%, if not lower still (see Exhibit 2-2, page 36 of *Establishing & Managing Ponderosa Pine*, this page is **not** included in Mr. Just's Exhibit of the same document). This is due to the growth characteristics of valley ponderosa pine and the maximum diameter which ponderosa can grow to in a 50 or 60 year rotation on poor sites (see Exhibit 1-2). Taking the highest site class of 160 shows an average of 17.6 inches in diameter for a stand. It is difficult to get a 12" log (on the small end) from a tree this size. A 4S log needs to be a minimum of 12" at the scaling end (the small end). The only way to increase the diameter growth, and create more 4S, would be by thinning the stands. However, **while creating more 4S**, this would **decrease** the total **volume** per acre, **and** the **cubic foot per acre** per year growth.

After presenting this Exhibit Mr. Just states that even though he thinks the price should be higher than the figures he presents, due to his above statements, he will only use 40% 4S, 50% 5S and 10% 6S. Even these figures are too high. His percentages equate to a camprun price of approximately $224/MBF. A more accurate, **actual** camprun price (using 10% 4S, 70% 5S and 20% 6S), for the time period would be $190/MBF. This accounts for approximately 18% higher income figures, **regardless** of the volume figures used for the income test.

The increased volume figures due to using 16' log volumes, rather than 32' log volumes, combined with the increased log prices used, results in **the income being inflated by anywhere from 40-60%.** And once again; **this assumes fully stocked stands, growing at the most optimistic rate, with every acre on the parcel being fully stocked.**

Pages 12-14: Mr. Just states that I have failed to consider the productivity of ponderosa pine. He has stated this in the past. **In my report dated February 15, 2005, I considered ponderosa pine productivity** on all of the soils which Mr. Just stated is more productive for ponderosa pine. The highest productivity table (of **six** presented), using a mix of Douglas-fir and ponderosa pine was **77.266 cf/ac/yr.** At that time Mr. Just presented a table showing an average productivity (using a mix of Douglas-fir and ponderosa pine) of **71 cf/ac/yr.** From this comparison it can be seen that I actually had a higher productivity rating than he did (at that time). In his latest letter, dated 4/18/06, he presents a table (using a mix of Douglas-fir and ponderosa pine) showing 88.12 cf/ac/yr. He arrives at this number by changing some of the data used in his original table and splitting the Dixonville-Philomath-Hazelair complex.

I will address the issue using Mr. Just's Exhibits and considering ponderosa pine growth on the complex taken as one soil type. This soil type is a complex because it is too difficult to separate. Whether this soil should be considered as one type or three types is a procedural issue and will be addressed by Mr. Cornacchia. My original table used 54 and 63 cf/ac/yr of Douglas-fir for the productivity figures. Using Mr. Just's Exhibits for ponderosa pine productivity and site classes, I arrive at 85 cf/ac/yr for the complex. Plugging this number (shown in bold print) into Mr. Just's table (as presented in his 4/18/06 letter) results in the numbers shown below. I have also highlighted the Hazelair (52D), Philomath (108C) and Witzel (138E&G) soils, because these are changed from Mr. Just's original table. In the case on the Hazelair and Philomath soils, Mr. Just has **changed the numbers for the Hazelair from 92 to 141 cf/ac/yr and the Philomath from 104 to 168 cf/ac/yr.** For the Witzell soil Mr. Just has **changed** from Douglas-fir to ponderosa pine. It is not entirely clear where these **new numbers** come from but they do **increase the productivity ratings from his original table.** A **final point** regarding the ponderosa pine ratings. These ratings are taken from the *Establishing & Managing Ponderosa Pine,* which is careful to note that these ratings are based on an extremely small sample, in most cases from only **one site**. Therefore, the statistical validity is marginal at best.

Soil Unit	Acres	Species	Site Index	Cf/Ac/Yr	Total Cu.Ft. Productivity
28C	79.842	DF	NA	40	3,193.680
41C	12.157	DF	109	152	1,847.864
43C	10.161	**PP**	NA	**85**	**863.685**
43E	28.514	**PP**	NA	**85**	**2,423.690**
52D	13.864	**PP**	**92**	**141**	**1,954.824**
78	15.009	DF	125	169	2,536.520
102C	34.574	DF	NA	50	1,728.700
105A	11.637	DF	NA	50	581.850
108C	9.746	**PP**	**104**	**168**	**1,637.390**
113C	0.371	DF	107	149	55.279
125C	9.042	DF	NA	30	271.260
125D	3.950	DF	NA	30	118.500
135E	27.358	DF	160	154	4,213.130
138E	27.256	**PP**	**NA**	**78**	**2,125.970**
138G	37.011	**PP**	**NA**	**78**	**2,886.080**
	320.492				**26,438.422**

Total - 26,438.422 cu.ft. ÷ 320.492 ac. = 82.493 cf./ac./yr.

The above table is the **seventh** table presented to date; all of the tables show a productivity of **less than 85 cf/ac/yr.** These tables have used all of the different data available, **including the new data presented in each new letter from Goal One. All of them show the parcel is not capable of producing 85 cf/ac/yr. regardless of the numbers used, or number of times Mr. Just presents new numbers.**

I have tried to respond to every point in Mr. Just's letter dated April 18, 2006. In the instances where I feel the issue is procedural, I have left the question for Mr. Cornacchia to answer. I have tried, to the best of my ability, to decipher his data, which in many cases is taken out of context, with no supporting evidence, or with cited Exhibits which do not support his statements. He has repeatedly shown his lack of knowledge with tree species grading, scaling and how they are bought and sold in the marketplace. He repeatedly alters his responses, based on my presentation of the information, then accuses me of presenting **new information**, after I response to faulty data presented by him

Throughout all of Mr. Just's letter he has repeatedly talked about carrying out forest management practices, which in some instances may be feasible, but in most cases are extremely expensive and out of the question for the majority of tree farm owners. In most cases he cites activities being carried out under the guise of "reasonable forest management practices". As a consulting forester working with small land owners I have rarely met anyone willing to go into the hole financially, in order to establish a tree farm; let alone for species as low in value as ponderosa pine and other species mentioned by Mr. Just.

For all of the above reasons, combined with 28 years of professional experience and years of trying to manage sites similar to this, I stand by my calculations of productive **"merchantable"** timber on the Dahlen parcel. All of the data for my projections are in my original analysis; I will not repeat them here.

At this point I would respectfully ask the Board of Commissioners to consider the question of when the line of "reasonable forest management practices" is passed. Is doing anything regardless of cost "reasonable" and is calculating maximum productivity of a forest parcel reasonable for a site that my years of experience tell me is impossible to fully stock, let alone produce top dollar income?

Sincerely,

Marc E Seidl

FORESTRY HANDBOOK

Second Edition

Edited for the Society of American Foresters

by

KARL F. WENGER

EXHIBIT 1-1

A WILEY-INTERSCIENCE PUBLICATION

JOHN WILEY & SONS

NEW YORK • CHICHESTER • BRISBANE • TORONTO • SINGAPORE

Table 60. Yield Tables Fully Stocked Acre, Trees 11.6 in Dbh and Larger (Ponderosa pine)
Entire Range

Basal Area in Square Feet

Age (year)	Site index (ft)												
	40	50	60	70	80	90	100	110	120	130	140	150	160
20	—	—	—	—	—	—		2	4	9	16	33	60
30	—	—	—	—	—	3	8	18	35	64	95	126	154
40	—	—	—	3	7	15	34	63	102	138	168	199	228
50	—	—	3	8	19	39	83	115	153	186	217	246	272
60	—	2	5	16	40	78	117	150	185	217	248	273	295
70	1	5	13	34	73	110	145	178	209	236	263	284	305
80	3	10	25	62	100	135	169	199	226	251	273	292	310
90	6	17	45	88	122	155	188	215	239	259	278	297	314
100	10	29	69	106	140	172	200	225	245	264	282	300	317
110	15	46	87	122	154	183	209	231	249	268	—	—	—
120	23	62	101	136	165	192	215	235	252	270	—	—	—
130	34	77	112	146	174	198	219	238	255	272	—	—	—
140	47	87	122	154	180	202	222	240	257	273	—	—	—
150	57	96	130	160	185	205	224	242	258	273	—	—	—
160	66	103	137	165	188	207	226	243	258	273	—	—	—
170	73	110	142	169	190	209	227	243	258	273	—	—	—
180	79	116	146	172	192	211	228	243	258	273	—	—	—
190	85	121	150	175	194	212	228	243	258	273	—	—	—
200	90	125	154	177	195	213	228	243	258	273	—	—	—

