consistent with applicable Statewide Planning Goals and the administrative rules implementing those Goals. Accordingly, the application should be approved.

Respectfully submitted,

HERSHNER HUNTER, LLP

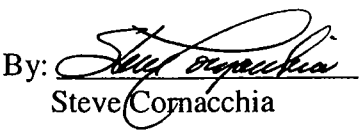
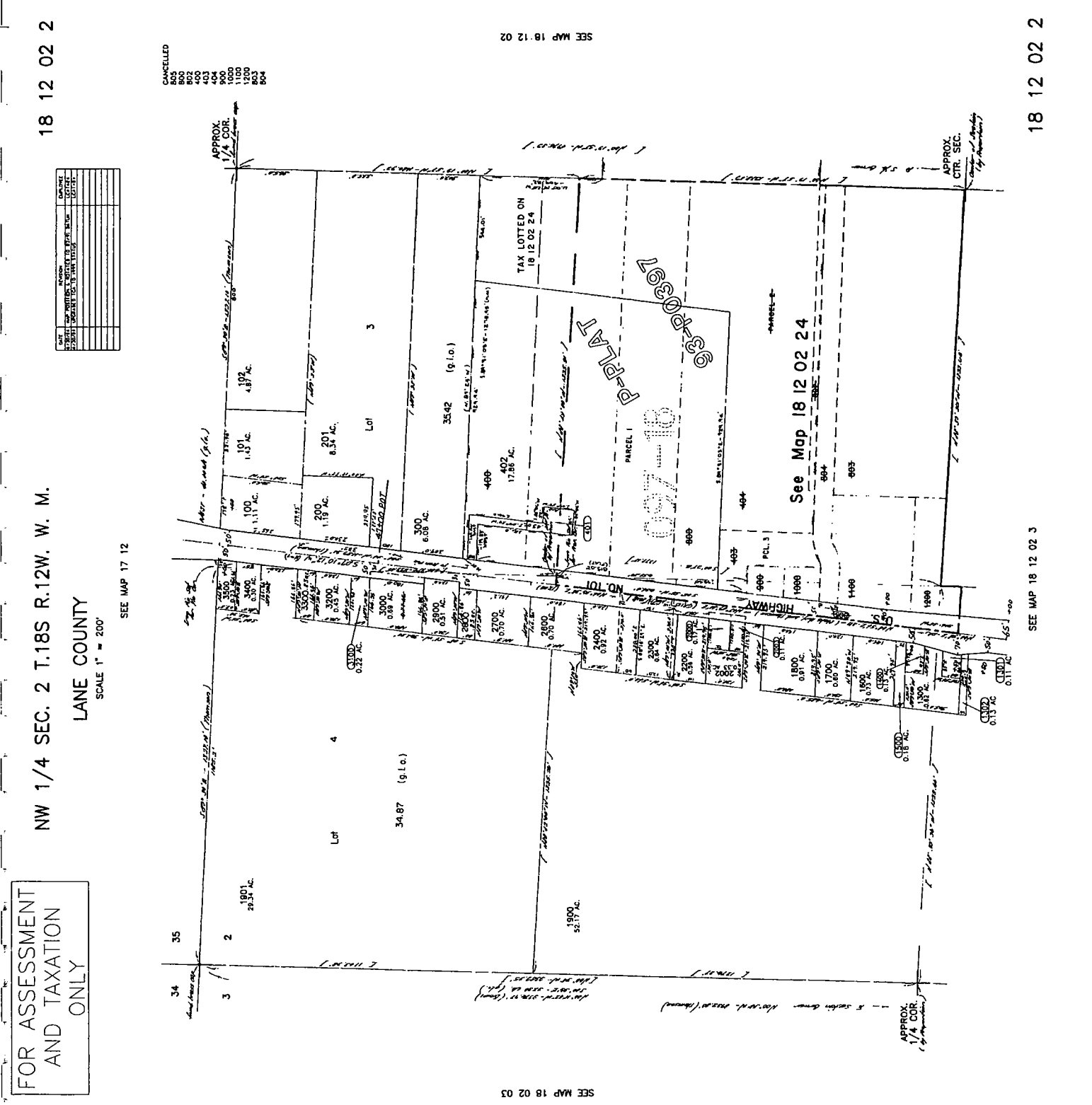
By: 
Steve Cornacchia

Exhibit A


18 12 02 2
NW 1/4 SEC. 2 T.18S R.12W. W. M.
LANE COUNTY
SCALE 1" = 200'
SEE MAP 17 12
FOR ASSESSMENT AND TAXATION ONLY
SEE MAP 18 12 02
CANCELLED
APPROX. 1/4 COR.
APPROX. CTR. SEC.
TAX LOTTED ON 18 12 02 24
93-P0397
PARCEL 1
See Map 18 12 02 24
HIGHWAY NO. 101
SEE MAP 18 12 02 3
SEE MAP 18 02 03
APPROX. 1/4 COR.

1B

Beginning at the Northwest corner of Section 2, Township 18 South, Range 12 West of the Willamette Meridian; and run thence South 89° 30' East 1185.2 feet; thence South 4° 54' West 142.2 feet; thence South 89° 30' East 187.0 feet to the Westerly line of Highway 101; thence South 4° 54' West along said line 120.0 feet; thence North 89° 30' West 187.0 feet; thence South 4° 54' West 961.2 feet; thence North 89° 30' West 53.0 feet; thence South 4° 54' West 540.0 feet; thence South 89° 30' East 240.0 feet to the Westerly line of said Highway; thence South 4° 54' West along said line 60.0 feet; thence North 89° 30' West 240.0 feet; thence South 4° 54' West 685.0 feet; thence South 89° 30' East 240.0 feet to the Westerly line of said Highway; thence South 4° 54' West along said line 35.0 feet; thence North 89° 30' West 240.0 feet; thence South 4° 54' West 300.0 feet; thence North 89° 30' West 60.1 feet; thence South 4° 54' West 830.94 feet; thence North 88° 48' West 722.5 feet to the West line of said Section 2; thence North 0° 34' West along said line 3656.6 feet to the place of beginning, in Lane County, Oregon.

EXCEPTING that part lying within the North 1/2 of the Northwest 1/4 of Section 2, Township 18 South, Range 12 West of the Willamette Meridian in Lane County, Oregon.

ALSO: Beginning at a point in the centerline of U.S. Highway No. 101, South 89° 30' East from the Northwest corner of Section 2, Township 18 South, Range 12 West of the Willamette Meridian in the North 1/2 of the Northwest 1/4 of said Section 2; thence South 4° 54' West along the centerline of said Highway 101, 2663.4 feet to the ACTUAL POINT OF BEGINNING; run thence South 4° 54' West 60.0 feet; thence North 89° 30' West 270.0 feet; thence North 4° 54' East 60.0 feet; thence South 89° 30' East 270.0 feet to the point of beginning, in Lane County, Oregon.

EXCEPT: Beginning at the Northwest corner of the Southwest one-quarter of the Southwest one-quarter of Section 2, Township 18 South, Range 12 West of the Willamette Meridian; thence along the Southerly line of that parcel described in instrument recorded December 30, 1957, Clerk's File No. 28880, Lane County Oregon Deed Records, South 88° 42' 12" East 244.07 feet; thence leaving said Southerly line North 0° 35' 00" West 91.4 feet; thence North 88° 42' 12" West 244.1 feet to the Westerly line of said Southwest one-quarter of said Section 2; thence along said Westerly line South 0° 35' 55" East 91.4 feet to the Point of Beginning, in Lane County, Oregon.

ALSO EXCEPTING THEREFROM that portion conveyed to the State of Oregon, by and through its State Highway Commission, by instrument recorded August 8, 1985, Reception No. 85-28009, Official Records of Lane County, Oregon.

Exhibit C

Lane County

2 October 1992

Gary P. Menser
T-Bar Ranch
04612 Meares Street
Florence OR 97439

D.D. Priest, et al
28325 East 44th Court
Hillsborough OR 97123

Re: PA 2964-92

You have asked whether tax lot 1900, map 18-12-02.2, qualifies as a legal lot. It is highlighted on the enclosed map, Attachment 1.

Attachment 2, the deed description card for tax lot 1900 shows that it was created in 1967 by the deed recorded in 1968 on Reel 371, Instrument 6672, Lane County Deeds and Records. The land division regulations of Chapter 13, Lane Code became effective on 26 March 1975. Legal lots are "lawfully created lots or parcels". A parcel is defined as a "...a unit of land created...by deed or land sales contract if there (were) no applicable planning, zoning or partitioning ordinances or regulations (in effect at the time)".

Tax lot 1900, map 18-12-02.2, qualifies as a legal lot.

Sincerely,

Harvey Hoglund
Associate Planner

cc: TRS file

Exhibit D

CES
Natural Solutions for Water

Using natural systems to take the waste out of water

Phone: 541.926.7737 Fax: 541.967.7619
7150 Supra Drive, SW Albany, OR 97321

February 11, 2004

Mr. Roy Carver III
P.O. Box 51505
Eugene, OR 97405

SUBJECT: Soils Assessment of the Florence Property - Tax Lot 1900 (52.17 acre +/-parcel) in T18S, R12W, Section 2, North of Florence, Lane County, Oregon.

Dear Mr. Carver:

Cascade Earth Sciences (CES) was retained by you to conduct an assessment of the soils on the above referenced parcel along Highway 101 north of Florence, Oregon. The primary purpose of this assessment was to verify and, where necessary, refine the boundaries of the soils mapped on the parcel as shown in the published soil survey. In summary, the published soil survey information was reviewed and direct observations of soil conditions were made at representative locations across the parcel. CES has determined that there are significant areas on the site that are substantially different than what was published in the soil survey.

I met with you at the property on November 11, 2003. In preparation for our site visit, you had several test pits excavated to enable efficient examination of soil profiles across the site. We walked the site and evaluated test holes, cut-banks, and other pertinent features at representative locations. I used a clinometer, Munsell color chart, and recent color aerial photograph (approximate scale 1:2400, or 1" = 200') to assist with the examination and recording of key characteristics at 18 representative locations within the subject parcel.

Dense vegetation, steep slopes, and wet areas limited access to some parts of the parcel. To assist with the interpretation of soil boundaries in less accessible parts of the parcel, you had a topographic map of the parcel developed. This map has a 2-foot contour interval and serves as the base for the site-specific soils map (Figure 1). Field observations are summarized in Table 1. The location of each test hole or other observation point is shown on Figure 1 along with the resulting delineations. A copy of the appropriate map from the published soil survey is attached as Figure 2. General topographic information for the area around the site is shown on an excerpt of the U.S. Geological Survey map (Figure 3). A copy of the tax lot map is attached as Figure 4.

Review of Published Information

The soil map units on the site and immediate vicinity are shown on Map Sheet 83 of the Soil Survey of Lane County Area, Oregon (USDA/NRCS, September 1987). According to the soil survey map, the following six soil map units are shown to occur on or near the property.

- Map unit 44, Dune land. This map unit is used to delineate large, active dunes along the coast. Dune land was mapped by the NRCS in the northwest corner of the parcel. Dune land is described as deep, excessively drained sands on active dunes.
- Map unit 94C, Netarts fine sand, 3 to 12 percent slopes. Netarts soils were mapped by the NRCS on stabilized dunes in the vicinity of the site. Netarts soils are described as deep,

well drained soils on stabilized dunes. Netarts soils are characterized by iron cementation in the subsoil.

- Map unit 94E, Netarts fine sand, 12 to 30 percent slopes. This map unit is a steeper slope phase of Netarts soils.
- Map unit 131C, Waldport fine sand, 3 to 12 percent slopes. Waldport soils were mapped by the NRCS on the upland positions in the southwest, east, and north-central parts of the parcel. Waldport soils are described as deep, excessively drained soils on stabilized dunes. Waldport soils are characterized by a lesser degree of development than the Netarts soils with no significant iron cementation.
- Map unit 131E, Waldport fine sand, 12 to 30 percent slopes. This map unit is a steeper slope phase of Waldport soils. The steeper Waldport soils were mapped by the NRCS on the stabilized flanks of the active dune in the northwest corner of the parcel.
- Map unit 140, Yaquina fine sand, 0 to 3 percent slopes. Yaquina soils were mapped by the NRCS throughout the central and eastern parts of the parcel. Yaquina soils are described as deep, somewhat poorly drained soils in low, interdune postions.

A summary of the key characteristics for each of these map units and various potential inclusions is presented in Table 2.

Field Observations and Summary of Refinements

A review of the published information pertaining to the anticipated map units, and associated soils, provided a means of focusing the field efforts to those criteria that quickly and easily distinguished the map units from one another. Several diagnostic criteria were documented at each location, including slope, landscape position, horizonation, and effective depth. Other soil profile characteristics, such as the color and texture of the surface horizon, and the presence of iron cementation, were noted where necessary.

The approximate location of each test pit or observation point, revised delineation boundaries, and a legend of the applicable map units are shown on Figure 1. A summary of observed soil conditions, key criteria, and relevant interpretations is provided in Table 1.

Five of the eighteen sample locations were found to be representative of Yaquina soils. The remaining sample locations were identified as Netarts soils. The primary differences between the Yaquina soils and the remainder of the map units on the site are related to landscape position and slope. The Netarts and Waldport soils are distinguished by the degree of development, as indicated by iron cementation in the subsoil, with each phase identified by slope. Dune land is characterized by relative instability as evidenced by a limited degree of vegetative cover.

Subsurface observation of the areas in the northeast portion of the parcel that have been affected by previous development was not feasible. Prior leveling of the site would have made interpretation of the profiles difficult or inaccurate. In light of these impacts and in the absence of any evidence to the contrary, these areas were left as mapped by the NRCS.

Acreage Determinations for High Resolution Mapping

The area of each map unit within the parcel boundary was determined using a computer aided drafting program (AutoCAD LT 2004). The results of these measurements are summarized in Table 3 along with the appropriate Lane County Soil Ratings for Forestry and Agriculture. The site contains approximately 52 percent class V through VIII soils. Approximately 48 percent of the site contains class IV soils. None of the soils on the site are rated class I through III. Likewise, none of the soils on the site have a timber rating.

Onsite Sewage Treatment System Feasibility

A peripheral issue that was evaluated in conjunction with the mapping refinements was assessing the expected suitability of the soils for onsite sewage treatment system feasibility. Map units with coarse-textured soils, such as Netarts and Waldport, are likely to require low pressure distribution where the underlying water table is at least six feet below the ground surface. This is assuming that the degree of iron cementation is not restrictive to the movement of water through the profile. If the water table is between three feet and six feet, a sand filter will likely be required. In any case, there appear to be soils that are suitable for at least some form of onsite sewage treatment system on the parcel.

This report does not substitute for a site-specific onsite sewage treatment system feasibility evaluation. A site-specific evaluation is required prior to the issuance of a septic system permit. However, the data gathered and presented in this preliminary evaluation supports a conclusion that a sufficient amount of land with approvable site and soil conditions is available to support residential development.