Average Diameter Breast High, in Inches

20	—	—	—	—	—	—	—	12.7	12.8	12.9	13.0	13.2	13.5
30	—	—	—	—	—	12.7	12.8	12.9	13.2	13.4	13.7	14.1	14.6
40	—	—	—	12.7	12.8	12.9	13.1	13.3	13.7	14.1	14.5	15.0	15.6
50	—	—	12.6	12.8	12.9	13.2	13.5	13.8	14.3	14.8	15.4	15.9	16.6
60	—	12.6	12.7	12.9	13.2	13.5	14.0	14.4	15.0	15.6	16.3	16.9	17.6
70	12.6	12.7	12.9	13.1	13.5	14.0	14.6	15.1	15.7	16.4	17.2	17.9	18.7
80	12.7	12.8	13.1	13.4	13.9	14.5	15.2	15.8	16.5	17.3	18.2	18.9	19.8
90	12.8	13.0	13.3	13.8	14.4	15.1	15.8	16.6	17.4	18.2	19.2	20.0	21.0
100	12.9	13.2	13.6	14.2	14.9	15.7	16.5	17.4	18.3	19.2	20.2	21.2	22.2
110	13.0	13.4	14.0	14.6	15.5	16.3	17.2	18.3	19.2	20.2	—	—	—
120	13.1	13.6	14.4	15.1	16.0	16.9	18.0	19.1	20.2	21.3	—	—	—
130	13.2	13.9	14.7	15.6	16.5	17.6	18.8	20.0	21.2	22.4	—	—	—
140	13.4	14.2	15.0	16.0	17.1	18.3	19.5	20.9	22.2	23.5	—	—	—
150	13.6	14.4	15.4	16.4	17.7	19.0	20.3	21.8	23.2	24.6	—	—	—
160	13.8	14.6	15.7	16.8	18.3	19.7	21.1	22.7	24.2	25.8	—	—	—
170	14.0	14.9	16.0	17.3	18.9	20.4	22.0	23.6	25.3	27.0	—	—	—
180	14.2	15.2	16.4	17.8	19.5	21.1	22.8	24.5	26.4	28.2	—	—	—
190	14.4	15.5	16.8	18.3	20.0	21.7	23.6	25.5	27.5	29.4	—	—	—
200	14.6	15.7	17.1	18.8	20.5	22.4	24.4	26.5	28.6	30.6	—	—	—

Source: *Ibid.*

EXHIBIT 1-2

Table 60. (Continued)

Age (year)	Site index—in feet												
	40	50	60	70	80	90	100	110	120	130	140	150	160
	Cubic-Foot Volume,[a] Including Stump and Tip But Not Bark												
20	—	—	—	—	—	—	—	40	120	280	530	1,060	1,880
30	—	—	—	—	—	60	200	470	970	1,860	2,750	3,760	4,910
40	—	—	—	30	120	340	820	1,740	2,770	3,990	5,230	6,580	7,950
50	—	—	30	150	410	970	2,060	3,230	4,600	6,170	7,670	9,260	10,780
60	—	30	120	400	990	2,040	3,280	4,710	6,320	8,080	9,830	11,520	13,140
70	—	90	310	870	1,870	3,090	4,440	6,110	7,910	9,730	11,590	13,380	15,080
80	50	220	710	1,650	2,720	4,110	5,540	7,310	9,210	11,100	13,030	14,880	16,640
90	110	470	1,310	2,400	3,520	5,010	6,520	8,310	10,280	12,230	14,200	16,110	17,940
100	240	870	1,960	3,100	4,270	5,790	7,310	9,130	11,140	13,140	15,160	17,430	19,020
110	460	1,370	2,560	3,710	4,890	6,420	7,950	9,780	11,800	13,900	—	—	—
120	780	1,820	3,060	4,220	5,410	6,950	8,490	10,330	12,360	14,540	—	—	—
130	1,140	2,210	3,460	4,640	5,850	7,400	8,950	10,800	12,840	15,070	—	—	—
140	1,450	2,550	3,810	5,000	6,230	7,780	9,340	11,200	13,250	15,500	—	—	—
150	1,720	2,840	4,110	5,320	6,560	8,120	9,680	11,550	13,600	15.850	—	—	—
160	1,950	3,080	4,360	5,600	6,840	8,420	9,990	11,850	13,950	16,200	—	—	—
170	2,160	3,300	4,590	5,840	7,090	8,680	10,270	12,150	14,250	16,550	—	—	—
180	2,360	3,510	4,810	6,060	7,320	8,920	10,500	12,400	14,550	16,900	—	—	—
190	2,550	3,710	5,020	6,270	7,530	9,140	10,750	12,650	14,850	17,250	—	—	—
200	2,730	3,900	5,220	6,470	7,730	9,340	10,950	12,850	15,100	17,600	—	—	—
	Board-Foot Volume,[b] Scribner Rule												
20	—	—	—	—	—	—	—	100	400	900	1,900	3,800	7,300
30	—	—	—	—	—	200	1,000	2,500	5,100	8,400	11,800	16,000	21,400
40	—	—	—	100	600	1,900	4,300	7,500	12,100	17,600	23,100	29,200	36,500
50	—	—	100	700	2,300	5,000	9,200	14,000	20,300	27,400	34,600	42,500	51,300
60	—	—	600	2,200	5,100	9,100	14,800	21,000	28,400	37,000	45,800	55,300	65,400
70	—	300	1,800	4,300	8,500	13,800	20,500	27,800	36,400	46,200	56,500	67,300	78,800
80	100	900	3,500	7,000	12,200	18,500	26,000	34,200	43,900	54,800	66,500	78,600	91,300
90	200	2,000	5,500	10,000	16,000	23,000	31,200	40,200	50,800	62,700	75,800	89,200	103,000
100	400	3,400	7,800	13,100	19,700	27,200	36,100	45,800	57,100	70,000	84,400	99,100	113,900
110	800	5,000	10,200	16,200	23,100	31,100	40,600	50,800	62,900	76,700	—	—	—
120	1,500	7,000	12,500	19,000	26,200	34,700	44,600	55,400	68,200	82,800	—	—	—
130	2,500	8,900	14,700	21,500	29,000	38,000	48,300	59,600	73,000	88,300	—	—	—
140	3,800	10,700	16,700	23,700	31,500	40,900	51,700	63,400	77,400	93,200	—	—	—
150	5,200	12,400	18,500	25,700	33,800	43,600	54,800	66,900	81,400	97,600	—	—	—
160	6,600	13,900	20,100	27,500	35,900	46,100	57,600	70,100	84,900	101,500	—	—	—
170	7,900	15,300	21,600	29,200	37,800	48,400	60,100	73,000	88,000	105,000	—	—	—
180	9,000	16,600	23,100	30,900	39,600	50,500	62,400	75,600	90,900	108,200	—	—	—
190	10,000	17,800	24,500	32,500	41,300	52,400	64,600	78,000	93,600	111,200	—	—	—
200	11,000	19,000	25,800	34,000	43,000	54,200	66,700	80,200	96,100	114,100	—	—	—

[a]To nearest 10 ft^3.

[b]In 16-ft logs above 2-ft stump to 8-in top; volumes to nearest 100 bd ft.