If you have any questions or comments, please do not hesitate to contact me directly at (541) 812-6639.

Sincerely,

CASCADE EARTH SCIENCES

Brian T. Rabe, CPSSc, WWS
Senior Soil Scientist

BTR/mab
Enc: Table 1. Summary of Soil Test Pit Information
Table 2. NRCS Map Units and Key Characteristics
Table 3. Acreage and Map Unit Interpretations
Figure 1. Site Specific Soils Map / Figure 2. NRCS Soils Map
Figure 3. USGS Topographic Map / Figure 4. Tax Lot Map
c: CES File (1)
PN: 2324090
Doc: 2324090 LR.03a.doc

Table 1. Summary of Soil Test Hole Information

Field Observations and Diagnostic Parameters	Soil Test Hole Designations					
	1	2	3	4	5	6
Landscape Position	Edge of small stabilized dune slope (road cut)	Low, level area along access road	Low, level area along access road	Low, level area in subtle depression along drainageway	Upper shoulder slope on small stabilized dune (small trail cut)	Gently undulating terrace
Slope (percent)	12 to 15	0 to 2	0 to 2	0 to 2	30	3 to 5
Aspect	W	N/A	N/A	N/A	NE	N
Surface Texture and Color	Sand - 10YR 6/1	Sand - 10YR 3/1	Sand - 10YR 3/1	Sand - 10YR 4/2	Sand - 10YR 6/1	Sand - 2.5Y 5/6
Effective Soil Depth (inches)	>49	>46	>54	>53	>24	>53
Depth to Bedrock (inches)	>49	>46	>54	>53	>24	>53
Special Features	Fe cementation below 13"	--	Very moist at bottom	Saturated at bottom	Fe cementation below 10"	Fe staining from 17-42"
Soil Type and Map Unit Symbol	Netarts - 94E	Yaquina - 140	Yaquina - 140	Yaquina - 140	Netarts - 94E	Netarts - 94C
Projected On-Site Sewage Treatment Feasibility or System Type	Low Pressure Distribution or Sand Filter	N/A	N/A	N/A	Low Pressure Distribution	Sand Filter
Land Capability Classification	VI	IV	IV	IV	VI	VI

Field Observations and Diagnostic Parameters	Soil Test Hole Designations					
	7	8	9	10	11	12
Landscape Position	Gently undulating terrace	Gently undulating terrace (road cut + shovel)	Cut bank above road through stabilized dune	Gentle side slope (shovel hole along access road)	Cut along trail adjacent to a small stabilized dune	Cut along trail adjacent to a small stabilized dune
Slope (percent)	3 to 5	3 to 5	12 to 15	3 to 5	30	20
Aspect	N	N	E	E	S	SE
Surface Texture and Color	Sand - 10YR 3/1	Sand - 2.5Y 5/6	Sand - 10YR 5/4	Sand - 10YR 4/1	Sand - 10YR 5/4	Sand - 10YR 5/4
Effective Soil Depth (inches)	>44	>20	>20	>18	>20	>20
Depth to Bedrock (inches)	>44	>20	>20	>18	>20	>20
Special Features	Fe cementation from 14-44"	Fe cementation at 20"	Slight Fe cementation from 6-20"	Brittle Fe cementation from 7-18"	Slight Fe cementation	Slight Fe cementation
Soil Type and Map Unit Symbol	Netarts - 94C	Netarts - 94C	Netarts - 94E	Netarts - 94C	Netarts - 94E	Netarts - 94E
Projected On-Site Sewage Treatment Feasibility or System Type	Sand Filter	Sand Filter	Sand Filter	NA	Sand Filter	Sand Filter
Land Capability Classification	VI	VI	VI	VI	VI	VI

Table 1. Summary of Soil Test Hole Information

Field Observations and Diagnostic Parameters	Soil Test Hole Designations					
	13	14	15	16	17	18
Landscape Position	Low, level area	Cut bank along access road through stabilized dune	Top edge at north end of larger stabilized dune	Slope transition point along west property boundary	Nearly level, low position, along drainage ditch	Gently undulating terrace (road cut and shovel)
Slope (percent)	0 to 2	10 to 13	12 to 15	15 to 30	0 to 3	4 to 6
Aspect	N/A	N	NE	N	N/A	S
Surface Texture and Color	Sand - 10YR 4/2	Sand - 10YR 4/1	Sand - 10YR 3/1	--	Sand - 2.5Y 6/2	Sand - 10YR 3/1
Effective Soil Depth (inches)	>50	>48	>48	--	>28	>24
Depth to Bedrock (inches)	>50	>48	>48	--	>28	>24
Special Features	Saturated at bottom	Slight Fe cementation from 6-28"	Fe cementation from 16-32"	--	Loose sand below 28"	Fe cementation from 10-24"
Soil Type and Map Unit Symbol	Yaquina - 140	Netarts - 94C	Netarts - 94E	Netarts - 94E	Yaquina - 140	Netarts - 94C
Projected On-Site Sewage Treatment Feasibility or System Type	N/A	Low Pressure Distribution	Low Pressure Distribution or Sand Filter	Low Pressure Distribution or Sand Filter	N/A	Low Pressure Distribution or Sand Filter
Land Capability Classification	IV	VI	VI	VI	IV	VI

Table 2. NRCS Map Units and Key Characteristics

Map Unit	Unit Name	Slope (%)	Depth (inches)	Drainage Class	Surface		Parent Material	Landscape Position	Vegetation	Land Capability Classification	Distinctive Feature(s)
					Color	Texture					
7B	Bandon sandy loam	0 to 7	>60	WD	10YR 4/2	SL	Marine and eolian sand	Marine terraces	Shore pine, Douglas fir, Sitka spruce, western hemlock, red alder, Pacific madrone, evergreen huckleberry, salal, Pacific rhododendron, and western swordfern	3e	2" O, 3" A, 32" Bir, 8" Birm
44	Dune Land	Gentle to Steep	>60	ED		S	Wind-deposited sand	Active dunes along the coast	A few scattered clumps of beachgrass and forbs	8e	
53	Heceta fine sand	0 to 2	>60	PD	10YR 5/3	FS	Eolian sand derived dominantly from Tyee Sandstone	Depressional areas between dunes	Sedges, rushes, water-tolerant grasses, willows, and waxmyrtle	4w	AC profile, 5" A over mottled FS
94C	Netarts fine sand	3 to 12	>60	WD	10YR 6/1	FS	Eolian sand deposits	Stabilized sand dunes	Shore pine, sitka spruce, salal, Pacific rhododendron, manzanita, evergreen huckleberry, and scattered Douglas fir and western hemlock	6e	2" O, 6" A, 41" Bir
94E	Netarts fine sand	12 to 30	>60	WD	10YR 6/1	FS	Eolian sand deposits	Stabilized sand dunes	Shore pine, sitka spruce, salal, Pacific rhododendron, manzanita, evergreen huckleberry, and scattered Douglas fir and western hemlock	6e	2" O, 6" A, 41" Bir
131C	Waldport fine sand	0 to 12	>60	ED	10YR 3/1	FS	Eolian sand of mixed origin	Stabilized sand dunes	Shore pine, sitka spruce, salal, evergreen huckleberry, and Pacific rhododendron	6e	3" O, 5" A, 15" AC
131E	Waldport fine sand	12 to 30	>60	ED	10YR 3/1	FS	Eolian sand of mixed origin	Stabilized sand dunes	Shore pine, sitka spruce, salal, evergreen huckleberry, and Pacific rhododendron	7e	3" O, 5" A, 15" AC
140	Yaquina loamy fine sand	0 to 3	>60	SWPD	10YR 2/1, 2/2	LFS	Eolian sand of mixed origin	Low interdune positions in coastal dune areas	Shore pine, scattered Sitka spruce, Pacific rhododendron, salal, and evergreen huckleberry	4w	0.5" O, 13" A, 16" Bir

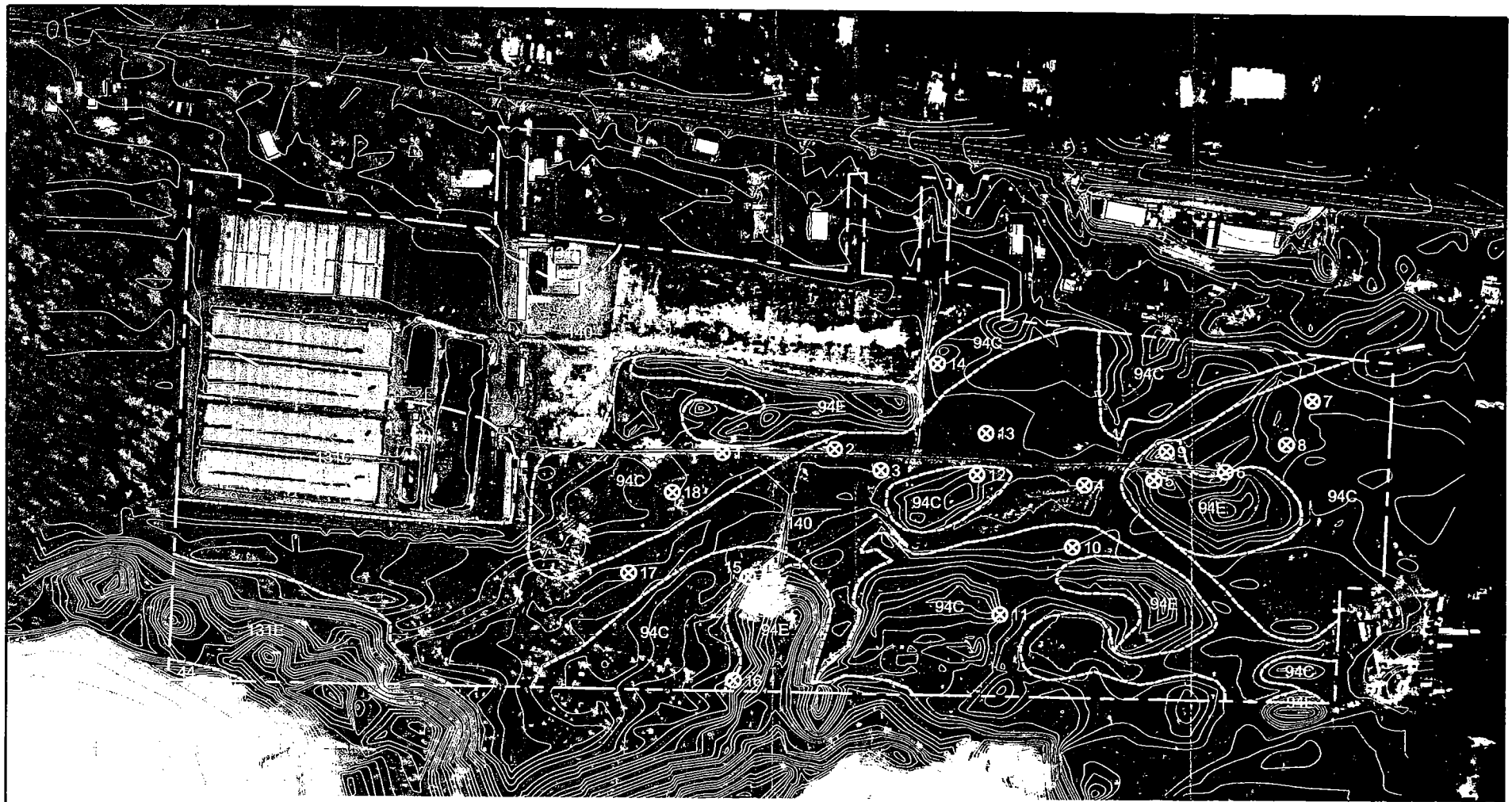
NOTE:
Drainage Class: PD - Poorly drained; SWPD - Somewhat poorly drained; MWD - Moderately well drained; WD - Well drained
Texture: L - loam; SiL - silt loam; SiCL - silty clay loam

Table 3. Map Unit Acreage and Interpretations

Map Symbol	Unit Name	Acreage	Agricultural[1] Capability Class	Douglas Fir Site Index
44	Dune Land	0.09	8	none
94C	Netarts fine sand, 3 to 12%	14.86	6	none
94E	Netarts fine sand, 12 to 30%	5.03	6	none
131C	Waldport fine sand, 3 to 12%	5.04	6	none
131E	Waldport fine sand, 12 to 30%	2.22	7	none
140	Yaquina loamy fine sand, 0 to 3%	24.93	4	none
Total		**52.17**		
Percent of Parcel in Class 1 through 3			**none**	
Percent of Parcel in Class 4			**47.8%**	
Percent of Parcel in Class 5 through 8			**52.2%**	
Average Timber Rating				**none**

NOTE:

[1]Agricultural Capability Class and Douglas Fir Site Index are from Lane County Soil Ratings for Forestry and Agriculture (Lane County Land Management Division, August 1997).