EXHIBIT 1-3

EM 8805 • May 2003
$24.00

Establishing & managing ponderosa pine in the Willamette Valley

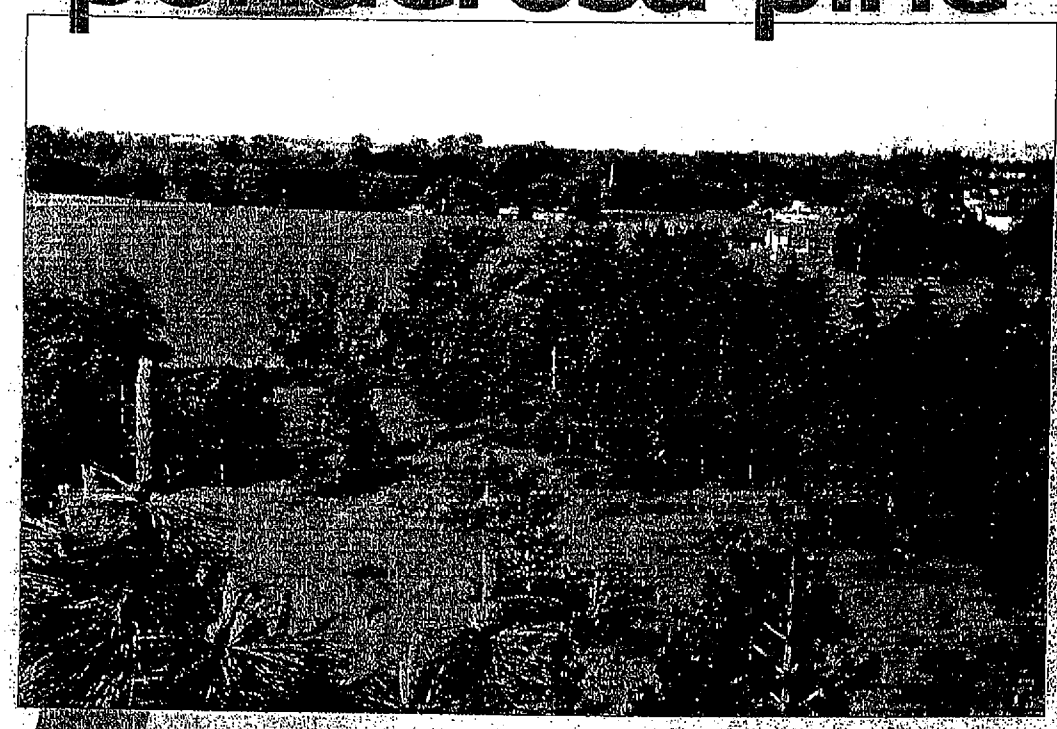


EXHIBIT 2-1

OREGON STATE UNIVERSITY
EXTENSION SERVICE

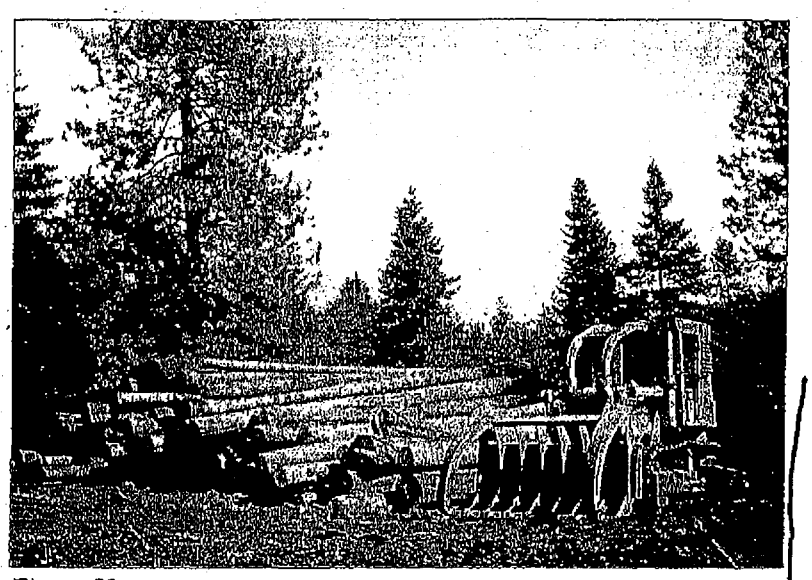


Figure 53.—Ponderosa pine should be felled, bucked, skidded, and delivered to the mill as quickly as possible to avoid blue stain problems.

in the shortest time possible because of problems that can arise from a blue stain fungus carried by ambrosia beetles.

These insects quickly invade a cut tree and deposit the stain organism along exposed portions of the tree (severed limbs and ends of the log). The result is a bluish stain in the log. The consequence to the woodland owner (depending on the log grade) is a log valued much less than if the stain were not present.

Blue stain spreads faster in the warmer, drier months—the typical time of year for private woodland timber harvests—than in the cooler, wetter months.

Log grades

Log grades that purchasers use are related to the amount of certain qualities of wood products (lumber, veneer, pulp) that can be recovered from a given log. Consideration of grade recovery from logs is seldom an issue when merchandising Douglas-fir and whitewoods. However, due to the growth characteristics of second-growth ponderosa pine, lumber recovery becomes an extremely important factor in determining log grade(s) in ponderosa pine with scaling diameters of 12 inches or larger.

Lower grade pine logs have no trouble meeting recovery requirements. The lowest quality boards, along with veneer cores and backs, are produced from this smaller diameter material.

Sellers of 5- to 11-inch logs, however, are facing stiff competition from pine growers in the southeast United States along with lower quality whitewoods from the Pacific Northwest. Ample supply from these sources most likely will keep lower quality and small-diameter pine at relatively low prices for the foreseeable future. Look for values to be approximately 50 to 60 percent of those for material 12 inches and larger and for #4 Sawmill ponderosa pine logs.

With relatively low values for smaller diameter pine, there may be an economic incentive for longer rotations, which produce a larger percentage of logs with scaling diameters of at least 12 inches in diameter, one of the requirements for a #4 sawmill log.

It also might be necessary to ship the logs to high-value pine markets east of the Cascades or in southwest Oregon. Substantial increases in the supply of ponderosa pine logs from the Valley in the future may induce local manufacturers to use smaller diameter logs, thus lowering trucking costs and increasing profit margin. However, at this time, sellers of Valley pine logs under 12 inches in scaling diameter do not realize profits comparable to those from other conifer species in the Valley.

It is an exceptional case when a Douglas-fir or whitewood log satisfies the size requirement (12 inches minimum scaling diameter for both #2 fir logs and #4 pine logs) and exterior characteristics of a #2 Sawmill, and yet is not assigned that grade due to the scaler's determination that the log will not satisfy recovery requirements.

Ponderosa pine is just the opposite. A large percentage of Valley pine logs 12 inches and larger in scaling diameter will be downgraded to a #5 Sawmill for failure to yield 50 percent or more of the net scale in the form of #2 Common boards.

Managing the loose knot problem

Dead limbs are the culprit. In ponderosa pine, the consequence of dead limbs is encased knots (loose knots) within the bole of the tree. Loose knots are not allowed in #2 Common pine lumber.

EXHIBIT 2-2

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September 8, 2004

Lane County Board of Commissioners

RE: Lane County File #PA 02-5838, Ogle; Response to Goal One Coalition Letters dated August 6 and 19, 2004

Members of the Board of Commissioners:

In conjunction with my testimony, which I presented on Wednesday afternoon, July 14, 2004, and my letter dated July 26, 2004, I have enclosed the following written reponse to the August 6 and 19 Goal One letters written by Jim Just. I have addressed each issue as presented in the letters, most of which I also addressed with my testimony. I am answering these questions as a qualified, Society of American Foresters Certified Professional Forester (#2953), with 27 years of experience including 17 years as a consultant, with Bachelor of Science (Cal Poly, SLO) and Master of Forestry (Oregon State) Degrees.

Responses to questions raised in August 6, 2004, letter from Goal One.

Page 2: Mr. Just states that I have reclassified a substantial portion of the NRCS-identified 107 and 108 Philomath units. From an on site analysis I am stating that these areas of extremely thin soils over rock, with exposed rock showing in many places, are incapable of supporting tree growth. Trees are not growing there now; trees were not growing there 55 years ago (see Photo Exhibits 1-1 and 2). I am not retyping the soils, I am making an **on site observation** that trees will not grow here; the primary reason being that the soil depth is limited, or nonexistent due to rock. There is not enough soil for tree roots to establish themselves.

Page 3: Mr. Just cites Land Use Planning Notes Number 3, April 1998, as the methodology for determining site productivity. Number 1 is that plots must be taken to measure productivity of a soil type. This is true. This is how the NRCS and ODF have arrived at the productivity figures which are published in their tables. These are the productivity figures I am using, I am not trying to create new productivity tables. I am simply taking site trees as described in step number 2, so that I can then use the productivity tables. I **have not** deviated from the methodology as described in these notes.

Page 4: Mr. Just states that I do not provide any productivity data for the "grassland with exposed rock". From an on site analysis and aerial photos from 1952 and 2000, it can be seen that trees have not grown in these areas for the last 55 years (see Exhibits 1 and 2). Since the 1952 photos show no trees it can logically be assumed that trees did not grow for a time period prior to this. The same conditions exist today that existed 55 years ago; very thin soils on top of rock, with not enough soil for a tree to establish a root system. For these reasons I have assigned a productivity rating of "0" to these areas (see Exhibit 1-1)

Mr. Just then states that I concede no site trees were measured. This is not true. I **state** in my July 26th letter that I bored site trees on the property. I did not bore site trees in the grassland areas because **no trees exist** to bore. He then states that a more detailed soil survey is required. I am not changing a soil type; I am merely stating that from a site analysis, and looking at aerial photos, no trees have grown in these areas as far back as the records go and are not growing there now.

Page 4: Mr. Just states I do not give a date for my site analysis; I visited the property on **July 26, 2004**. At this time I bored ten site trees (shown on page 3). I have visited the site previously; this is the date I bored site trees. From a forestry standpoint this is the accepted standard for industry and the U.S. Forest Service as well. This is also the standard as cited by Mr. Just (see page 4 of his August 6th letter).