EXPLANATION

- Property Boundary
- Site Specific Soil Boundary
- Soil Sample Location
- NRCS Soil Boundary

(SOURCE: WESTBROOK ENTERPRISES AUTOCAD FILE #030230.dwg, 12/03)

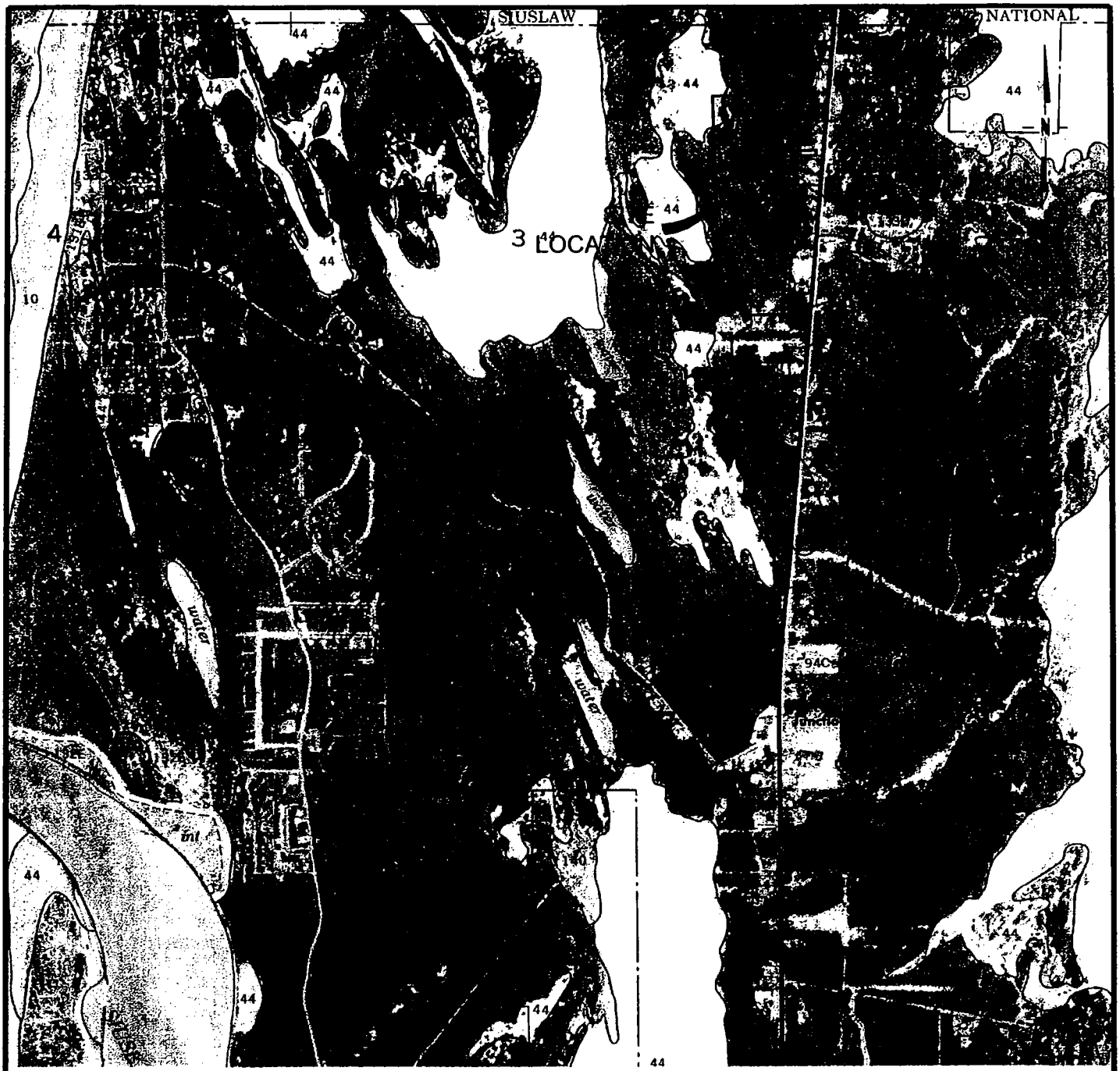
Soils Legend	
Map Unit Symbol	Name
44	Dune Land
94C	Netarts fine sand, 3 to 12 percent slopes
94E	Netarts fine sand, 12 to 30 percent slopes
131C	Waldport fine sand, 3 to 12 percent slopes
131E	Waldport fine sand, 12 to 30 percent slopes
140	Yaquina loamy fine sand, 0 to 3 percent slopes

0 200 FEET

(SCALE & LOCATIONS ARE APPROXIMATE)

Figure 1. Site Specific Soils Map

PROJECT NUMBER: 2324090	ROY CARVER
DATE: 2/9/04	
DWG BY: DEO / DWG NO.: 2324090F1.dwg	T18S, R12W, S2
PROJECT MANAGER: BR	FLORENCE, OREGON
REVISED:	CES CASCADE EARTH SCIENCES A Veimont Industries Company



(SCALE & LOCATIONS ARE APPROXIMATE)

LEGEND

Map Unit Symbol	Name
44	Dune Land
94C	Netarts fine sand, 3 to 12 percent slopes
94E	Netarts fine sand, 12 to 30 percent slopes
131C	Waldport fine sand, 3 to 12 percent slopes
131E	Waldport fine sand, 12 to 30 percent slopes
140	Yaquina loamy fine sand, 0 to 3 percent slopes

(SOURCE: NRCS SOIL SURVEY, LANE COUNTY AREA, OREGON)

Figure 2. NRCS Soils Map

PROJECT NUMBER: 2324090	ROY CARVER
DATE: 2/6/04	
DWG BY: DEO / DWG NO: 2324090F2.dwg	T18S, R12W, S2
PROJECT MANAGER: BR	FLORENCE, OREGON
REVISED:	CASCADE EARTH SCIENCES A Valmont Industries Company

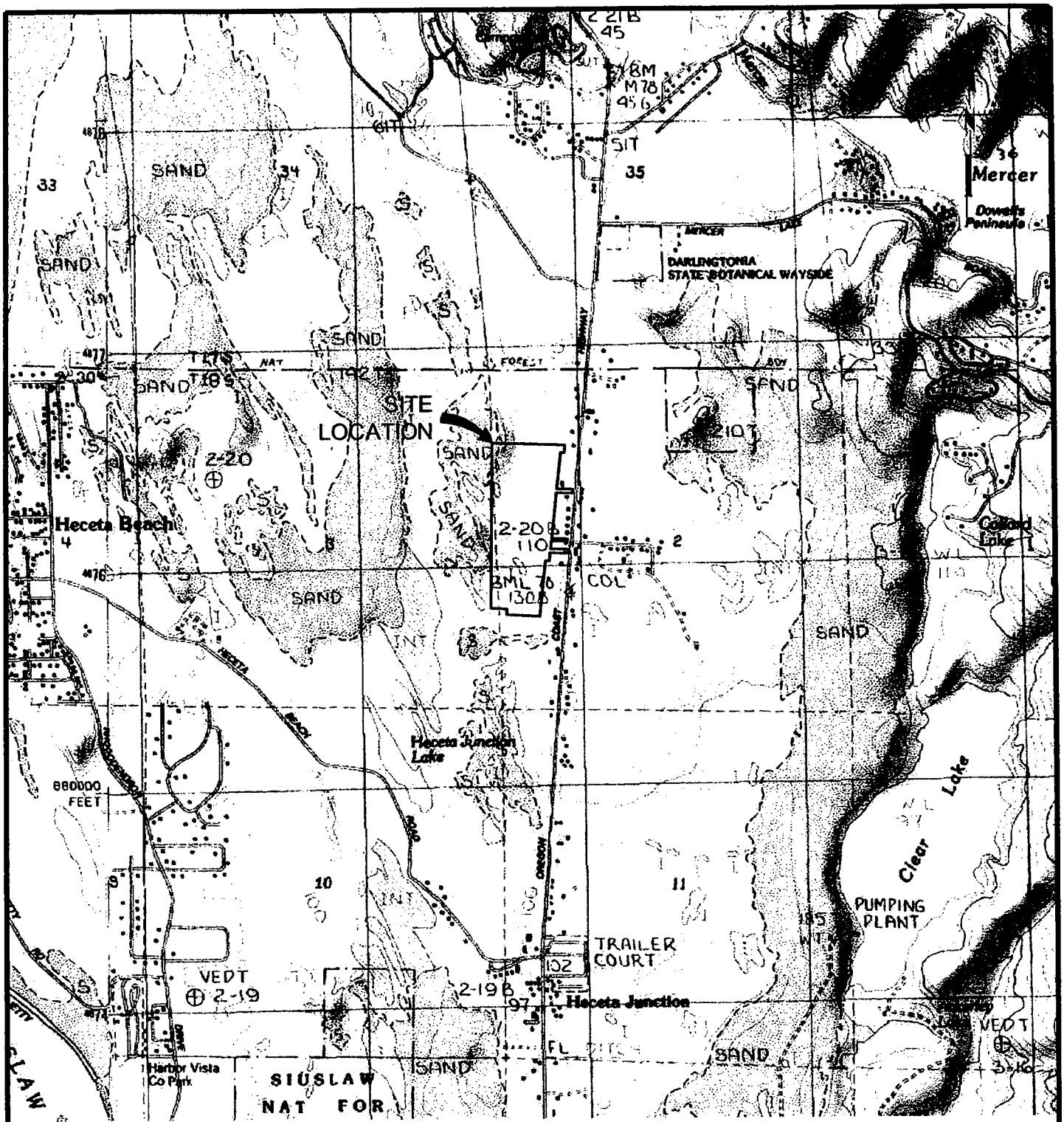


Figure 3. USGS Topo Map

0 2000 FEET

(SCALE & LOCATIONS ARE APPROXIMATE)

(SOURCE: USGS 7.5' TOPOGRAPHIC MAPS ON CD, NATIONAL GEOGRAPHIC, 2000)

PROJECT NUMBER: 2324090	ROY CARVER
DATE: 2/5/04	
DWG BY: DEO / DWG NO: 2324090F3.dwg	T18S, R12W, S2
PROJECT MANAGER: BR	FLORENCE, OREGON
REVISED:	CASCADE EARTH SCIENCES A Valmont Industries Company

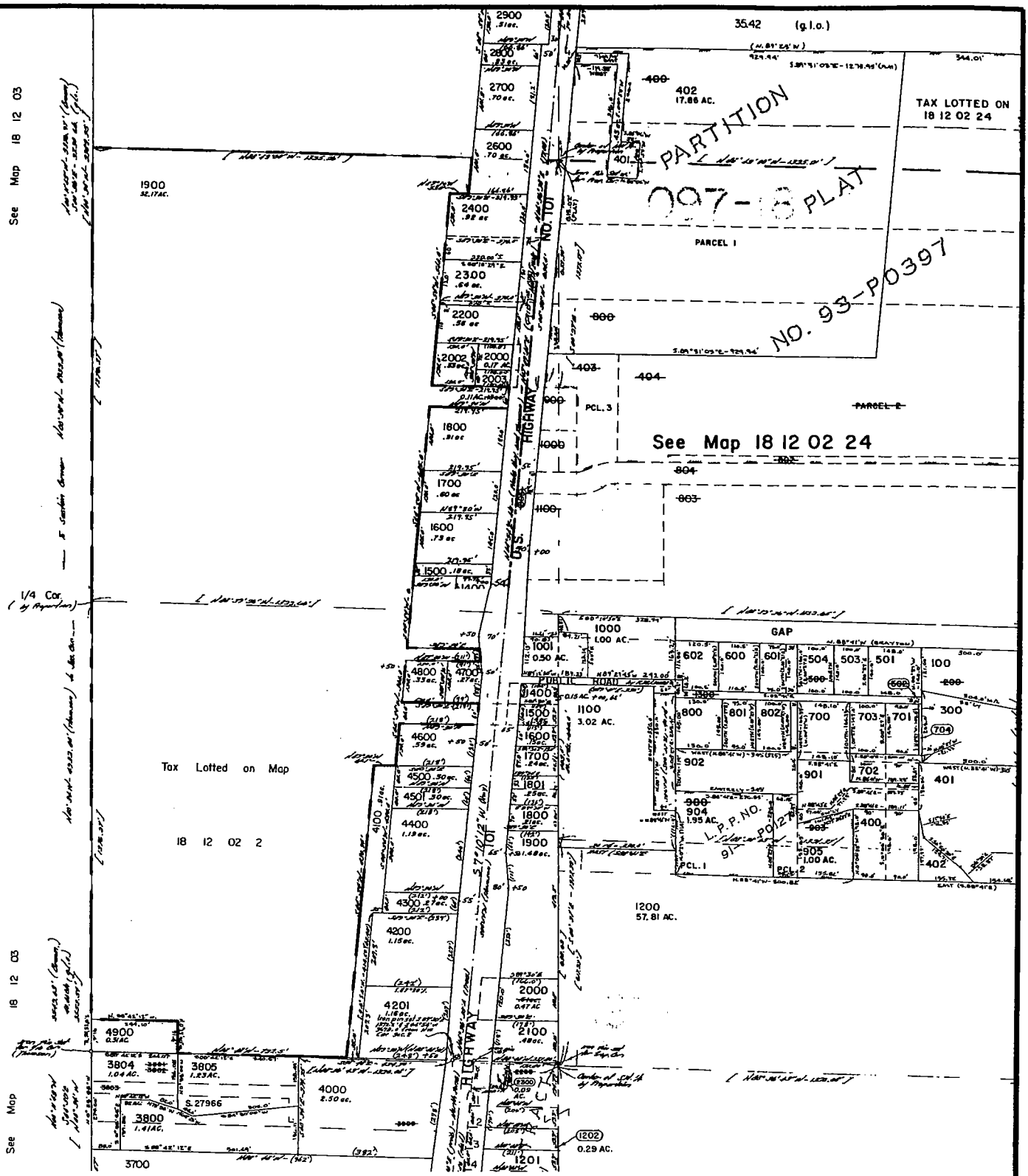


Figure 4. Tax Lot Map

0 400 FEET

(SCALE & LOCATIONS ARE APPROXIMATE)

(SOURCE: TAX LOT MAP, LANE COUNTY, OREGON)

PROJECT NUMBER: 2324090	ROY CARVER
DATE: 2/5/04	T18S, R12W, S2
DWG BY: DEO / DWG NO: 2324090F4.dwg	FLORENCE, OREGON
PROJECT MANAGER: BR	CASCADE EARTH SCIENCES
REVISED:	A Valmont Industries Company

AGRICULTURAL EVALUATION

Florence Property

Prepared For

Mr. Roy Carver

By
Paul E. Day
Agricultural Consultant

September 27, 2004

TABLE OF CONTENTS

Date: September 27, 2004

To: Mr. Roy Carver
P.O. Box 51505
Eugene, OR 97405

From: Paul E. Day, Agricultural Consultant
82631 Barbre Road
Dexter, Oregon 97431

Subject: Agricultural Capability of Property North of Florence
Assessor's Map 18-12-02 TL 1900

The following information relates to your request that I become familiar with the 52 acre (approximately) parcel of land referenced above and describe its suitability for agricultural production relative to Oregon's land use laws.

I have visited the property on March 4, 2004, discussed it with you, and reviewed maps, photographs, reports, etc., provided from various public and private sector sources that relate to the property.

SUMMARY

The property referenced above was visited for the purpose of evaluating its agricultural capability. Factors on the property and off the property, including adjacent and nearby land, were also considered.

Analysis of the findings resulted in the conclusions that:

1. On the basis of soil classifications, the property does not meet the definition of "agricultural land" under Oregon's Statewide Planning Goals.

2. Land on the property with soils in classes other than I – IV is not 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, technology and energy inputs required, and accepted farming practices.

3. Since there are no adjacent or nearby agricultural lands, it is not necessary that the subject property be held as agricultural land to permit farm practices to be undertaken on adjacent or nearby agricultural lands.

4. The subject property is not itself part of a farm unit nor is it managed as a part of any other farm unit.

INTRODUCTION

Where references are made to information about soils, climate, etc., the information will be taken from the sources cited in Table 1. In the text, reference will be made using the following shortened names:

Table 1. Reference Materials Cited

SCS Reference	*Soil Survey of Lane County Area, Oregon,* Soil Conservation Service (SCS), US Dept. of Agriculture [now Natural Resource Conservation Service (NRCS)], September, 1987.
CES Report	*Soils Assessment of the Florence Property,* a report prepared by Mr. Brian T. Rabe, Certified Professional Soil Scientist, of Cascade Earth Sciences, 7150 Supra Drive SW, Albany, OR 97321.