Page 4: Mr. Just states I did not submit a soils report; I **will repeat again** that I am not determining a soil type, I am making a **site specific** observation that no trees are growing in these areas. I have included aerial photos delineating the areas under discussion (see Exhibits 1 and 2). The approximate scale for these photos has also been included on the photos. I bored the site trees in the areas underlaid by the Philomath soils (107C and 108F). I bored **ponderosa pine** in **these areas (soil types 107C and 108F)** because Mr. Just has accepted the **Douglas-fir** growth figures from Lane County Soil tables for the other soils; the McDuff clay loam (81D), the Panther silty clay loam (102C) and the Ritner cobbly silty clay loam (113E & G). These soils have a high growth rate for Douglas-fir; in fact Douglas-fir growth will exceed ponderosa pine growth on the better soils. **At no time** has Mr. Just disagreed with my original Douglas-fir growth figures **for these soils. At no time** has he presented any ponderosa pine growth figures for these soils. Therefore I did not bore ponderosa pine trees on these soil types.

Page 4: Mr. Just states that I have not noted any limitations encountered on the site. **I will repeat again,** from an on site analysis it can be seen that there is exposed rock throughout the property. This would indicate a very thin soil layer. The absence of trees (see aerial photos) would also indicate thin soils; trees need enough soil for roots to establish themselves. These statements are made from a **visual** observation, combined with years of experience trying to establish trees in this type of ground. Trees will not grow from rock or in very shallow soils. I cannot make statements concerning an overview of the geology, bedrock, etc. because I am not a soil scientist. I did not describe on-site and adjacent hydrology, including surface and subsurface features, intermittent versus perennial, flood plain and floodways and other related information because a **water expert has already done so**. The remaining points brought up by Mr. Just, such as describing landforms and topography, confirming the relationship of landforms to soil mapping units, describing revised soil mapping units with their range of characteristics and explaining how and why they differ from NRCS mapping, are confusing. I am not sure what any of this has to do with my on site observation that trees have not, are not and will not grow on the rocky, thin soiled areas. Mr. Just also infers (although this is very confusing) that I have not descibed the site or the natural vegetation present. In my original productivity analysis submitted in December, 2003, I describe the aspect, slopes and vegetation on the parcel. Apparently Mr. Just did not read my original analysis.

Page 4: Following these statements Mr. Just then says that the Philomath soils (107C and 108F) were "typed". He then states that this report (I am not sure which report he is referring to) has not been reviewed by ODF to confirm ODF-approved methodology was followed. I do not understand the point in these statements; I simply used the soil types **as delineated by Lane County** to determine where these soils exist on the subject parcel.

Mr. Just then states that it is not explained how adequately stocked plots were identified and delineated. I have **no idea** what he means by this statement; adequately stocked plots of what? I bored site trees to determine the site index, then used growth figures from tables; I did not cruise the property to determine volumes or stocking levels. If I had it would show much lower volume figures per acre than the tables show, as the productivity tables **assume full stocking**. Full stocking levels are not needed in order to take site trees. To wit: site index determines tree **height**, stocking levels determine tree **diameter.** Tree **diameters are not taken** to determine a site index.

Last paragraph page 4: The next statement "It has not been that a sufficient number of appropriate dominant or co-dominant site trees selected and sampled for each plot" is indecipherable. I cannot figure out what he is trying to say here. In my July 26th letter (see page 2) I state that I bored trees to determine the site index, however, I did not include the data collected. I am providing the data now (see below). Mr. Just then states that "No data on plot and tariff trees is included in the record". Plots are taken for information on tree species, volume, log grades, etc.; tariff trees are one method of taking sample trees for a cruise. Site trees to determine site index are just that, they are not "plots" or "tariff trees". Site trees are simply individual trees taken within a stand to determine site index; they **do not** have to be taken in plots and tariff trees have **nothing** to do with site index, they are sampled trees which are used to determine **volume** per acre. You **do not** have to take plots or tariff trees to accurately determine site index.

Site index is a function of two factors, climate and soil (see Exhibit 3). Site index (or site quality) is changed only by modifying the soil or climatic factors. Climatic conditions can vary substantially from site to site, this occurs naturally. The soil tables created for growth are extrapolated from huge sample data bases and then averaged for that particular soil. In other words; soil productivity figures for a particular soil are averages for that soil type over a wide range of conditions. These conditions vary from site to site depending on aspect, slope, rainfall, temperature, etc. These are the climatic factors mentioned above. If you take the **same soil** and place it on a north aspect you will get better growth than if the soil is on a south aspect. The **same soil** will produce higher growth in an area of higher rainfall than another area. In short, different conditions on the site produce different growth rates from the same soil. These differences show up in tree growth which can be measured by boring trees to obtain a site index. In other words the growth of the trees is a reflection of the site index; i.e., the **same soil** can have many **different** site index numbers. This is the reason a **site specific** analysis is conducted.

Site Trees Bored on the Site:

Breast Height Age	Total Age*	Total Height	Site Index**
47	54	67'	100
48	55	77'	110
47	54	53'	80
52	59	81'	106
53	60	81'	110
47	54	60'	90
52	59	79'	110
46	53	68'	100
50	57	77'	105
48	55	73'	105
			1,016

Throwing out the lowest site index of 80 leaves 936 ÷ 9 = Site Index 104

*Total age includes adding 7 years, which errs on the optimistic side (see Exhibit 3). You must add between 5 and 10 years to a breast height age; 5 years being Site I ground, 10 years being Site IV ground. The Ogle parcel **is not** Site I ground.
**Interpolated using Meyer's eastern Oregon tables (see Exhibit 3).

From my on site analysis and photo delineation of the soil types (using a light table and overlaying the **Lane County soil maps** on the aerial photos, see Exhibit 1) in question, I have created the following tables. These soil maps are in the record already. To arrive at the acreages shown I used the acres presented by Lane County and took proportions of these acres by dividing the amount of grassland shown on the photo with the acreages presented by the county. Since the counties acreages are the **accepted acreages** this is a more accurate calculation of acres than using the approximate scale shown on the photo.

I used a figure of 110 cf/ac/yr. for the ponderosa pine growth for this site index of 104(see Exhibit 4). If I use the ponderosa pine table presented by Mr. Just (see Exhibit 5), and follow the included directions on how to obtain a growth figure (also Exhibit 5-1) I arrive at a figure of 108 cf/ac/yr for this site class. This figure was obtained using interpolation (see Exhibit 5-3). I will use the higher figure to error on the optimistic side. Using the tables presented by Mr. Just will result in lower figures, therefore I have used the eastern Oregon tables. Mr. Just presents higher figures (141 cf/ac/yr) using a site index of 120. However, he does not show where he obtained a site index of 120.

Note on using eastern Oregon productivity figures: On Page 5 Mr. Just states that I am wrong in using eastern Oregon site index tables because I should be using northern California and southwest Oregon site index tables, which **do not exist according to his own Exhibits** (see Exhibit 5-1). Mr. Just then states that I should be using data compiled from **two very limited** research papers from northern California. I am not sure how limited data from a different state, further away from the Willamette Valley than eastern Oregon, is more appropriate for use than the eastern Oregon tables. I then explain how I come up with my productivity figures; from trees bored on the site, I obtained a site index number using the eastern Oregon site index created by Meyer. I have also explained (see above) that using the tables presented by Mr. Just result in lower productivity numbers.

The DF productivity figures are from both my original tables and Mr. Just's tables.

In Tax Lot 303 there are 8.766 acres within the 107C soil type and 4.715 acres within the 108F soil type which are thin soils over rock; in Tax Lot 304 there are 2.575 acres within the 107C soil type and 1.897 acres within the 108F soil type which are thin soils over rock. These areas have not grown trees for as long as aerial records have been kept (see Exhibits 1 and 2). I have shown these acres on the bottom of each table. I have used 45 cu.ft./ac./yr. for the Panther 102C soil since this is the number shown on the SCS tables (see Exhibit 6).

Note on the Panther 102C soil: On page 5 (Goal One August 6, 2004 letter) Mr. Just states that I am wrong in using 45 cf/ac/yr for the Panther soil unit. I obtained this figure from the most recent table available with a figure. The 1997 Lane County Soil Ratings Table has a rating of none for this soil. Therefore I went back in time to the **most recent** table with a rating. This is the February , 1990 Foresters Memo published by ODF and included with my original analysis. This is the memo that Mr. Just stated unequivocally **did not exist.** He then found an **older** Foresters Memo which has a 50 cf/ac/yr rating. Both of these tables begin by stating that **if a rating has changed, the new number supersedes the old number.** Therefore, I have used 45 cf/ac/yr for the Panther soil.

PRODUCTIVITY TABLES FOR TAX LOTS 303 &304

Tax Lot 303	Acres	Growth/Year	Total
Growth			
81D McDuff clay loam	5.600	158 Cu.Ft./Ac.	884.80 Cu.Ft.
102C Panther silty clay loam	1.747	45 Cu.Ft./Ac.	78.615 Cu.Ft.
107C Philomath silty clay*	9.510	110 Cu.Ft./Ac.	1,046.10 Cu.Ft.
108F Philomath cobbly silty clay*	2.327	110 Cu.Ft./Ac.	255.97 Cu.Ft.
113G Ritner cobbly silty clay loam	6.914	149 Cu.Ft./Ac.	1,030.186 Cu.Ft.
Grassland with exposed rock	13.481	0 Cu.Ft./Ac.	0 Cu.Ft.
Totals	39.579		3,295.671 Cu.Ft.