FINDINGS

Property Description

The address of the subject property is 88420 Highway 101, Florence, Oregon 97439. This is approximately one mile north of the intersection of Heceta Beach Road and US Highway 101. It lies in an area east of the initial sand dunes that parallel the Pacific Ocean beach and west of US Highway 101. Access is by deeded right of way from US Highway 101.

The total area in the property is 52.17 acres. Improvements include a building used for office and storage facilities, two greenhouse structures (not permanent structures) and the remains of a larger greenhouse complex that is currently being dismantled.

Zoning of the subject parcel is F2 (Impacted Forestry). It is additionally subject to a Beaches and Dunes Combining Zone.

Soil Resources

Soil resources on the subject property have been reviewed by Brian Rabe of Cascade Earth Services (CES), by the USDA Soil Conservation Service (SCS) now known as the USDA Natural Resource Conservation Service, and by a brief personal review. Of these reviews, the most exacting was the CES review. Since the CES review is the most exacting it will be used as the

Water

The current source of water for the property is provided by the Heceta Water District, and is of suitable quantity and quality for domestic uses.

Several shallow ponded areas were noted while on the property. Excess surface water was draining generally to the north through small seasonal drainage ways. All of these are said to be dry in the drier seasons of the year.

There are no perennial streams, ponds, lakes or wells on the property that could provide a source of irrigation water. No test wells have been put in on the property, therefore it is not definitively known whether or not sub-surface water is adequate in quantity or quality for irrigation.

Some small wetland areas have been designated on the land. All of these wetland areas are within the area mapped as Yaquina soil. The total area of the wetlands is estimated at less than three acres. The wetland areas are located in a manner that bisects portions of the Yaquina soil.

Plant Resources

Plant cover on the subject property consists of native vegetation. Plants observed during the visit included shore pine and cedar trees, manzanita, rhododendron, salal, blackberry, huckleberry, sedges and rushes in the wet areas, a small number of weedy grasses (e.g., velvet grass) and patches of moss.

In most areas plant cover was reasonably dense and was effective in holding the sand in place. In a few locations of less plant density, the sand was showing some erosion.

No improved forage species (grasses or legumes) were observed on the property. There is no known past history of establishment or attempt to establish forage plants to support livestock grazing on the parcel.

Adjacent and Nearby Lands

The subject parcel is located a short distance north of Florence in an area where there are numerous small lots along US Highway 101. These properties are mostly devoted to rural residential or small business purposes and are the dominant use on the south and east sides of the subject parcel.

Other areas, mostly to the west and north of the subject parcel, are dominated by larger parcels and are in F2 (impacted forestry) zoning or are held as part of the Siuslaw National Forest. These are used for recreational purposes such as all terrain vehicle (ATV) riding and have resulted in some trespass problems on the subject property. During the visit ATV trails were noted in dunes areas and in some of the wetland areas. Trash had also been left behind.

There are no known farms in the vicinity of the subject property. None of the adjacent or nearby land is involved in production of agricultural commodities with the possible exceptions of an occasional horse kept for recreational purposes, kitchen gardens, or other similar activities typical of a rural residential life style.

Agricultural History

From 1994 to 1998 a small portion of the subject property (approximately eight acres) was used to produce wasabi[4] in green houses as a commercial agricultural product. As far as can be determined this was the only commercial production of wasabi in the United States and one of only two on the North American Continent. Production was confined to a hydroponic facility that had been constructed on the site in 1994.

Production of wasabi was accomplished entirely under artificial or "imported" conditions. It was a labor intensive crop.

Commercial wasabi production was transferred overseas in 1998 because of high US production costs due mostly to high labor costs.

The facilities are being dismantled and salvage/disposal activities are nearly complete.

Currently no commercial wasabi is produced at the location. One small non-permanent greenhouse contains wasabi plants in trays that are made available to home garden enthusiasts. Fewer than 1000 plants are provided annually having a sales value of less than $2500.

ANALYSIS

A large number of factors enter in as to whether a piece of land is or is not suitable for agricultural production. To assist with the suitability question, and relative to preservation of agricultural resources, the State of Oregon, through its land use laws, has provided standards for use in making the decision.

In reviewing the subject property these standards have been considered relative to the conditions associated with the property. Comparison of the conditions and the standards leads to the conclusion that the property does not meet the criteria requiring that it be preserved as agricultural resource land.

A discussion of the findings of this review and how they relate to this conclusion follows.

Classification of Soils

In the CES Report the combination of all soils on the subject property classed by the SCS as Class I through Class IV in agricultural capability is noted as being less than 50% of the total land in the parcel. None of the soils on the subject property are inventoried in the SCS Reference as "Prime Farmland".

The subject parcel is not "Agricultural Land" relative to the agricultural land standard.

[4] A condiment used with certain Japanese dishes.

Land in Non-Agricultural Classes Suitable For Farm Use

Three of the soils (Dunes, Netarts and Waldport) are inventoried as non-agricultural soils (i.e., not Class I-IV soils). Pasture is the only crop listed (in the SCS Reference) on the Waldport soil and then only at a very low rate of production (i.e., three AUMs per acre per year). The Dunes and Netarts soils are not rated for any production level of any crop.

Land not meeting the SCS I-IV classification as "Agricultural Land" must be considered relative to a number of additional criteria. These include:

Soil Fertility

The non-agricultural soils on the parcel (see Table 2 on page three) are noted in the SCS Reference as low in fertility and needing application of nutrients via mixed fertilizer annually or "frequently". Lime application is also needed to counteract soil acidity which is described as strongly to extremely acid in the surface layers. The pH levels noted (same reference) range from 4.2 to 5.4 which are below the levels suggested for the most acid tolerant legumes used in Western Oregon permanent pastures. In discussion of the Netarts and Waldport soils, cautions are included that applied nutrients can be leached from the soils. This poses potential conflict between pasture production and groundwater quality.

The fertility conditions are not conducive to production of improved forage species and would partially explain the lack of forage plants on the subject parcel. Attempts to correct the fertility problems have the potential to result in some environmental damage.

These conditions result in impediments to agricultural production on the soils that make up over half of the total acreage.

Suitability For Grazing

The non-agricultural soils on the subject parcel are all sandy in texture and subject to wind erosion problems if the plant cover is disturbed.

Since there is no grazing resource currently available, grazing would require that suitable forage plants be established. The tillage operations involved in doing so would involve a very substantial hazard of inducing wind erosion similar to and probably greater than that seen currently where the density of plant cover is low. If a forage base that would produce at the maximum rated capacity for these soils was to be established, the total combined livestock carrying capacity of the Dunes, Netarts and Waldport soils (see Table 2, page three) would be less than two head of cattle — a very poor return for the risk undertaken.

Protection of the scattered wetland areas on the subject property would interfere with grazing and contribute to the difficulty of maintaining and managing a grazing resource.

The lack of native vegetation suitable for grazing and the environmental hazards associated with establishing, maintaining and managing an appropriate grazing resource all contribute to making this property impracticable for use as a grazing resource.

Climatic Conditions

The coastal area near Florence is very heavily influenced by the Pacific Ocean. With the subject property being protected by only a few sand dunes, it is subject to the full force of storms coming on shore. The associated winds present the hazard of wind erosion noted earlier. Exposure to the wind and rain from storms would also substantially increase the energy needs of livestock subjected to such weather.

These climatic characteristics in combination with hazards noted above relative to suitability for grazing further increase the impracticability of these soils for agricultural production.

Irrigation Water

There are no suitable sources of irrigation water on, adjacent to, or nearby the subject property with the possible, but unproven, exception of developing one or more wells.

The topography of the non-agricultural soils on the property is such that developing an adequate irrigation system would be impracticable. The cost of developing well(s) and a delivery system to irrigate the remaining 24.93 acres of Yaquina soil would be very high relative to the expected return to be gained from irrigation.

Because the surrounding area is non-agricultural and because of distances to water sources there is no likelihood of a future irrigation water supply (e.g., an irrigation district) being developed for an area such as this.

The impracticability to impossibility of acquiring and delivering water for irrigation, now or in the future, contributes to the unsuitability of the subject property for agricultural production.

Existing Land Use Patterns

Land adjacent to the subject property on the east and south is involved with small-lot rural residential uses and with light commercial use on a few lots. To the west and north, the land is held in F2 (Impacted Forestry) zoning or in National Forest ownership. Recreational uses of these properties have involved trespass on the subject property resulting in ATV trails and trash deposits. These conditions would be detrimental to attempts at agricultural production.

Nearby lands are in similar holdings and uses.

There is no agricultural production in the area that would be supportive of agricultural development on the subject property, or that could in any way be affected by a lack of agricultural activity on the subject property.

Agriculture is not a factor in existing land use patterns and establishment of agricultural crops on the subject property would be impeded by continued recreational spill-over.

Technology and Energy Inputs Required

No reasonable amounts of technology and energy inputs are going to overcome the impediments to agricultural production on the subject property. The problems with soils, water, and climate are essentially immutable components of the natural environment in this area. They are basic reasons for the absence of agricultural production on this type of land.

A prudent farmer would invest in land having greater agricultural potential rather than to invest in technology and energy inputs on this property which is not suited to agricultural production.

Accepted Farming Practices

As noted earlier, soils, plants and climatic conditions involved on this property are not conducive to agricultural production. Removal of the native plants in an attempt to establish agricultural production would be very likely to result in substantial erosion problems. This, in turn, would result in loss of soil — a fundamental requirement for agricultural production.

To undertake activities that have a high potential for heavy soil loss is not an acceptable farming practice.

Land Necessary To Permit Adjacent Or Nearby Farming

There are no adjacent or nearby farms.

The subject property has no effect on adjacent or nearby agricultural lands.

Farm Unit Consideration

The subject property is zoned as impacted forest land and is not in farm use. No adjacent or nearby land is in farm use.

The subject property is not a part of a farm unit.

CONCLUSIONS

The combined effects of soil, water, and climate conditions are such that the subject property is not farm land and it is extremely unlikely that it could ever be used as such. There is no forage resource currently available and no other crop types are suggested by the SCS Reference. Attempts to establish a forage resource would involve substantial environmental hazards and could not be expected to produce at a level acceptable to a prudent farmer.

Historical agricultural output related to the property involved a facility entirely constructed and completely independent of the characteristics of the property (e.g., soil, water, plant resources).

Relative to requirements in Oregon's Land Use laws, the subject property does not qualify for protection as agricultural lands because:

1. The property is less than half agricultural land as defined by the SCS standards.

2. Soils on the property that are identified as non-agricultural are not suitable for agricultural production when considered relative to soil fertility, suitability for grazing, climatic conditions, irrigation (present or future), existing land use patterns, technology and energy inputs required, and accepted farming practices.

3. There are no adjacent or nearby agricultural lands, therefore the subject property cannot have any effect on adjacent or nearby agricultural lands.

4. There are no farm units adjacent or nearby, therefore the soils on the subject property cannot be considered to be intermingled with Class I-IV soils of any other farm unit.

Submitted by:

Paul E. Day

Paul E. Day, Agricultural Consultant

Date: Sept. 27, 2004

LAND CONSERVATION AND DEVELOPMENT COMMISSION
ACKNOWLEDGMENT OF COMPLIANCE
Lane County
(Rural Portion, Excluding Eugene Metro Area)
Supplement to Staff Reports of June 29, 1984 and July 19, 1984 as Amended

DATE RECEIVED:
August 16, 1984 through September 13, 1984

DATE OF COMMISSION ACTION:
September 13, 1984

I. REQUEST

Acknowledgment of Compliance with the Statewide Planning Goals for the comprehensive plan and implementing measures.

II. SUMMARY OF RECOMMENDATIONS

Staff

Recommends the Commission acknowledge the rural portion of Lane County's plan and land use regulations to be in compliance with Statewide Planning Goals 1-~~14~~ 15.

FIELD REPRESENTATIVES: Bob Rindy, Glen Hale
Phone: 378-4095

LEAD REVIEWER: Doug White, Mike Rupp, Claire Puchy
Phone: 378-4926

PLANNING DIRECTOR: Roy Burns
Phone: 687-3958

Date of Supplemental Report: September 12, 1984

III. BACKGROUND INFORMATION

On June 29, 1984, the Department issued a staff recommendation for Goals 1-4, 6-14, in response to Lane County's request for acknowledgment. The Commission took testimony but did not take final action on the request at the July 19, 1984 meeting. Also, on July 19, 1984, the Department issued a staff recommendation regarding Goals 5 and 15, and Goal 2 nonresource lands. At their August 17, 1984 meeting, the Commission again postponed final action on the June 29, 1984 report, and on the July 19, 1984 report, except for the portions pertaining to the rural areas in the Eugene/Springfield Metro Plan. These areas were granted a continuance to October 11, 1984.

In the period following the issuance of the Department recommendations, Lane County has made numerous revisions to their comprehensive plan and implementing ordinances in response to the Department's recommended in-order-to-comply requirements. These amendments were made under the provisions of the Expedited Notice Procedure for Acknowledgment (OAR 660-03-033). According to County Notices (July 19, 1984 and August 23, 1984), commentors and objectors were notified and provided opportunities for review and comment on these amendments prior to County adoption.

Section IV below summarizes the DLCD proposed requirements from the June 29 and July 19 reports and summarizes the County's response to each requirement. These are intended as supplemental findings, rather than as amendments to the previous DLCD recommendations.

Submitted Documents

Document	Ordinance	Adoption
Revisions to Development Code (Chapter 16)	9-84; 11-84	8-9-84; 9-12-84
Amendments to Plan Policies and Comprehensive Plan	889; 892	8-9-84; 9-12-84
Revisions to Development Code (Chapters 13 and 14)	10-84	8-9-84
Amendments to Comprehensive Plan	888	9-12-84
Supplemental Findings for Exceptions, Maringal Lands and Non-Resource Areas	84-9-11-22 (Order) 84-9-11-23 (Order)	9-12-84 9-12-84
Revised Comprehensive Plan Map and Zoning Map	891; PA 884	9-12-84

Conclusion

The requirement has been met.

The previous findings found lacking for these properties have now been corrected as is required under ORS 197.247.

Based on the evidence submitted, and along with the findings in the previous staff recommendations, the following areas qualify as marginal lands under ORS 197.247:

Mertz/603
Harrison
Mathers
G.E. Credit Corp
Moshofsky

Requirement

4. Amend the Plan Map and Zoning Map for the Cuddeback and Rodman properties to an appropriate resource designation and implementing zone.

Response

The Cuddeback and the Rodman properties have been redesignated Impacted Forest Lands (Ord. No. 898).

Conclusion

The requirement has been met.

Conclusion - Goal 3

Lane County complies with Goal 3.

The findings contained in this supplemental report and those contained in the Department's June 29, 1984 review support the decision that Lane County complies with Goal 3.