Average Growth Potential -- 39.579 Acres ÷ 3,295.671 Cu.Ft. = 83.268 Cu.Ft./Ac./Yr.

Tax Lot 304 Growth	Acres	Growth/Year	Total
102C Panther silty clay loam	12.936	45 Cu.Ft./Ac.	582.120 Cu.Ft.
107C Philomath silty clay*	10.278	110 Cu.Ft./Ac.	1,130.580 Cu.Ft.
108F Philomath cobbly silty clay*	3.731	110 Cu.Ft./Ac.	410.410 Cu.Ft.
113G Ritner cobbly silty clay loam	2.741	149 Cu.Ft./Ac.	408.409 Cu.Ft.
Grassland with exposed rock	4.472	0 Cu.Ft./Ac.	0 Cu.Ft.
Totals	34.158		2,531.519 Cu.Ft.

Average Growth Potential -- 34.158 Acres ÷ 2,531.519 Cu.Ft. = 74.112 Cu.Ft./Ac./Yr.

*These growth figures are for ponderosa pine for Site Index 104 (see Exhibit 4). All other growth figures are for Douglas-fir.

A portion of the acres delineated as grassland with exposed rock are underneath the two powerlines crossing the property (see Exhibit 1). These areas will never grow trees due to the power companies continually cutting them down to keep their corridors clear. On page 5 (Goal One Letter) Mr. Just states that just because you cannot grow trees under the powerlines (due to powerline regulations) does not mean I should not consider this ground. Michael Farthing will address this issue.

The productivity tables shown below deduct the remaining powerline acreage, which have no trees at the present time and will not have trees in the future.

Tax Lot 303 Growth	Acres	Growth/Year	Total
81D McDuff clay loam	5.600	158 Cu.Ft./Ac.	884.80 Cu.Ft.
102C Panther silty clay loam	0.287	45 Cu.Ft./Ac.	12.915 Cu.Ft.
107C Philomath silty clay*	7.915	110 Cu.Ft./Ac.	870.650 Cu.Ft.
108F Philomath cobbly silty clay*	2.327	110 Cu.Ft./Ac.	255.970 Cu.Ft.
113G Ritner cobbly silty clay loam	6.914	149 Cu.Ft./Ac.	1,030.186 Cu.Ft.
Powerline	3.055	0 Cu.Ft./Ac.	0 Cu.Ft.
Grassland with exposed rock	13.481	0 Cu.Ft./Ac.	0 Cu.Ft.
Totals	39.579		3,054.521 Cu.Ft.

Average Growth Potential -- 39.579 Acres ÷ 3,054.521 Cu.Ft. = 77.175 Cu.Ft./Ac./Yr.

Tax Lot 304 Growth	Acres	Growth/Year	Total
102C Panther silty clay loam	12.326	45 Cu.Ft./Ac.	554.670 Cu.Ft.
107C Philomath silty clay*	9.329	110 Cu.Ft./Ac.	1,026.190 Cu.Ft.
108F Philomath cobbly silty clay*	2.782	110 Cu.Ft./Ac.	306.020 Cu.Ft.
113G Ritner cobbly silty clay loam	2.741	149 Cu.Ft./Ac.	408.409 Cu.Ft.
Powerline	2.508	0 Cu.Ft./Ac.	0 Cu.Ft.
Grassland with exposed rock	4.472	0 Cu.Ft./Ac.	0 Cu.Ft.
Totals	34.158		2,295.289 Cu.Ft.

Average Growth Potential -- 34.158 Acres ÷ 2,295.289 Cu.Ft. = 67.196 Cu.Ft./Ac./Yr.

*These growth figures are for ponderosa pine for Site Index 104 (see Exhibit 4). All other growth figures are for Douglas-fir.

Page 5: Mr. Just states that virtually all of the Valley ponderosa pine was harvested in the years following settlement. This is true; along with every other conifer species in the valley.

Mr. Just then states a site index of 104 from *Establishing and Managing Ponderosa Pine in the Willamette Valley.* In this paper it **repeatedly** states that this data is from a **very small sample** and **should not be used** at this time, until more long term data can be collected. He then makes a quantum leap to a site index of 150 (without showing where this comes from) and states this site would have a growth productivity of 210 cf/ac/yr. This type of growth can only be obtained on the **very best (Site I ground)** ponderosa pine sites. These sites for pine are, **generally speaking,** in eastern Oregon. On high site ground in western Oregon, Douglas-fir will easily out grow and outproduce ponderosa pine. The primary example of this is coastal ground where ponderosa pine would be very difficult to find, if it could be found at all.

Mr. Just points out that I challenge the capability of the Panther soil to support hybrid poplar. I stated that hybrid poplar will not grow in the Panther soil on **this site, not that it would not grow in the Panther soil.** Hybrid poplars attain the best growth on deep, fertile, alluvial soils that have adequate moisture (see Exhibit 7). This site has very shallow soils (or none at all on the exposed rock), a south to southwest aspect (hot and dry summers, harsh tree growing conditions) and does not have adequate water.

Hybrid poplar plantations are established in the same manner as an agricultural crop. In fact the state of Oregon considers it an agricultural crop through the age of 12 years, because it was originally intended that the trees would be harvested between 8 to 10 years old. To establish a poplar plantation, all old stumps must be removed, the soil tilled by plowing or ripping, competing vegetation must be controlled and drainage must be improved by using either surface ditches or subsurface tile (see Exhibit 7). These are agricultural practices which are done using machinery; **plowing and improving drainage are not forestry practices.** The use of such machinery means the slope of the land should not be steep, preferably under a 5% slope. The Ogle parcel is considerably steeper than 5%, in places it exceeds 35%. This is far to steep for agricultural machinery to operate on. For hybrid poplar stands to approach the productivity figures cited by Mr. Just the landowner must carry out intensive weed control, fertilize, thin, prune and protect the stand from animals, insects and diseases (see Exhibit 7). Especially important is weed control. If not controlled the hybrids will grow slowly and may not survive (see Exhibit 7). The majority this of these activities are done with machinery. The poplar stands cited by Mr. Just, with the accompanying growth figures, are only capable of these growth figures because all of the above activities have been carried out.

Mr. Just cites plantations growing west of the Cascades in areas of "ample rainfall". These are plantations, on flat ground, on the western slopes of the Cascades, where rainfall is higher than the rainfall in the Willamette Valley. Rainfall in Oregon is highest on the western slopes of the coast range and second highest on the western slopes of the Cascades. The east slopes of the coast range and Cascades are in a rain shadow and are considerably drier. This is why vineyards do so well on the east slopes of the coast range. Rainfall amounts incease as you go from the coast range rain shadow to the west slopes or the Cascades. Mr. Just then states that the Panther soils are found in areas of ample rainfall and that the soil units characteristics match those of soils supporting hybrid poplar. This could be stated for dozens of soils; I am truly confused as to what this is supposed to prove. If site conditions are conducive to the growth of hybrid poplar, the tree will grow. On the Ogle parcel the on site conditions, i.e. slope, aspect, actual soil conditions, etc., will not support the growth of hybrid poplar regardless of soil type.

Page 6: Mr. Just states that a tree species is "merchantable timber" if it can possibly be marketable in the foreseeable future. This is the definition for determining whether or not a tree species can be used for reforestation; **not the determining factor** for a merchantable timber species under the marginal land definition. OAR 629-610-0050(1)(c) is not applicable to land use law. Michael Farthing will discuss this point in more detail.

Mr. Just operates a tree farm; he states that ODF assisted with reforestation planning and he received cost-share assistance and tax credits for the reforestation. Was that for the KMX trees planted or the other species planted and other reforestation activities (if any) carried out? Mr. Just does not say. In his opinion, as a landowner, **not** a professional forester or log buyer, he states that the trees growing are straight and well formed. From pictures in his own exhibits I see twisted, S shaped trees with knots left from pruned limbs that are almost as large as the bole of the tree. Mr. Just further states that his neighbor, Mr. Monroe, has reforested with KMX and his trees are now large, straight and well-formed.

In my discussions with foresters from Roseburg Lumber, Seneca and Lone Rock Timber, three companies which have planted this tree, I have gotten the opposite. They have all stated that the trees are like bushes, are incredibly limby and of very poor form. This is what I personally have observed with KMX trees. In addition, many of the trees growing are now dying from foliar diseases. In short, none of these companies will plant KMX again. Furthermore, the state foresters I have talked to, including those in Linn County, discourage planting KMX; as a professional consulting forester managing private owners small woodlands, I would **not** recommend planting KMX.