GOAL 4: FOREST LANDS

Requirement

1. Amend the Forest Working Paper and addendum to:

   a. Provide justification for the F-1 Zone's 40 acre minimum.

   b. (1) include information on the pattern of contiguous ownerships (either map or statistical) in support of a decision to retain current F-2 zoning. Such information must show that the minimum lot size is representative of the ownership pattern of the area

and that the zone actually limits further opportunity for development; or (2) include information justifying an alternative approach consistent with Goal 4 taken to resolve issues raised regarding the F-2 Zone.

c. Amend the Forest Working Paper Appendix 1--Lane County Forest Soils--to include "all commercial forest soils" in a manner consistent with an appropriate definition of commercial forest lands.

Response

1. a. Lane County has adopted additional information supporting its decision for assigning a 40-acre minimum lot size in the F-1 Zone. Specifically, the County has included as findings, two letters from Carl Ehlen (Lane County Landowners Assoc. and Rex Timber Co.) regarding the viability of a 40-acre parcel to be commercially managed as a forest parcel and Exhibit "D" from Ordinance No. PA 889 which cites the following findings:

"1) In support of the proposed Comprehensive Plan developed in 1982 the Lane County Landowners Association provided written testimony that the minimum land division size of 40 acres in the F-1 Zone represented an acreage that could be an operationally and economically manageable unit within the industry. At that time, the F-1 Zone proposal allowed dwellings on parcels down to the minimum size. (See attached letter dated November 23, 1982)

2) The Addendum to the Forest Lands Working Paper dated November 1983, justifies the 40 acre minimum land division from the data which show a significant number of parcels and amount of acreage that represent that size class within the industrial forest land ownership.

The following excerpt is from Suggestion Policy XI. 1) of the Addendum to the Forest Lands Working Paper:

'92% of the Industrial forest land acreage that lies on parcels less than 80 acres in size occurs on parcel sizes between the range of 40 to 80 acres, with approximately 25% of that area occuring at the 40 acre parcel size category.'

'75% of the number of parcels in the Industrial owned forest land that lies on parcels less than 80 acres in size occurs on parcel sizes between the range of 40 to

80 acres, with approximately 28% of the number of parcels occuring within that range at the 40 acre parcel size category.'

3) The letter received June 21, 1984, from the Lane County Landowners Association reiterates their former position in support of the 40 acre minimum land division standard noting that under the current proposal the F-1 Zone excludes residences. (See copy attached.)

4) In addition, preliminary data from the computerized zoning file of the current F-1 proposal indicates that of the parcels zoned F-1 that are between 40 and 80 acres in size, 27% of the acreage occurs on parcels of the 40 acre size class which represents 39% of the number of parcels between 40 and 80 acres in size."

The County has indicated further that the County's decision establishing the 40-acre minimum lot size in the F-1 Zone is supported because:

"Commercial forest representatives in Lane County requested 40 acres as a minimum lot size in the F-1 Zone based upon 40 acres being a commonly acquired, managed and exchanged unit of commercial forest land in Lane County."

Because Lane County's F-1 Zone does not allow dwellings, the price of forest land will reflect forest land values instead of rural residential values and conflicts with forest management activities will be minimal. Thus, a small minimum lot size conducive to commercial forest management, such as the F-1's 40-acre minimum is appropriate.

b. Lane County has rezoned approximately 56,080 acres of land from F-2 to F-1 and EFU in accordance with requirement "1.b(1)." Lands for which the F-2 zone was retained generally exhibit one or more of the characteristics for impacted forest lands presented in the response to requirement "2a." In addition, the County's revised Goal 4 Policy 12 provision (discussed under Goal 4 Response 3 of this report) presents additional limitations on divisions of resource land by establishing a 80-acre minimum lot size for all forest parcels which are (1) 160 acres in size, (2) zoned F-2, and (3) adjacent to F-1 zoned lands.

c. Lane County has amended, through Ordinance No. PA 889 (p. 6), their definition of commercial forest land to be 50 cubic feet per acre per year. By adopting a single commercial forest lands definition in its forest lands working paper rather than relying

on inconsistent references to 20 cubic feet, 50 cubic feet or the list of forest soils contained in Appendix 1, a consistent standard for inventorying forest lands and evaluating nonresource lands is established.

Conclusion

Lane County satisfies this requirement.

Requirement

2. Amend the comprehensive plan to:

   a. Include a Forest Policy which establishes precise criteria for applying the F-1 and F-2 Zones. (At a minimum, criteria for applying the F-1 Zone must include ownerships of a size capable of being managed as commercial forest lands.)

   b. Amend the four characteristics discussed under the Goal 4 conclusion for policies to establish criteria which apply only to lands appropriately zoned F-2 as per the examples discussed under "application;" or

   c. Include a policy which requires a plan amendment to rezone lands from F-1 to F-2.

   d. Delete the following from Forest Policy 11(a) "if adjacent to other nonimpacted forest lands.

Response

2a. In response to the above requirement, Lane County revised the criteria for applying the Non-Inpacted (F-1) and Impacted (F-2) Zone designations to eliminate the specific "vague" criteria discussed in the June 29, 1984 review. The revised criteria can be used to more specifically determine the proper zone designation. Ordinance No. P. 899 (p. 5, Item 10) adds Goal 4, Policy 19 which reads as follows:

"Lands designated within the Rural Comprehensive Plan as forest land shall be zoned Non-Impacted Forest Lands (F-1, RCP) or Impacted Forest Lands (F-2, RCP). A decision to apply one of the above zones or both of the above zones in a split zone fashion shall be based upon:

'a. A conclusion that characteristics of the land correspond more closely to the characteristics of the other forest zone. The zoning characteristics referred to are specified below in subsections b and c. This conclusion shall be supported by a statement of reasons explaining why the facts support the conclusion.

'b. Non-impacted Forest Land Zone (F-1, RCP) Characteristics

Because active forest management is required to retain forest land taxation rates and failure to implement the forest management plan is a violation of LC 15.211(3)(b). The combination of the above requirements for forest related dwellings in the F-2 Zone assures that active forest management must occur on forest lands in order to establish a forest related dwelling; thus, satisfying the accessory and necessary test. These requirements for approving a forest related dwellings in Lane County's F-2 Zone are similar to the provisions contained in Benton County's acknowledged secondary forest zone.

5b. Through the adoption of Ordinance No. 9-84, Lane County amended LC 16.211(3)(b) of the F-2 Zone to include a "10 acre" floor which will be used for assessing "forest" dwelling applications. Applications for dwellings on parcels zoned F-2 which are less than 10 acres will be reviewed as nonforest dwellings.

5c. Upon further review of LC 16.211(7)(c) regarding the F-2 zone's minimum lot size requirements for farm unit size requirements for commercial grazing operations, it was determined that this provision's 40-acre minimum "farm unit size" requirement is identical to the County's EFU Zone minimum farm unit size requirement. For specific uses, such as dwellings, LC 16.212(2)(f) of the EFU Zone must be satisfied before approval can be granted.

Conclusion

The County satisfies this requirement.

Conclusion - Goal 4

Lane County complies with Goal 4.

Lane County's approach to conserving forest lands contains some plan policy and ordinance provisions unique to Lane County. The strength of their forest lands conservation program is the F-1 Zone which prohibits the siting of all dwellings (other than those required to be authorized by state statutes). This zone is applied to 2,449,775 acres of Lane County's forest lands.

The County's F-2 Zone is applied to 145,356 acres of privately owned lands which consist generally of large lot rural residential parcels, nonproductive or marginally productive resource lands, or underutilized resource lands. Lands zoned F-2 are generally located adjacent to or near developed urban or rural areas and well travelled transportation routes; all of which have an impact on the commercial management of forest lands.

In the F-2 Zone, the County requires that before a permanent dwelling is sited on forest land, assurances are obtained that forest production on the lot will be enhanced by active forest management. The requirements associated with the siting of dwellings in the F-2 Zone are similar to those provisions approved by the Commission in Benton County's acknowledgment with recent changes to the County's forest policies and

ordinance provisions. The findings contained in this supplemental report and those contained in the Department's June 29, 1984 review support the decision that Lane County complies with Goal 4.

GOAL 5: OPEN SPACES, SCENIC AND HISTORIC AREAS, AND NATURAL RESOURCES

Requirement

1. Mineral and Aggregate Resources: Apply the Goal 5 process to sites zoned SC which are not included on the County's (1C) inventory and, based on an analysis of the ESEE consequences of conflicting uses, either (1) add them to the (1C) inventory if justified, or (2) rezone the sites for other uses.

Response

In responding to this IOTC, Lane County discovered that not only were there sites zoned SG which were not on its (1C) inventory, but that there were other errors on its inventory. Therefore, the County revised its (1C) inventory as well as its (1B) inventory. Supplemental findings to Ord. No. PA 892 state:

> "The IOTC to correct the zoning citations was the stimulus for a complete review of sites listed in Appendix D vs. zoned sites. Several of those in the original Appendix D have been deleted--none of which carried SG or QM zoning. No "unzoning" will be necessary. Most of those deleted are also reflected in Appendix F of the Working Paper, which is the "pool" for later evaluation under the Goal 5 Rule "1B" option. Thus, any sites deleted in this effort are not lost from consideration, merely set aside for more detailed examination later on. All but one of the sites of Appendix D correspond with on-the-ground zoning of SG or QM."

The one site referred to in the last sentence of the previous quote (site #21) is an active site. The County completed all steps of the Goal 5 Administrative Rule for the site, and subsequently zoned it QM (Ord. No. PA 891). These findings are now part of the County's Mineral and Aggregate Resources Working Paper.

The County's three Mineral and Aggregate Resources inventories--Appendices D, E, and J--have been revised as follows: Appendix D has been reorganized to read more clearly, the Conflict Analysis (Appendix J) expanded to deal with new sites per the IOTC, and a third map (Appendix E) created to display the sites on new Appendix D. The original Appendix E--a listing of sites in the Metro Area--has been deleted since it was inconsistent with the list contained in the Metro Plan.

Background:

Soil mapping units were prepared by the County Soil Scientist in close cooperation with the Soil Conservation Service (SCS) by combining field checked aerial photographs and USGS 1:30,000 foot base maps. The resulting maps provide specific detailed soils information. The various soil characteristics and capability ratings are listed in the OR Soil S-1 Forms, "OR-1's".

An average Site Index was determined by the SCS based on the "OR-1's" from which was calculated a cubic foot site class (see "A Technique for Mapping Forest Land by Site Productivity Using Soil Survey Information", Oregon State Department of Forestry, 1978) as per Goal 4's [illegible] requirement.

The Site Index is an expression of the productive potential or capability of forest land. These site indeces are usually grouped into site quality classes, i.e. cubic foot site classes (CFSC). (se attached)

Appendix IV of the Forest Lands Working Paper lists the soil types inventoried within Lane County that constitute the forest lands having CFSC 2 through 5. The inconsistancy arises in the definition of "commercial" forest land, p.8 of the Forest Lands Working Paper, March, 1982, and p. 5 of the Addendum to the Working Paper: Forest Lands, 1982:

> "'Commercial' forest land (land capable of producing crops of industrial wood in excess of 20 cubic feet per acre of annual growth)"

The use of this "commercial" forest land definition came from the State's application of a National Standard for inventory purposes. The inappropriateness of the National Standard in Lane County is indicated in the following table of Site Class VI forest land in Lane County:

EXHIBIT "C"

Site Class VI Forest Land in Lane County*

Ownership	Species	Acreage	Volume (Ft.³)
Forest Industry	-	0	0
Other Private	-	0	0
Willamette N.F.	-	0	0
Umpqua N.F.	-	0	0
Siuslaw N.F.	hardwoods	900	2,336
State & Other Pub.	hardwoods	1,530	3,700
Total		2,430	6,036

* Source: 1980 Oregon Timber Supply and Assessment
Oregon State Forestry Dept., December, 1980.

In addition the Oregon Forest Practices Act applys to commercial operations and as per OAR 629-24-501 (The Reforestation Requirements of the FPA for the Oregon Northwest Region):

> "Lands Affected. Any lands which come within the definition of forest land and which are capable of a mean annual production of at least 50 cubic feet per acre at culmination as determined by Site Index Tables contained in ..."

Summary:

1) Since Lane County has inventoried its forest lands as ... Goal #4 and has mapped Forest Land CFSC 2-5 with CFSC 5 defined as forest land capable of producing crops of industrial wood in excess of 50 or more cubic feet per acre of annual growth: and

2) Since the acreage inventoried by the 1980 Oregon Timber Supply and Assessment identified a relatively small amount (less than 2,500 acres) of land in Lane County with productivity ratings of less than 50 cubic feet per acre; and

3) Since the SCS Soil Interpretive Sheets for Lane County do not provide information indicating the potential forest productivity below CFSC 5; and

4) Since the Oregon Forest Practices Act applies to commercial operations and identifies the lands affected by OAR 629-24-501 as capable of at least 50 cubic feet per acre of annual growth;

Staff Recommends the following:

1) Amend the definition of "commercial" forest land p.3 of the Forest Lands Working Paper, March, 1982, and p.5 of the Addendum to the Working Paper: Forest Lands, 1982, to read as follows:

> ..." Commercial" forest land (land capable of producing crops of industrial wood in excess of 50 cubic feet per acre of annual growth..."

2) Appendix I of the Forest Lands Working Paper, March, 1980, lists Lane County Forest Soils and their corresponding CFSC rating as of that date. As more current information regarding forest soils becomes available, Lane County should rely upon the most current Soils Data and Soils Interpretations as utilized by the US Dept. of Agriculture Soil Conservation Service.

IN THE BOARD OF COUNTY COMMISSIONERS OF LANE COUNTY, OREGON

ORDER 84-9-12-3) IN THE MATTER OF ADOPTING
) A SUPPLEMENTAL FINDING IN
) SUPPORT OF PA 883

WHEREAS, in PA 883, the Rural Comprehensive Plan Ordinance that adopted the plan policies, 28 working papers, while not part of the Ordinance itself, were adopted in support thereof, and

WHEREAS, since PA 883's adoption, it has come to our attention that certain soils information in Appendix I to the Forest Lands Working Paper is not entirely accurate, now, therefore, be it

ORDERED, that the following supplemental finding is hereby adopted in order to identify the correct soils information to use when determining commercial forest soils.

"Appendix I of the Forest Lands Working Paper was intended as an example of commercial forest soils and their corresponding CFSC ratings. However, these soils and ratings are not complete and are not entirely accurate. Therefore, Appendix I should not be utilized when determining commercial forest soils. Instead, the most current soils Data and Soils Interpretations as utilized by the U.S. Dept. of Agriculture soil Conservation Service should be relied upon in conjunction with the definition of "commercial forest land" (50 CFSC) as adopted by the Board of Commissioners in Ordinance No. PA 889, Exhibit "C".

Dated this 12th day of Sept., 1984.

Chair, Lane County Office of Legal Counsel

IN THE BOARD OF COUNTY COMMISSIONERS OF LANE COUNTY, OREGON

ORDER 84-9-12-4) IN THE MATTER OF ADOPTING
) A SUPPLEMENTAL FINDING IN
) SUPPORT OF PA 889

WHEREAS in PA 889, we amended the Rural Comprehensive Plan policies established in PA 883, and

WHEREAS, in PA 889 we adopted four findings supporting the 40 acre minimum lot size in the F-1 Non-Impacted Forest Land Zone, and

WHEREAS, based upon evidence already in the record, DLCD staff have asked that an additional finding be made in support of that lot size, now, therefore, be it

ORDERED, that supplemental finding No. 5, set forth below, is adopted, and added to Exhibit D to PA 889.

"5.) Commercial Forest representatives in Lane County ~~requested~~ 40 acres as a ~~minimum~~ lot size in the F-1 zone based upon 40 acres being a commonly acquired, managed and exchanged unit of commercial forest land in Lane County."

Dated this 12th day of Sept, 1984.

Chair, Lane County Board of Commissioners

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November 2, 2004

FOREST PRODUCTIVITY ANALYSIS OF FLORENCE PARCEL

T18S, R12W, Section 2, TL #1900, ±52.17 acres

I. SUMMARY

An evaluation of the site, from a timber productivity standpoint is reviewed in this analysis, in order to determine if the parcel meets the criteria for nonresource lands designation. The analysis will show that the subject property qualifies because it produces less than 50 cu.ft./ac./yr. of merchantable timber volume. This has been determined by Lane County to be the measuring parameter for nonresource lands.

II. INTRODUCTION

The timber productivity (cu.ft./ac./yr.) figures are calculated 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 (Green Sheet), and 3) Lane County Soil Ratings taken from the Office of the State Forester Memorandum (Feb. 8, 1990 General File 7-1-1). These three sources provide cu.ft./ac./yr. data for each soil type occurring on a parcel. By summing up each soil type, and dividing by the total acreage, an average per acre productivity figure for the entire parcel can be calculated. The productivity ratings given for each soil in these tables does not take any environmental abnormalities into account.

III. SITE INFORMATION

Cascade Earth Sciences (CES) conducted an assessment of the soils, on the above mentioned parcel, in order to verify and refine the boundaries of the different types of soils underlying the parcel. This assessment shows three soil types, with a fourth type being dune land, or sand. The three soils underlying the property are Netarts fine sand (94C &E), Waldport fine sand (131C & E) and Yaquina loamy fine sand (140). The dune land will not grow trees at all, the Netarts fine sand and Waldport fine sand are poor to marginal tree growing soils and the Yaquina loamy fine sand has an extremely high water table which makes it very difficult for any tree species to survive, if they can even become established. Shore pine is the predominant tree species on the property at the present time; these trees, along with rhododendron, salal and huckleberry, comprise the majority of the vegetation. There are also a few scattered Douglas-fir and red cedar trees. There are a few hemlock trees growing on adjoining properties; currently, no hemlock is growing on the subject property.

The above described parcel abuts the unstablized sand dunes along the Oregon Coast. The northwest portion is actually a small sliver of the dunes. The interface between the sand on the coast and the forested ground inland is a narrow band of land that is a particularly harsh growing environment for trees. The constant high winds and the brine contained in the salt air off the ocean is extremely harsh on trees; trees do not grow well in this zone. Therefore a soil type which will support a commercially viable forest just a mile or so inland will barely grow trees within this interface. Particularly on the Netarts and Waldport fine sands (Types 94 & 131); according to SCS data these soils are only suitable for Douglas-fir trees in areas which are protected from the wind and the Waldport fine sand is more suited to shore pine than Douglas-fir. The constant winds blowing across this parcel leave no protected areas to establish trees in. Where natural or artificial reforestation is attempted seedling mortality is high and undesirable plant competition is a problem. If trees can be established, the windthrow hazard is high due to the extremely thin soil layer on top of the sand.

IV. RESULTS OF PRODUCTIVITY CALCULATIONS

Using the three tables described in the introduction the following growth calculations are shown below (see Exhibits 1, 2 & 3). All calculations shown are for Douglas-fir. Soil type 40 is sand dune and will not grow trees, therefore has no productivity figure. No productivity ratings, from any source, can be found for soil type 140, and it is questionable whether any trees can grow in this soil type due to the extreme environmental constraints found on this site.

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
44	0.09	DF	NA	none	0
94C	14.86	DF	NA	none	0
94E	5.03	DF	NA	none	0
131C	5.04	DF	NA	none	0
131E	2.22	DF	NA	none	0
140	24.93	DF	NA	none	0
	52.17				0

Total - 0 cu.ft. ÷ 52.17 ac. = 0 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
44	0.09	DF	NA	none	0
94C	14.86	DF	80	58	861.88
94E	5.03	DF	80	58	291.74
131C	5.04	DF	92	29	146.16
131E	2.22	DF	92	29	64.38
140	24.93	DF	NA	none	0
	52.17				1,364.16

Total - 1,364.16 cu.ft. ÷ 52.17 ac. = 26.15 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
44	0.09	DF	NA	none	0
94C	14.86	DF	95	125	1,857.50
94E	5.03	DF	95	125	628.75
131C	5.04	DF	90	116	584.64
131E	2.22	DF	90	116	257.52
140	24.93	DF	NA	none	0
	52.17				3,328.41

Total - 3,328.41 cu.ft. ÷ 52.17 ac. = 63.80 cf./ac./yr.

The above tables show a wide disparity in available information regarding these soils. Only the most optimistic ratings from the "Green Sheet" show a productivity exceeding 50 cu.ft./Ac./Yr. These productivity ratings assume site indexes of 90 and 95. Productivity will match the index given a soil type if there are no adverse conditions affecting the site. These conditions include a soil depth deep enough to allow the trees to root themselves and environmental conditions conducive to tree growth. On the subject site the environmental conditions are not conducive to tree growth; it is highly unlikely that Douglas-fir could obtain these growth figures.

V. SITE SPECIFIC PRODUCTIVITY OF DOUGLAS-FIR

The tables shown above are based on the site index numbers available from the soil rating tables recognized by Lane County. All of the site index numbers on these tables are for Douglas-fir. These site index numbers are obtained from data collected from many sites to obtain an average growth figure for a particular type of soil. To use these published numbers assumes an average site. If a site has adverse environmental conditions, shallow soils, standing water, etc., trees will not obtain the productivity figures shown on the tables. For Douglas-fir growth, and other tree species, on a particular site which has adverse growing conditions, a the site index number for the specific site (as opposed to the average growth figures shown on the tables) must be obtained using other methods.

The Site Class Index for a particular site can be determined by boring trees to determine their age and measuring the total height of the bored trees. These two measurements can then be used to obtain the Site Class off of the 50-year Site Index Table (or a 100-year site class table). As a general rule, a site index of 100 to 125 (for a 50-year site index) is considered to be an average growing site. Site Indexes of 145 to 175 are exceptional growing sites, Site Indexes of 80 to 99 are considered poor to marginal, and Site Indexes lower than 80 are not generally considered to be viable tree growing sites. The growth tables for Douglas-fir do not even have projections for anything less than a 70 site index. Douglas-fir site trees bored on this parcel show a site index number of 55; a low Site Class V on the 50-year Site Index Table for Douglas-fir (King, 1966). From a forest management standpoint Site V ground is not considered viable tree growing ground. The trees present on the property at this time bear this out; for the most part they are short, stunted, gnarled trees with poor form. Growth is extremely slow, with windthrow prevalent throughout the site due to very shallow soils.

Taking the Site Index of 55 (determined from onsite sampling) and comparing it to the Site Index numbers off of the SCS tables (90 and 95, see above) will give a ratio which can be used to arrive at a cu.ft./ac./yr. number for this particular site. In this manner a productivity figure more closely matched to actual site conditions can be determined. Comparisons to both site classes are shown below. Ratios have been calculated by dividing Site Index 55 by 90 and 95; $55 \div 90 =$ **.611**, $55 \div 95 =$ **.579**. These ratios are then used to calculate Cf/Ac/Yr by multiplying the yields for the different site classes by the calculated ratios. The first figures shown below are calculated by multiplying .611 times 116 cf/ac/yr (Site Index 90, see Exhibit 3-3) = **70.88**, the second figures are calculated by multiplying .579 times 125 cf/ac/yr (Site Index 95, see Exhibit 3-2) = **72.37**.

All of the figures shown below are for Douglas-fir stands growing on the Netarts and Waldport fine sands. These two soils types have published site index numbers for Douglas-fir, therefore I have calculated productivity numbers for these soil types. The following numbers assume a fully stocked stand of Douglas-fir, though it is doubtful that Douglas-fir could be established in these soils, on this site, given the existing adverse environmental conditions. For the remaining soil type, the Yaquina loamy fine sand, I can find no data anywhere to show that Douglas-fir will grow in this soil type. The existing data states that this soil will support shore pine, brush, and little else. Existing conditions bear this out; there is no Douglas-fir and good stocking levels of shore pine. Therefore, **in the Yaquina loamy fine sand only**, I have used zero for Douglas-fir productivity.

The table below shows only Douglas-fir productivity.

Cubic Foot Numbers from above explanation, used in table below.

Growth: .611 X 116 cu.ft./ac./yr.(see above) = 70.88 cu.ft./ac./yr.

Growth: .579 X 125 cu.ft./ac./yr.(see above) = 72.37 cu.ft./ac./yr.

Soil Unit	Acres	Species	Site Index	Cf/Ac/Yr	Total Cu.Ft. Productivity	Cf/Ac/Yr	Total Cu.Ft. Productivity
44	0.09	DF	NA	none	0	0	0
94C	14.86	DF	55	70.88	1,053.28	72.37	1,057.42
94E	5.03	DF	55	70.88	356.53	72.37	364.02
131C	5.04	DF	55	70.88	357.24	72.37	364.75
131E	2.22	DF	55	70.88	157.35	72.37	160.66
140	24.93	DF	NA	0.00	0.00	0	0.00
	52.17				1,924.4		1,946.85

Total - 1,924.4 cu.ft. ÷ 52.17 ac. = 36.89 cf./ac./yr.

Total - 1,946.85 cu.ft. ÷ 52.17 ac. = 37.32 cf./ac./yr.

The above tables show the subject property produces less than 50 cu.ft./ac./yr. of merchantable Douglas-fir volume.

VI. TREE SPECIES OTHER THAN DOUGLAS-FIR

CONIFER TREE SPECIES	Does This Tree Produce Merchantable Products	Will This Species Grow On This Site
Douglas-fir	Yes	Yes
Valley Ponderosa Pine	Yes	NO
Jeffrey Pine	Yes	NO
Shore Pine	Yes	Yes
Lodgepole Pine	Yes	NO
Western White Pine	Yes	NO
Limber Pine	NO	NO
Whitebark Pine	NO	NO
Sugar Pine	Yes	NO
Western Red Cedar	Yes	Yes
Incense Cedar	Yes	NO
Port Orford Cedar	Yes	NO
Alaska Yellow Cedar	Yes	NO
Knobcone Pine	NO	NO
Grand/White Fir	Yes	NO
Noble Fir	Yes	NO
Shasta Red Fir	Yes	NO
Pacific Silver Fir	Yes	NO
Subapline Fir	NO	NO
Sitka Spruce	Yes	Yes*
Engelmann Spruce	Yes	NO
Brewer Spruce	NO	NO
Western Larch	Yes	NO
Western Juniper	Yes	NO
Western Hemlock	Yes	Yes*
Mountain Hemlock	Yes	NO
KMX	NO	NO
Pacific Yew	Yes	NO
Redwood	Yes	NO
Sequoia	Yes	NO

*These species will theoretically grow on this site, however, neither species exists on the site at the present time.

Constraints to growth for conifer species which will not grow on this site:

Valley Ponderosa Pine - Site is out of its' geographic range.
Jeffrey Pine - Site is out of its' geographic range, this tree is almost identical to ponderosa pine, it just grows in other areas, primarily northern California.
Lodgepole pine - Site is out of its' geographic range, it is an eastern Oregon tree.
Western White Pine - White pine grows scattered throughout other trees, it does not grow in pure stands and is extremely susceptible to blister rust (which kills the tree), therefore it is not planted.
Limber and Whitebark Pine - High elevation, bush-like trees.
Sugar Pine - Site is out of its' geographic range, grows scattered among other trees, it does not grow in pure stands.
Incense Cedar - Too much moisture on this site, does not grow in pure stands, out of its' geographical range.
Port Orford Cedar - Site is out of its' geographic range, grows scattered among other trees, it does not grow in pure stands. Currently a root rot is killing this tree throughout its' range.
Alaska Yellow Cedar - Site is out of its' geographic range, grows scattered among other trees, it does not grow in pure stands.
Knobcone Pine - Extremely slow growing, scarce bush-like tree, which grows on harsh sites (primarily high elevation ridges) by coming in after a fire; it is not a commercial speces.
Grand/White Fir - Seldom grows in pure stands, soils too poor on this site to support growth.
Noble, Shasta Red, Pacific Silver Fir - Site is out of its' geographic range, these are high elevation trees.
Subalpine Fir - Noncommercial, high elevation tree, site is out of its' geographic range.
Engelmann Spruce - Site is out of its' geographic range, high elevation tree.
Brewer Spruce - Noncommercial, high elevation tree, site is out of its' geographic range.
Western Larch - Site is out of its' geographic range, it is an eastern Oregon tree.
Western Juniper - Site is out of its' geographic range, it is an eastern Oregon tree.
Mountain Hemlock - Site is out of its' geographic range, high elevation tree.
KMX - Noncommercial, bush-like tree.
Pacific Yew - Not enough moisture on this site, slow growing, scarce tree grows scattered underneath larger canopy of trees.
Redwood - Site is out of its' geographic range, this tree only grows near Brookings, Oregon and south into California.
Sequoia - Site is out of its' geographic range, this tree grows primarily in the Sierra Nevada Mountains in California. It also does better on drier sites.

VII. DISCUSSION OF PRODUCTIVITY FOR CONIFERS OTHER THAN DOUGLAS-FIR

A few western red cedar trees are scattered about on this property. Red cedar is very slow growing and seldom grows in pure stands; even then the stands will only cover small areas. It is normally a small component of mixed stands. Establishing a pure stand of red cedar would be extremely difficult, if possible at all. For these reasons productivity figures for a stand of red cedar cannot be found.

Hemlock and spruce could grow **in these soil types** if the conditions were conducive to their growth. Currently these trees do not exist on the subject parcel, although there are a few hemlocks on adjoining properties. Environmental conditions (discussed above) are not conducive for hemlock and spruce growth. As such it would be extremely difficult to establish a stand of either tree. Growing conditions on this site are so poor that these species are easily outcompeted by shore pine, which is the primary species growing on the parcel today.