Mr. Just further states that in **limited** testing, **of the caracteristics of KMX (not actual KMX saw logs),** it produces high quality pulp and is suitable for studs and dimension lumber. Talking with mills and log buyers throughout the state of Oregon shows otherwise. The pulp is so high in resin content that it gums up the machinery in the mills; they will not use it for pulp. **No mill** will purchase **KMX logs** with a purchase order. No **mills** will purchase ponderosa pine or KMX pulp logs. There are two chip/pulp plants in the area that will **occasionally** purchase ponderosa pine pulp logs; they **will not** purchase KMX for pulp.

The final argument for merchantibility of KMX concerns the use of KMX for firewood. To begin with it is hard to conceive of someone planting KMX to grow for firewood. The next point is whether or not it makes good firewood, not just will it burn. Anything will burn, given enough fuel. Ponderosa pine is horrible as firewood. It is extremely pitchy and resinous; both of these substances create creosote in chimneys, whether burned in an open fireplace or a wood stove. Creosote creates an extreme fire hazard. Furthermore, unless ponderosa pine is extremely dry, it is hard to light and burns poorly, which creates huge amounts of smoke. In today's world this is extremely undesirable and under certain conditions in Lane County (when it is put out on the news to not burn wood due to atmospheric conditions) it is illegal. KMX has even more resin than ponderosa pine which would mean it produces even more smoke than ponderosa pine produces. Although it may happen, I have never seen anyone selling KMX as firewood from the back of their pickup.

Page 7: Mr. Just states that Monterey pine in New Zealand and Australia produce merchantable timber. This is true. He then makes a quantum leap and states that there is no reason to believe KMX will not produce merchantable timber. This is simply not true. The characteristics of the wood in KMX are different from Monterey pine just like Monterey pine is different from ponderosa pine. Because one species of pine is merchantable **does not** mean another pine species is merchantable.

Mr. Just states that I do not explain my use of a 50-year rotation cycle for my calculations. I will **repeat again;** I have used 50 years because Lane County has determined that this is the cycle which will be used. I originally used a 60-year cycle; Mr. Just assailed this as incorrect and stated I should be using a 50-year cycle as required by Lane County. Mr. Just further states that the rotation age should be changed because the 50-year growth cycle does not "constitute reasonable management practices". This is the **exact same statement** he originally made concerning the 60-year cycle I used.

Page 8: Mr. Just statements concerning the length of an appropriate growth cycle (for calculation of income) cites a graph (see Mr. Just's Exhibit 3-13, my Exhibit 8) showing the culmination of mean annual increment, the point in time that the periodic annual increment intersects the mean annual increment. While the culmination of mean increment may be 80 years that is not when a company or landowner would log in order to maximize income. Culmination of mean annual increment is the point in time that the stand is mature, not necessarily when it should be harvested (see Exhibit 8). It can be seen that the periodic annual increment peaks between 40-50 years; this is the point in time a company would log, as well as a landowner wishing to maximize their income. Up to this point in time the growth is increasing, after this point in time the growth rate is slowing down. From a companies standpoint this is the point in time where the cost of holding on to the timber is increasing because the growth is decreasing. Therefore from a profit standpoint, a company and a private landowner would harvest at this time (see Exhibit 8). As most private individual tree farmers are interested in income (or cash flow), as well as growing trees, a reasonable management practice would be to harvest between 40 and 50 years. While some owners would not harvest at this point in time, it would be for other reasons than maximizing their income.

Mr. Just sites testimony from Jesse and Jo Ann Ulloa confirming that "substantial" amounts of western red cedar and ponderosa pine were logged from the subject properties; did they go onto the property with a forester who knows how to identify trees? As I have **repeatedly** stated, **incense cedar** and ponderosa pine as well as Douglas-fir were harvested from the property. As I have **repeatedly** stated **incense cedar** did grow and does currently grow on the property, but at a considerably slower growth rate than Douglas-fir and well below the 85 cf/ac/yr standard accepted by Lane County.

I stated that prices for 250-350 year old "yellow belly" ponderosa pine, primarily from central and eastern Oregon, were not the same as 50 year old Douglas-fir 2S grade. Mr. Just states that I am incorrect because his prices were from the Grants Pass Unit, for southwestern Oregon pine and ponderosa pine peelers. I am not sure what he is trying to prove with this statement. Ponderosa pine grades are the same regardless of where the tree grows, I simply stated that the majority of old growth pine comes from central and eastern Oregon. In other words the **price** may be different in the Grants Pass Unit but the **grades** are the same as anywhere else. Mr. Just states the prices presented are for southwestern Oregon pine and ponderosa pine peelers. To **clarify; pine peelers** are an Oregon pine grade. You **cannot** have a peeler grade pine log in a 50 year old ponderosa pine tree, the rotation age being discussed in this analysis.

As a follow up to the price issue Mr. Just has presented 20 years worth of ponderosa pine prices in an August 19th letter. He presents this information as proof that ponderosa pine is a merchantable tree species. At **no point** have I stated ponderosa pine is not merchantable; my statements have been made in regards to the much lower value of ponderosa pine logs than Douglas-fir logs. Mr. Just then tries to compare 2S Douglas-fir to 2S ponderosa pine; this is comparing apples to oranges. A 2S Douglas-fir log is equivalent to a 4S ponderosa pine log (see Exhibit 9).

Notes on discussions of productivity. Mr. Just repeatedly brings up the issue of **"reasonable management practices".** Generally speaking, forest management activities carried out on forestland are conducted in order **to produce an income as well as manage the forest.** A reasonable person would want these activities to be profitable, not necessarily in the short term, but definitely over time. Most of the activities espoused by Mr. Just would cost the landowner substantial amounts of money, with very little return. Most people managing forestland seek some sort of return. Growing tree species which you cannot sell on today's market would not be a prudent or reasonable management practice. Very few people are willing to plant a tree species based on the hope that it **may be** merchantable in the future. Furthermore, there are few tree farmers who are in the business to lose money. The practices Mr. Just proposes would be prohibitively expensive to carry out and in most cases cause the landowner to lose money. These practices would also take ground out of production from an income producing standpoint.

In conclusion, as a practicing professional forester, I would not consider planting ponderosa pine, KMX, or hybrid poplar a reasonable or prudent practice to carry out. The KMX tree species is not a commercially marketable species; planting it would cost a substantial amount of money, with no return in the foreseeable future. Hybrid poplar would be all but impossible to plant and maintain on this site (see explanation on page 6), it would also be prohibitively expensive even if it was possible. Furthermore, while a market for the wood may exist in isolated areas (such as near Pendleton), it would be prohibitively expensive to truck the wood there (it is a very heavy wood, chip trucks reach their maximum weight before the truck is full). Planting valley ponderosa pine at this point in time is also a huge risk; the IPS beetle (which attacks freshly cut ponderosa pine) is becoming a real problem, currently there is not a good market for pine and even when you can sell it the delivered price paid will not cover the cost of getting the logs to a mill. As a professional forester managing private owners forestland, I **would not** recommend planting any of these species. The large amounts of capital needed to grow these trees would be better spent on brush and grass control to establish Douglas-fir, the highest value conifer growing today.

Sincerely,

Marc E Boteler

FOREST PRODUCTIVITY AND INCOME ANALYSIS
for Brad Ogle and Mark Childs -- March 1, 2006
SUBJECT PARCEL: ASSESSORS MAP NO. 18-04-11
Tax Lots 303 & 304, totaling 113.74 acres.

SUPPLEMENT TO ORIGINAL REPORT DATED JULY 7, 2005, including response to issues raised by Jim Just in February 1, 2006 letter to Lane County Planning Commission (presented by page number).

I will first try to clarify some of the issues and tables, presented by Mr. Just, which are extremely misleading.

Page 2 (Table 1 at bottom of page): Mr. Just shows a Site Index of 125 for Ponderosa Pine with a growth rate of 154 cf/ac/yr, then cites *Establishing and Managing Ponderosa Pine in the Willamette Valley* as the source for these figures. The table in this publication shows a Site Index of 104 and a growth of 110 cf/ac/yr, then cautions against putting to much weight on these figures due to the small sample size from which these figures were obtained. The latter **figures shown were presented by Mr. Just** in a previous presentation, and used by me in my analysis.

Page 6 (under prices): Mr. Just has questioned why I have not used log grades of higher value than 2 Saw. I have submitted Exhibit One showing the specifications needed for a log to be graded higher than a 2 Saw log, i.e., Peelers and Special Mill. The first requirement for these grades is age, then surface characteristics. Peelers and special mill grades require trees older than 50 years (see Tree Age column on Exhibit 1). These grades cannot be attained in a 50 year rotation, therefore they were not considered. I used the three grades which can exist in a 50 year old stand. I also used optimistic percentages of the three grades (40% 2 saw, 50% 3 saw and 10% 4 saw). From 30 years of cruising experience, I can state that these percentages of saw grades are high. Usually stands growing on Site III and IV ground (the site classes on the Ogle parcel) will have 20-25% 2 saw and 20-25% 4 saw, with the remainder being 3 saw. Using real stands growing on poor sites, such as the Ogle parcel, will actually result in lower average prices than I have used in my original report.

I have also presented Exhibit 2, showing the average stand diameter of stands at different ages, on different sites. From this exhibit it can be seen that, on **high** site III ground, the average stand diameter (at breast height) is 11". A 2 saw log must have 12" inside the bark, **at the top of the log**, to be graded a 2 saw log. An 11" tree cannot have a 2 saw log. However, 2 saw logs will exist in these stands because the diameters shown are averages. Therefore, some of the trees will be larger, and some will be smaller. A further argument could be made that thinning the stand will increase the average diameter, hence the percentage of 2 saw. This is true, in fact would be considered a reasonable and prudent forest management practice. But a thinned stand, while producing larger trees, has fewer trees. This means that the cubic foot per year per acre growth, in a thinned stand, will be less than the growth from a fully stocked stand. The tables used for projecting cubic foot growth, per acre per year, assume fully stocked stands.

To sum this up: fully stocked stands produce smaller average diameter trees, i.e., more 3 saw and 4 saw than 2 saw, but more cubic foot growth per year. Less than fully stocked stands, i.e., thinned and/or poorly stocked stands, produce larger average diameter trees, i.e., more 2 saw, but less cubic foot growth per year. Therefore, the grade mix I used for the forest income test is actually higher than an actual stand on this site class would produce.

Page 9: Mr. Just has pointed out that harvesting 16' logs would result in substantially more yield. This is true. The mills price the logs accordingly. Most mills pay top dollar for 36'-40' logs; some pay top dollar for 32'-40' logs. Shorter lengths drop off dramatically in price. If you can get a "camp run" price (meaning every log gets paid the same), there are parameters to follow. A standard in the industry is 70% of all delivered volume **shall be in 32' or longer logs**. This means that for every 16' log cut, a 36'-40' log must be cut to make up the difference. A log buyer will adjust his "camp run" price according to how much short wood they think will be delivered. If you can find a mill that will accept all 16' logs they will adjust the price down accordingly.

In summation: the mills have taken the scaling rules into account when stating a delivered log price. The standard has been 32' logs for years, now the most sought after logs are 36'-40'. The standard in eastern Oregon has been 16', primarily because of different trees species (i.e., products) and much shorter trees in this portion of the state. Mr. Just states that "reasonable management practices" would include selecting a log length that would maximize income. **In western Oregon, cutting long logs maximizes income.**

Final Paragraph Page 9: Mr. Just states again that I have assumed that only grades 2S, 3S and 4S exist on the Ogle property. He then states that 32' logs would generally be expected to result in higher grading, and thus higher prices. I am not sure what this means. Why would a longer log be a higher grade, just because of length? Grades are based on characteristics of the log, primarily surface characteristics, not length. Today's biggest **price determinant is length, not diameter**. And looking at Exhibit 1 shows that the higher grades cannot be obtained in a 50 year rotation.

He then states that the two assumptions - lower grades and 32' logs - are not consistent. This is very confusing, because the two have very little to do with each other. Grades are not determined by length, lengths were established by grading/scaling bureaus to accurately reflect the products being produced. For years 8' foot studs were the norm, hence 32' logs (because this is 4 X 8'). Today the 9' stud is becoming standard in many homes, hence 36' logs (because this is 4 X 9').

In other words: the current marketplace has changed the desired log lengths, but the scale books still use 32' as the standard west of the Cascades and 16' as the standard east of the Cascades.

Goal One has also questioned why I have discussed the facts of today's timber market, specifically, long 36'-40' logs, which were not the predominant logs in 1983 markets. In fact the relevance of my discussion of current log markets was called into question.

The reason I have discussed this subject is the parameters used for the income test. **Whether or not a tree species will be used for the 1983 income test is determined by whether or not it is a merchantable species on today's market. This is the primary reason that ponderosa pine is even being considered for the productivity test; in 1983 it was virtually impossible to sell west of the Cascades.**

Page 10 (table presented at the top of the page): This table shows board feet per acre, and total volume in board feet, for each soil type. On page 9 Mr. Just states that volume totals shown, for the entire 113.74 acres, are based on growth cycles of 60 years for Douglas-fir and 40 years for ponderosa pine. Neither species uses the 50 year growth cycle which is the parameter used by Lane County for calculations of income. The volumes shown, on the table presented, for both Douglas-fir and ponderosa pine are 60 year volumes. I am not sure why Mr. Just states that the ponderosa pine volumes are for a 40 year rotation, then uses 60 year volumes. Throughout his letters, Mr. Just repeatedly makes statements of fact, then shows data which does not match the statement, or cites a source for data used in tables, then presents data (in his tables) that is different than the data shown in the sources.

However, the biggest discrepancy in the volumes (shown in Mr. Just's income test table) occurs from the use of 16' log scaling volumes. These volume figures (for 16' logs) are 22-23% higher than the 32' log volumes, which is the standard used west of the cascades. All log buyers, and foresters, are aware of this, but the 32' log volumes must be used, because that is what log prices, west of the cascades, are based on. Using 16' log volumes increases the volume figures used for the income test. Combining the 16' log volumes with the volumes attained in a 60 year rotation, rather than a 50 year rotation, inflates the volumes used for the income test by **more than 80%**. The tables for ponderosa pine do not differentiate between 16' and 32' log volumes. My guess is that these are 16' log volumes, because that is the standard for east of the cascades; growth and volume tables for ponderosa pine west of the cascades are still being developed. However, since these are the only numbers available I will use them for the following presentation of the income calculation, but I will use the 50 year volumes rather than the 60 year volumes.

The table presented here is on page 10 of Mr. Just's letter to Lane County. I have inserted the correct figures, i.e., 50 year/32' log volumes for Douglas-fir and 50 year volumes for ponderosa pine. The numbers shown (in bold print) are from the tables **presented by Mr. Just.** In other words, I have used **the data presented by Mr. Just**, but used the **correct volumes for Douglas-fir** (i.e., 32' logs, SEE MY DISCUSSION AT THE TOP OF PAGE 2), from the **correct rotation for both Douglas-fir and ponderosa pine** (i.e., 50 years). Only the corrected numbers are shown in bold print.

VOLUME TABLE FOR OGLE PARCEL
(as presented by Mr. Just, **bold** print my changes)

#	Soil Name	Acres	Site Index	bd.ft./ac.	total volume (board feet) DF	PP
43C	DPH Complex	6.64				
	Dixonville (30%)	1.99	109	**22,321**	**44,419**	
	Philomath (30%)	1.99	104	**12,488**		**24,851**
	Hazelair (25%)	1.66	120	**20,912**		**34,714**
43E	DPH Complex	0.44				
	Dixonville (30%)	0.15	109	**22,321**	**3,348**	
	Philomath (30%)	0.13	104	**12,488**		**3,746**
	Hazelair (25%)	0.11	120	**20,912**		**2,300**
81D	McDuff	5.60	112	**22,321**	**124,998**	
102C	Panther	14.68	-	**6,215**	**91,236**	
107C	Philomath	39.61	104	**12,488**		**494,650**
108F	Philomath	30.20	104	**12,488**		**377,138**
113E,F&G	Ritner	13.38	107	**20,099**	**268,925**	
125C	Steiwer	3.19	-	**4,136**	**13,194**	
TOTALS		113.74			**546,120**	**937,399**
TOTALS FROM MR. JUST					991,455	1,398,346

The volumes shown above differ considerably, **even though they are from the same tables, all presented by Mr. Just.** The bold figures are numbers from the correct rotation age and correct volume columns, although the ponderosa pine figures are probably high, due to the likelihood of these volumes being 16' log volumes rather than 32' log volumes. However, since no other numbers are available I will use these numbers for the income calculation.

Other notes for clarification. The Douglas-fir prices used by Mr. Just are high, because he used an average price from 1978-1982 (as stated by him midway down page 10). The prices would be lower if 1983 prices and actual grade percentages used. The ponderosa pine price is much higher than what would have been received on the open log market, since average prices, **presented by Mr. Just, included all ponderosa pine grades,** were used. In reality, if the same 40% 2 saw, 50% 3 saw and 10% 4 saw ratio used for Douglas-fir, were applied to ponderosa pine, the price would be considerably lower. A 4 saw ponderosa pine has the same specifications as a 2 saw Douglas-fir, a 5 saw ponderosa pine has the same specifications as a 3 saw Douglas-fir and 6 saw ponderosa pine has the same specifications as a 4 saw Douglas-fir. So, in order to compare apples to apples, the same ratio applied to Douglas-fir 2 saw, 3 saw and 4 saw would need to be applied to ponderosa pine 4 saw, 5 saw and 6 saw. Using these ratios with 1983 log prices yields an average price of **$205.20/MBF. Even this price is high, because 4 saw is a tough grade to attain in valley ponderosa pine** (see Exhibit 3). **The true market value** at that time (for valley pine) was in the $160-170/MBF range. The average price I have used for **Douglas-fir in my original analysis is $229.50/MBF.**

However, for the sake of argument I will present the income test using the volume figures shown above, but **prices presented by Mr. Just.**

INCOME TEST FOR OGLE PARCEL using log prices presented by Mr. Just.