Shore pine will and does grow on the site. It is virtually the only tree species currently growing on the site at the present time. It is one of the few trees which will grow in the Yaquina fine sandy loam soil (Type 140) (see Exhibit 4). Shore pine is a variety of lodgepole pine which grows in coastal areas; lodgepole pine grows inland, most commonly in mountainous areas (see Exhibit 5). It is a small scrubby tree which is short and does not obtain large diameters (see Exhibit 6). Whereas inland lodgepole pine will grow to 45-50m in height, shore pine will only grow to 10m in height (see Exhibit 7). Due to its shallow root system shore pine is extremely susceptible to windthrow. Shore pine is very limby and often deformed. In windy areas, such as the subject site, it grows in gnarly, close to the ground forms.

While lodgepole pine growing east of the Cascades has been a merchantable species for decades, it has only been in the last 10-15 years that mills west of the Cascades have been able to utilize the shore pine wood. Boards can be cut out of the few straight logs within a stand. Before this point in time shore pine was considered useless. Due to these factors there are no productivity or growth tables for shore pine.

To obtain productivity figures I have talked with mills which buy and log shore pine, and relied on timber cruise data from stands that I have cruised and timber company foresters have cruised. Due to all of the factors discussed above, and the manner in which the tree grows, volumes per acre for this tree are extremely low in comparison to other species. All figures are in Scribner board foot volumes, the volume measurement used throughout the Northwest. Most stands of shore pine rarely exceed three thousand feet per acre, although some very well stocked stands of have obtained five thousand feet per acre. Therefore, I have used the figure of five thousand feet per acre even though I do not believe this site can obtain these growth figures. Using this figure will present the most **optimistic** growth projections.

First the per thousand figures must be converted to cubic foot figures. Conversion numbers vary depending on the diameter of the tree. Trees with a larger diameter will have fewer cubic feet per Scribner board feet. The age varies the conversion factor because older trees have a larger diameter than younger trees. Shore pine stands can take up to 80 years to reach their maximum volume per acre. However, for this analysis I will assume a shore pine stand can reach its maximum volume per acre in 50 years. This will give the most optimistic cf/ac/yr productivity number. At maturity shore pine diameters will range from 6 to 20 inches (see Exhibit 6). Looking at the board foot to cubic foot conversion table (see Exhibit 8), it can be seen that that the 6 inch diameter trees convert to more cubic foot volume than the 20 inch diameter trees. I have used the 6 inch diameter conversion number in order to obtain the **most optimistic** productivity figure possible, even though these figures would be virtually impossible to obtain on this site. The trees would also be a larger average diameter, but using the lowest number avoids any argument as to what the average diameter of the stand is at maturity.

Cubic Foot Productivity per Acre using a 6" diameter conversion factor

-- 5,000 board feet ÷ 4.13 board feet per board foot = 1,211 cubic feet per acre

Cubic Foot Productivity per Acre using a 20" diameter conversion factor

-- 5,000 board feet ÷ 7.27 board feet per board foot = 688 cubic feet per acre

Realistically the stand conversion would be somewhere between these two numbers. However, in order **to present the most optimistic** growth figures, I have used the higher cubic foot per acre number.

The final calculation is to compute the cubic feet per acre per year. Using the **optimistic** productivity figure of 1,211 cubic feet per acre divided by the **optimistic** rotation age of 50 years, results in 24.22 cf/ac/yr. This figure is used in the table shown below for shore pine productivity.

Table showing shore pine productivity only.

Soil Unit	Acres	Species	Site Index	Cf/Ac/Yr	Total Cu.Ft. Productivity
44	0.09	NA	NA	none	0
94C	14.86	SP	NA	24.22	359.91
94E	5.03	SP	NA	24.22	121.83
131C	5.04	SP	NA	24.22	122.07
131E	2.22	SP	NA	24.22	53.77
140	24.93	SP	NA	24.22	603.80
	52.17				1,261.38

Total - 1,261.38 cu.ft. ÷ 52.17 ac. = 24.18 cf./ac./yr.

The final table presented below includes the highest productivity for each different soil type.

Soil Unit	Acres	Species	Site Index	Cf/Ac/Yr	Total Cu.Ft. Productivity
44	0.09	DF	NA	none	0
94C	14.86	DF	55	72.37	1,057.42
94E	5.03	DF	55	72.37	364.02
131C	5.04	DF	55	72.37	364.75
131E	2.22	DF	55	72.37	160.66
140	24.93	SP	NA	24.22	603.80
	52.17				2,550.65

Total - 2,528.20 cu.ft. ÷ 52.17 ac. = 48.89 cf./ac./yr.

The above tables assume the **most optimistic productivity figures possible**, erring on the high side in every instance. Although I do not believe that the subject site is capable of approaching these growth figures, the above tables show the property produces less than 50 cu.ft./ac./yr. of merchantable conifer volume given the best case scenario.

VIII. DISCUSSION OF PRODUCTIVITY FOR HARDWOODS

HARDWOOD TREE SPECIES	Does This Tree Produce Merchantable Products	Will This Species Grow On This Site
Red Alder	Yes	NO
Bigleaf Maple	Yes	NO
White Oak	Yes	NO
Oregon Ash	NO	NO
Cottonwood	NO	NO
Hybrid Poplar	Yes	NO

Constraints to Growth: All of the above hardwood species listed as not capable of growing on this site prefer deeper, alluvial type soils, except for white oak which prefers much drier sites and will not grow along the coast.

VI. CONCLUSION

The analysis presented shows conclusively that this property will not support a merchantable stand of timber, of sufficient production capabiltiy, even if the most optimistic growth was realized, to meet or exceed the Nonresource Lands test:

1) The subject property produces less than 50 cu.ft./ac./yr. of merchantable timber volume; only 37.32 cubic feet. This has been determined by Lane County to be the measuring parameter for nonresource soils.

In summary, I find from the specific site conditions present in this narrow band of land between the sand dunes and inland, 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 nonresource land.

Sincerely,

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 Farmlan
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

EXHIBIT 1-2

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.

EXHIBIT 1-3

EXHIBIT 2-1

-472

2-7-90

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 si, 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
035	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

EXHIBIT 2-2

	Pits	3	700	
14	Riverwash	3	2050	
15H	Rock Outcrop-Kilchis complex. 30-90%	Low	3950	34
16G	Rock Outcrop-Witzel complex. 10-70%	Low	1480	21
25C	Steiwer l. 3-12%	Low	2790	est 30
25D	Steiwer l. 12-20%	Low	1000	est 30
25F	Steiwer l. 20-50%	Low	1240	est 30
27C	Urban Land-Hazelair-Dixonville. 3-12%	Low	1450	est 45
30	Waldo sicl	3	7550	est 45
31C	Waldport fs. 0-12%	Low 92	1700	29
31E	Waldport fs. 12-30%	Low 92	1000	29
31G	Waldport fs. 30-70%	Low 92	650	29
32E	Waldport fs. thin surf.. 0-30%	Low 92	2110	29
33C	Waldport-Urban Land Complex. 0-12%	Low	250	est 20
36	Willanch fsl	3	870	est 40
37F	Winberry v gr l. 10-45%	Low 70	560	48
38E	Witzel v cob l. 3-30%	Med 90	5780	70
38G	Witzel v cob l. 30-75%	Med 90	5520	70
41	Yaquina-Urban land complex	3	260	est 45
42G	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.

low 189,500 ac

med

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
019	Briedwell cob l. 0-7%	High	135	1780	138
022	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

LANE COUNTY FOREST SOIL RATINGS

Map Symbol	Soil Name	Site Index [1]	Cubic Foot /Acre/Year [2]
027	Chehalis-Urban land complex	***	90**
028C	Chehulpum sil, 3-12%	none	40**
028E	Chehulpum sil, 12-40%	none	40**
029	Cloquato sil	130	193
030	Cloquato-Urban land complex	***	100**
031	Coburg sicl	none	100**
032	Coburg-Urban land complex	***	90**
033	Conser sicl	none	45**
034	Courtney gr sicl	none	40**
035D	Cruiser gr cl, 3-25%	140*	214
035F	Cruiser gr cl, 25-50%	140*	214
035G	Cruiser gr cl, 35-70%	140*	214
036D	Cumley sicl, 2-20%	114	162
037C	Cupola cob l, 3-12%	120	175
037E	Cupola Cob l, 12-30%	120	175
038	Dayton sil, clay sub	none	40**
039E	Digger gr l, 10-30%	116	167
039F	Digger gr l, 30-50%	116	167
040H	Digger-Rock outcrop complex, 50-85%	***	114**
041C	Dixonville sicl, 3-12%	97	130
041E	Dixonville sicl, 12-30%	97	130
041F	Dixonville sicl, 30-50%	97	130
042E	Dixonville-Hazelair-Urban land, 12-35%	***	35**
043C	Dixonville-Philomath-Hazelair, 3-12%	***	45**
043E	Dixonville-Philomath-Hazelair, 12-35%	***	45**
044	Dune land	none	none
045C	Dupee sil, 3-20%	none	70**
046	Eilertsen sil	124	182
047E	Fendall sil, 3-30%	127	188
048	Fluvents, nearly level	none	none
049E	Formader l, 3-30%	124	182
049G	Formader l, 30-60%	124	182
050G	Formader-Hembre-Klickitat, 50-80%	***	170**
051B	Haflinger-Jimbo complex, 0-5%	***	161**
052B	Hazelair sicl, 2-7%	none	40**
052D	Hazelair sicl, 7-20%	none	40**
053	Heceta fs	none	40**
054D	Hembre sil, 5-25%	127*	188
054G	Hembre sil, 25-60%	127*	188
055E	Hembre-Klickitat complex, 3-30%	***	170**

All ratings are taken from the "Single Phase Interpretation Sheets" (green sheets) published by the Soil Conservation Service (SCS) for the Lane County Area, Oregon except those marked **

All ratings are for Douglar Fir unmanaged, fully stocked stands.

* ratings for additional tree species are listed on SCS green sheets

** These estimated soils ratings are taken from an Office of State Forester Memorandum, February 8, 1990, General File 7-1-1

*** multiple site indices; refer to the cu.ft./acre/yr column for a composite rating for this complex

[1] 50 year base

[2] volume produced at age of culmination

EXHIBIT 3-1

LANE COUNTY FOREST SOIL RATINGS

Map Symbol	Soil Name	Site Index [1]	Cubic Foot /Acre/Year [2]
077B	Marcola cob sicl, 2-7%	97	130
078	McAlpin sicl	125	184
079	McBee sicl	119	173
080F	McCully cl, 30-35%	125	184
080G	McCully cl, 50-70%	125	184
081D	McDuff cl, 3-25%	115	163
081F	McDuff cl, 25-50%	115	163
081G	McDuff cl, 50-70%	120	175
082C	Meda l, 2-12%	128	190
083B	Minniece sicl, 0-8%	112	158
084D	Mulkey l, 5-25%	90*	116
085	Natroy sicl	none	60**
086	Natroy sic	none	60**
087	Natroy-Urban land complex	***	40**
088	Nehalem sil	124	182
089C	Nekia sicl, 2-12%	115	163
089D	Nekia sicl, 12-20%	115	163
089E	Nekia sicl, 20-30%	115	163
089F	Nekia sicl, 30-50%	112	158
090	Nekoma sil	140	214
091D	Neskowin sil, 12-20%	109*	152
091E	Neskowin sil, 20-40%	109*	152
092G	Neskowin-Salander sil, 40-60%	***	205**
093	Nestucca sil	99	134
094C	Netarts fs, 3-12%	95	125
094E	Netarts fs, 12-30%	95	125
095	Newberg fsl	110	154
096	Newberg l	110	154
097	Newberg-Urban land complex	***	100**
098	Noti l	none	30**
099H	Ochrepts & Umbrepts, v. steep	***	130**
100	Oxley gr sil	none	80**
101	Oxley-Urban land complex	***	60**
102C	Panther sicl, 2-12%	none	45**
103C	Panther-Urban land complex, 2-12%	***	40**
104E	Peavine sicl, 3-30%	124	182
104G	Peavine sicl, 30-60%	124	182
105A	Pengra sil, 1-4%	none	45**
106A	Pengra-Urban land complex, 1-4%	***	30**
107C	Philomath sic, 3-12%	none	45**

All ratings are taken from the "Single Phase Interpretation Sheets" (green sheets) published by the Soil Conservation Service (SCS) for the Lane County Area, Oregon except those marked **

All ratings are for Douglar Fir unmanaged, fully stocked stands.

* ratings for additional tree species are listed on SCS green sheets

** These estimated soils ratings are taken from an Office of State Forester Memorandum, February 8, 1990, General File 7-1-1

*** multiple site indices; refer to the cu.ft./acre/yr column for a composite rating for this complex

[1] 50 year base

[2] volume produced at age of culmination

EXHIBIT 3-2

LANE COUNTY FOREST SOIL RATINGS

Map Symbol	Soil Name	[1] Site Index	[2] Cubic Foot /Acre/Year
108C	Philomath cob sic, 3-12%	none	45**
108F	Philomath cob sic, 12-45%	none	45**
109F	Philomath-Urban land complex, 12-45%	***	20**
110	Pits	none	none
111D	Preacher l, 0-25%	128*	190
111F	Preacher l, 25-50%	128*	190
112G	Preacher-Bohannon-Slickrock, 50-75%	***	185**
113C	Ritner cob sicl, 2-12%	102*	140
113E	Ritner cob sicl, 12-30%	102*	140
113G	Ritner cob sicl, 30-60%	102*	140
114	Riverwash	none	none
115H	Rock outcrop-Kilchis complex, 30-90%	***	34**
116G	Rock outcrop-Witzel complex, 10-70%	***	21**
117E	Salander sil, 12-30%	125*	184
118	Salem gr sil	114	162
119	Salem-Urban land complex	***	100**
120B	Salkum sil, 2-6%	119	173
121B	Salkum sil, 2-6%	126	186
121C	Salkum sicl, 8-16%	126	186
122	Saturn cl	104	143
123	Sifton gr l	110	154
124D	Slickrock gr l, 3-25%	137*	209
124F	Slickrock gr l, 25-50%	137*	209
125C	Steiwer l, 3-12%	none	30**
125D	Steiwer l, 12-20%	none	30**
125F	Steiwer l, 20-50%	none	30**
126F	Tahkenitch l, 20-45%	120	175
126G	Tahkenitch l, 45-75%	112	158
127C	Urban land-Hazelair-Dixonville, 3-12%	***	45**
128B	Veneta l, 0-7%	108	150
129B	Veneta variant sil, 0-7%	128	190
130	Waldo sicl	none	45**
131C	Waldport fs, 0-12%	90	116
131E	Waldport fs, 12-30%	90	116
131G	Waldport fs, 30-70%	90	116
132E	Waldport fs, thin surf., 0-30%	none	29**
133C	Waldport-Urban land complex, 0-12%	***	20**
134	Wapato sicl	none	none
135C	Willakenzie cl, 2-12%	110	154
135D	Willakenzie cl, 12-20%	110	154

All ratings are taken from the "Single Phase Interpretation Sheets" (green sheets) published by the Soil Conservation Service (SCS) for the Lane County Area, Oregon except those marked **

All ratings are for Douglar Fir unmanaged, fully stocked stands.