Douglas-fir

2S	.40 x 546.120 mbf =	218.45 x $316 =	$ 69,030	
3S	.50 x 546.120 mbf =	273.06 x $268 =	73,180	
4S	.10 x 546.120 mbf =	54.61 x $235 =	12,833	
			$155,043	$155,043
Ponderosa Pine		937.399 x $309 =	$289,656	$289,656
				$444,699

$444,699 (income over 50 year growth cycle)÷50 years = $8,894 per year

The above figure is less than $10,000 per year. This is the yearly income for the parcel; using numbers arrived at by splitting the DPH complex (which cannot be done), assuming full stocking over the entire 113.74 acres (which would be difficult, if not impossible to attain) and using log prices which are substantially higher (≈50%) than the prices actually paid during 1983.

INCOME TEST FOR OGLE PARCEL using 1983 log prices (Douglas-fir prices shown below result in an average log price of $229.50/MBF).

Douglas-fir

2S	.40 x 546.120 mbf =	218.45 x $255 =	$ 55,705	
3S	.50 x 546.120 mbf =	273.06 x $215 =	58,708	
4S	.10 x 546.120 mbf =	54.61 x $200 =	10,922	
			$125,335	$125,335
Ponderosa Pine		937.399 x $205 =	$192,167	$192,167
				$317,502

$317,350 (income over 50 year growth cycle)÷50 years = $6,350 per year

The above figure is substantially less than $10,000 per year. This number is arrived at even with the assumption that the ponderosa pine will have 40% 4 saw grade wood.

The final point to be discussed in brought up on Page 3, under the discussion of soils with zero productivity. Mr. Just states that I have excluded approximately one third of the property from my analysis, assuming "zero" productivity for tree growth. He further states that SCS and NRCS soil maps show these areas as being underlain by the Philomath soils. He then states that I have "invented" a new soil. All I have done is make the observation that no trees have grown in these areas for decades (as shown on the attached aerial photos), no trees are growing there now; therefore, these areas have no productivity from a tree growing standpoint.

I am basing my analysis on 30 years of experience, as a certified professional forester, and years of personal experience on similar properties. The most recent example of personal experience with this type of property is one that I owned with a partner until 2004. The property had similar soil types to the Ogle property, thin soils over rock with exposed rock, a southwest aspect, and grass. We planted ponderosa pine in this area (≈15 acres) **three** times; to date only a handful of trees have survived. Just because the soil map says a certain soil exists in an area does not mean it will support trees. Productivity figures for a soil type are averages taken over a wide range of sites. If the site is similar to the average site, the productivity of trees growing on the site will match the tables. However, there are many areas of the countryside overlaid with productive soils that have no trees. Conversely, there are areas of poor soil that do support trees.

There are many reasons for this. Thin soils do not provide enough rooting depth. Soils on a south slope can reach lethal temperatures in the surface layer, sometimes reaching above 140˚F in the summer months (see page 7 and 8 of soils report by Mr. Caruana). Increased soil temperatures result in less moisture. With little moisture retention, and hot soil temperatures, these thin soils (on top of rock), will not support tree growth. This same soil, with a deeper soil depth, on a north slope, may support trees very well. Trees grow well on north slopes because of natural shading, which helps moisture retention and keeps soil temperatures low, which dramatically improves a tree's chance of surviving and establishing itself.

Another very important factor is the **difference** between **soil depth** and **effective depth.** Soils which are approximately 10" or less are extremely difficult, if at all possible, to establish trees in. Deeper soils, under ideal conditions, will readily support tree growth. However, **absolute** and **effective** soil depths are not necessarily the same. A high water table, toxic substances, an impervious layer, high rock content or steep slopes are factors which decrease the **effective** soil depth and decrease productivity. In many cases the conditions which decrease the effective soil depth are not sufficient to overcome the absolute soil depth. The result is areas of soil which will not grow trees. Practicing foresters are trained to look for areas such as these and adjust their management practices accordingly. If I have **repeatedly planted** an area with seedlings, over the course of several years, with no (or very little) survival, I make the assumption that the area is nonproductive. I will not, and will not advise a client, to continually plant an area because a map states that the soil (which may or may not be the actual soil there) is productive. At some point, a prudent tree farmer, company forester or consulting forester, makes the decision that the soil in nonproductive.

The primary point of this discussion is that all of these factors have a huge influence on tree growth. The same soil will have radically different growth rates, depending on the aspect, soil depth, elevation and latitude. A north aspect will have much better growth than a south aspect, trees grow better in deeper soils and higher moisture conditions. The further north (in latitude) you go, the better trees grow, because the rainfall increases. The only case where this is not so is when you get to the far north (Alaska and the Arctic Circle), because the extreme cold and harsh conditions inhibit growth.

In short: **soil type** is only **one** environmental factor influencing growth. Mr. Caruana will discuss all of these factors in detail; I am simply stating what I have observed during 30 years as a practicing forester.

To conclude this response I would like to discuss the concept of "reasonable management practices", which Mr. Just **repeatedly** brings up. The majority of his proposals to land owners would be horribly expensive up front, with very little return in the future. Ponderosa pine will be used as an example. Establishing ponderosa pine (while easier than Douglas-fir) on harsh, low site ground, would be difficult, if not impossible. I know this from years of experience, regardless of what a soil table says. Planting a property three or more times to establish a tree species would be extremely expensive, regardless of the tree planted. On top of that you would need to pay for brush control, otherwise you will not get the growth rates expected during the early years of a fully stocked, "free to grow" stand of trees. Brush control is expensive.

To spend this much money (this could exceed $1000/acre), establishing a tree worth very little on today's market, would not be prudent or "reasonable" from a landowner's perspective. This would be equivalent to buying a "hot" stock, betting that it will increase in value. Financial planners shudder at this, they want the money in dependable funds. As a practicing professional forester I would not recommend this course of action to a client of mine. I like to stick with tried and true forest practices, i.e., predictable and dependable.

The proposals Mr. Just makes are anything but "reasonable management practices". They are unsound from a financial standpoint and difficult to achieve from a forestry standpoint. As a consultant it is my job to help the landowner choose a course of action which is financially prudent and above all "doable". The last thing I would recommend is multiple plantings of a low value tree, on ground that has not grown trees in the past and will in all likelihood not grow trees in the future.

CONCLUSION

The analysis presented shows conclusively that this property will not support a merchantable stand of timber, of sufficient production capability, to meet or exceed the Marginal Lands Income test:

1) FROM ORIGINAL ANALYSIS DATED JULY 7, 2005. The estimated gross income based on a 50 year rotation for the entire 113.74 acre parcel would have been $258,630 in 1983. The average annual gross income would have been **$5,173 per year**.

FROM ANALYSIS PRESENTED IN SUPPLEMENT DATED MARCH 1, 2006. Using prices presented by Mr. Just, the estimated gross income based on a 50 year rotation for the entire 113.74 acre parcel would have been $444,699 in 1983. The average annual gross income would have been **$8,894 per year**. Using prices from 1983, the estimated gross income based on a 50 year rotation for the entire 113.74 acre parcel would have been $317,502 in 1983. The average annual gross income would have been **$6,350 per year.**

All of these figures are less than $10,000/year. Therefore, the property meets the following statutory test for Marginal Lands: ORS 197.247 (1)(a) "The proposed marginal land was not managed during three of the five calendar years preceding January 1, 1983, as part of a ... forest operation capable of producing an average, over the growth cycle, of $10,000 in annual gross income."

2) FROM ORIGINAL ANALYSIS DATED JULY 7, 2005. **These figures were calculated from productivity of areas that are actually capable of growing timber. Areas incapable of growing trees were not considered.** The subject parcel produces less than 85 cu. ft./ac./yr. of merchantable timber volume. The portion of the parcel being looked at for marginal lands designation produces only 69.327 cu.ft./ac./yr; only 62.146 cu.ft./ac./yr. if ground under the powerlines are not included. This has been determined by Lane County, and the State of Oregon, to be the measuring parameter for marginal soils west of the Cascade Range; as defined in ORS 477.001(21).

In summary, I find from the **specific site conditions present**, empirical yield tables, SCS data, Lane County Data and experience with similar lands, that this property is ill suited to the production of merchantable timber and use as land for forestry purposes. It is my opinion that this parcel should be classified as marginal land.

Sincerely,

Marc E Setterl