* ratings for additional tree species are listed on SCS green sheets

** These estimated soils ratings are taken from an Office of State Forester Memorandum, February 8, 1990, General File 7-1-1

*** multiple site indices; refer to the cu.ft./acre/yr column for a composite rating for this complex

[1] 50 year base

[2] volume produced at age of culmination

EXHIBIT 3-3

LANE COUNTY FOREST SOIL RATINGS

Map Symbol	Soil Name	[1] Site Index	[2] Cubic Foot /Acre/Year
135E	Willakenzie cl, 20-30%	110	154
135F	Willakenzie cl, 30-50%	110	154
136	Willanch fsl	none	40**
137F	Winberry v gr l, 10-45%	80	98
138E	Witzel v cob l, 3-30%	none	70**
138G	Witzel v cob l, 30-75%	none	70**
139	Woodburn sil	133	199
140	Yaquina lfs	none*	none
141	Yaquina-Urban land complex	***	45**
142G	Yellowstone-Rock outcrop, 10-60%	***	38**

All ratings are taken from the "Single Phase Interpretation Sheets" (green sheets) published by the Soil Conservation Service (SCS) for the Lane County Area, Oregon except those marked **

All ratings are for Douglar Fir unmanaged, fully stocked stands.

* ratings for additional tree species are listed on SCS green sheets

** These estimated soils ratings are taken from an Office of State Forester Memorandum, February 8, 1990, General File 7-1-1

*** multiple site indices; refer to the cu.ft./acre/yr column for a composite rating for this complex

[1] 50 year base

[2] volume produced at age of culmination

EXHIBIT 3-4

EXHIBIT 4

when wet. Buildings and roads should be designed to offset the limited ability of the soil in this unit to support a load. Wetness can be reduced by installing drain tile around footings.

Septic tank absorption fields on this unit may not function properly during rainy periods because of wetness and slow permeability.

This map unit is in capability subclass IIw.

140—Yaquina loamy fine sand. This deep, somewhat poorly drained soil is in low, interdune positions in coastal dune areas. It formed in eolian sand of mixed origin. Slope is 0 to 3 percent. Areas are irregular in shape and are 3 to 100 acres or more in size. The native vegetation is mainly shore pine, scattered Sitka spruce, Pacific rhododendron, salal, and evergreen huckleberry. Elevation is 20 to 130 feet. The average annual precipitation is 70 to 80 inches, the average annual air temperature is 50 to 52 degrees F, and the average frost-free period is 180 to 210 days.

Typically, the surface is covered with a mat of needles, twigs, sedges, and grass about 0.5 inch thick. The surface layer is very dark gray loamy fine sand about 2 inches thick. The subsurface layer is light gray fine sand about 6 inches thick. The next layer is grayish brown fine sand about 5 inches thick. The subsoil is light brownish gray, mottled fine sand about 16 inches thick. The substratum to a depth of 60 inches or more is yellowish brown, pale brown, and grayish brown fine sand. In some areas the soils are poorly drained and have a darker colored surface layer. In some areas organic material and finer textured soil material are below a depth of 40 inches.

Included in this unit are small areas of Bandon, Netarts, and Waldport soils. Included areas make up about 15 percent of the total acreage.

Permeability of this Yaquina soil is moderately rapid. Available water capacity is about 3.5 to 5.0 inches. Water supplying capacity is 20 to 24 inches. Effective rooting depth is limited by a high water table that is 2 feet above the surface to 2 feet below the surface from November to April. Runoff is slow to ponded, and the hazard of water erosion is moderate. The hazard of soil blowing is high if the plant cover is removed.

Most areas of this unit are used for wildlife habitat. A few areas are used for pasture and as homesites.

If this unit is used for pasture, the main limitations are the hazard of soil blowing and wetness. The soil should not be cultivated during dry periods because of the hazard of soil blowing. Wetness limits the choice of plants and the period of cutting or grazing and increases the risk of winterkill. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture in good condition and to protect the soil from erosion. Annual applications of lime and mixed fertilizer are needed to maintain production of high-quality irrigated pasture.

This unit is suited to wildlife habitat in areas that are under natural vegetation. Soil blowing is a hazard in areas where the soil is barren.

If this unit is used for recreational development, the main limitations are wetness and the sandy texture of the soil. Drainage is needed if roads and building foundations are constructed. Areas used for recreation can be protected from soil blowing and dustiness by maintaining plant cover. Plant cover can be maintained by limiting traffic. Only trees and shrubs that tolerate wetness should be planted.

If this unit is used for homesite development, the main limitations are wetness and corrosivity to steel and concrete. Building materials should be carefully selected to overcome the corrosivity of the soil. Drainage is needed if roads and building foundations are constructed.

Revegetating disturbed areas around construction sites as soon as possible helps to control soil blowing. Plans for homesite development should provide for the preservation of as many trees as possible. Mulch, fertilizer, and irrigation are needed to establish lawn grasses and other small-seeded plants. Drainage is also needed for best results with most lawn grasses, shade trees, ornamental trees, shrubs, vines, and vegetable gardens.

This map unit is in capability subclass IVw.

141—Yaquina-Urban land complex. This map unit is in low interdune positions in coastal dune areas. Slope is 0 to 3 percent. Areas are irregular in shape and are 3 to 100 acres or more in size. The native vegetation is mainly shore pine, scattered Sitka spruce, Pacific rhododendron, salal, and evergreen huckleberry. Elevation is 20 to 130 feet. The average annual precipitation is 70 to 80 inches, the average annual air temperature is 50 to 52 degrees F, and the average frost-free period is 180 to 210 days.

This unit is 45 percent relatively undisturbed Yaquina loamy fine sand, 5 percent disturbed Yaquina loamy fine sand, and 40 percent Urban land. 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 Bandon, Netarts, and Waldport soils. Included areas make up about 10 percent of the total acreage.

The relatively undisturbed Yaquina soil is deep and somewhat poorly drained. It formed in eolian sand of mixed origin. Typically, the surface is covered with a mat of needles, leaves, sedges, and grasses about 0.5 inch thick. The surface layer is very dark gray loamy fine sand about 2 inches thick. The subsurface layer is light gray fine sand about 6 inches thick. The next layer is grayish brown fine sand about 5 inches thick. The subsoil is light brownish gray, mottled fine sand about 16 inches thick. The substratum to a depth of 60 inches or more is

Pinus contorta Dougl. ex. Loud.

Lodgepole Pine

Pinaceae -- Pine family

James E. Lotan and William B. Critchfield

Lodgepole pine *(Pinus contorta)* is a two-needled pine of the subgenus *Pinus*. The species has been divided geographically into four varieties: *P. contorta* var. *contorta*, the coastal form known as shore pine, coast pine, or beach pine; *P. contorta* var. *bolanderi*, a Mendocino County White Plains form in California called Bolander pine; *P. contorta* var. *murrayana* in the Sierra Nevada, called Sierra lodgepole pine or tamarack pine; and *P. contorta* var. *latifolia*, the inland form often referred to as Rocky Mountain lodgepole pine or black pine. Although the coastal form grows mainly between sea level and 610 m (2,000 ft), the inland form is found from 490 to 3660 m (1,600 to 12,000 ft).

Habitat

Native Range

Lodgepole pine is an ubiquitous species with a wide ecological amplitude. It grows throughout the Rocky Mountain and Pacific coast regions, extending north to about latitude 64° N. in the Yukon Territory and south to about latitude 31° N. in Baja California, and west to east from the Pacific Ocean to the Black Hills of South Dakota. Forests dominated by lodgepole pine cover some 6 million ha (15 million acres) in the Western United States and some 20 million ha (50 million acres) in the

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What's Hot

Seasonal growth of lodgepole pine has been observed on the east slope of the Rocky Mountains in Alberta and the Sierra Nevada in California. In the subalpine forest of Alberta leader growth of saplings for a 4-year period consistently started in early May and continued for 12 weeks (*40*).

An 8-year record made on the west slope of the Sierra Nevada, at about 5,200 feet elevation, showed that lodgepole pine begins height growth earlier than its common tree associates in this locality. For example, 88 percent of the seasonal height growth of lodgepole pine was completed before white fir started height growth. About 60 percent of the seasonal height growth of lodgepole pine was completed at the time of needle emergence from the fascicle sheath, and all of it was completed before needle growth ceased. Lodgepole pine also ceased height growth before any of its tree associates in this region (*27*).

Vegetative reproduction.—Lodgepole pine has been grafted successfully on mature ponderosa pine (*52*) and on Scotch pine (*Pinus sylvestris*) (*37*). It does not reproduce naturally by sprouting. Adventitious roots have been developed artificially from 8-year-old lodgepole pines by air-layering, after treatment with 1.2 percent solutions of either indole acetic or indole butyric acid in a talcum powder carrier. The roots developed from the cambium along with the secondary xylem of the current year's growth, and from parenchymatous callus tissues (*82*).

F—189697

200-year-old lodgepole pine on the Targhee National Forest, Idaho.

Sapling Stage to Maturity

Growth and yield.—Lodgepole shows remarkable range in stand density and striking reactions to both density and environment (*66*, *72*). For example, in the Rocky Mountains in 100-year-old stands of varying density the maximum yield was of 20,000 board feet per acre with 800 trees; yield fell off rapidly to less than 1,500 board feet when the number of trees increased to 1,800 (*48*). Stagnated stands 70 years old may have as many as 100,000 trees per acre, averaging only 4 feet in height and less than 1 inch in diameter at the ground.

On the average, yields of 12,000 to 15,000 board feet per acre are considered good in old-growth Rocky Mountain lodgepole pine. Yields of 20,000 to 25,000 board feet per acre are exceptional. Generally, yields per acre are lower in Montana than in Colorado.

The lodgepole growing at a low elevation in northeastern Washington and adjacent areas in northern Idaho has a faster growth rate and dies earlier than the lodgepole pine at higher elevations in Montana. These low-elevation stands generally start breaking up at 80 to 100 years.

Lodgepole pine does not prune well naturally and in open-grown stands branches are retained nearly to the ground. In dense stands the clear-boled appearance of the trees is often misleading. Pruning of the bole for 10 to 25 percent of its length is common. However, pruning often does not progress to complete elimination of the basal part of the branches.

Sizes attained at maturity vary greatly. Within the main lodgepole pine region most trees at 140 years are 7 to 13 inches in diameter and 60 to 80 feet tall (*48*). In the Blue Mountains of Oregon at 100 years old, trees average 12 inches in diameter and 70 to 80 feet in height. At 100 years in the Sierra Nevada trees reach average diameters of 15 to 18 inches and average heights of 90 to 100 feet (*33*).

Trees of the coastal form vary greatly in size at given ages; mature trees are from 6 to 20 inches in diameter and from 20 to 40 feet tall. On a small plateau a few miles wide along the coastal plain of Mendocino County, Calif., an extreme condition is found where mature lodgepole pine is little more than a canelike dwarf 2 to 5 feet high. This dwarfed condition is associated with a highly acid hardpan soil (*49*).

The largest tree of this species on record is 19 feet in circumference at 4½ feet above ground and is 106 feet tall (*3*). It is located outside of

EXHIBIT 6

Shore/Lodgepole Pine

Pinus contorta spp

Description:

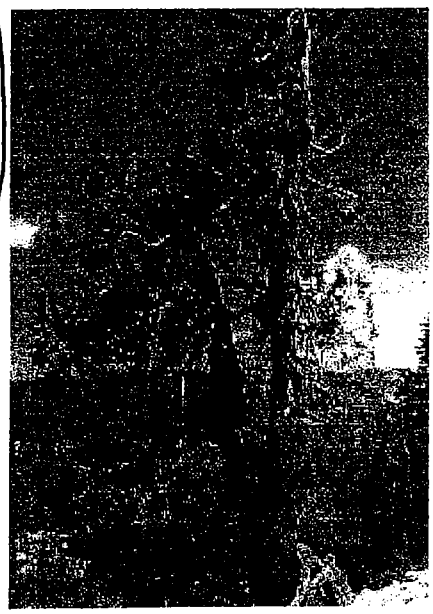
This conifer has two forms the Shore Pine grows to around 10m maximum whereas the Lodgepole Pine subspecies grows to a maximum of 45-50m.

It is a short lived but very hardy species that will survive in habitats that defeat other conifers.

The Shore Pine grows in lowland and prefers bog conditions whereas the Lodge Pole Pine prefers montane locations.

Problems:

None known



Facts:

Introduced: 1855

Origin: North America, Canada

Location: Various UK locations

Status: Stable

Comments:

EXHIBIT 7

Table 4. Comparison of Board-Foot Volumes and Board-Foot–Cubic-Foot Ratios for Three Log Rules (16-Ft logs)

Diameter at (in)	Volume (ft^3)	Volume in board feet			Board feet per cubic foot		
		Doyle	Scribner	Inter ¼"	Doyle	Scribner	Inter ¼"
6	4.3	4	18	20	0.92	4.13	4.59
8	7.1	16	32	40	2.23	4.47	5.59
10	10.6	36	50	65	3.38	4.70	6.11
12	14.8	64	79	95	4.32	5.24	6.42
14	19.7	100	114	135	5.08	5.78	5.85
16	25.3	144	159	180	5.69	6.28	7.11
18	31.5	196	213	230	6.22	6.76	7.30
20	38.5	256	280	290	6.65	7.27	7.53
25	59.0	441	459	460	7.47	7.78	7.80
30	83.9	676	657	675	8.06	7.83	8.05
35	113.1	961	876	925	8.50	7.75	8.18
40	146.7	1296	1204	1220	8.83	8.21	8.32
45	184.7	1681	1518	1550	9.10	8.22	8.39

"Computed by Smalian's formula assuming ½-in taper per 4 ft. (Vol. ft^3 16-ft log = $0.021817(4D)^2 + 8D + 5.5$) where, D = diameter at small end in inches.)
Source: Charles J. Miller, Purdue University, Personal Files.

EXHIBIT 8

4. Taper in long logs. Taper may be measured or may be specified as, for example, 1 in in 8 ft.
5. Trim allowance. This varies from 2 to 3 in for short logs to 8 in for 40-ft logs.
6. Scaling diameters. Logs are commonly measured at the small end, occasionally at at the middle, and rarely at the large end. Measurements are made with a scale stick or calipers, and generally are made inside the bark. U.S. Forest Service practice is to take a pair of measurements at right angles to each other, determine average, and round to the nearest inch. Some organizations may take the smallest diameter, or occasionally the largest diameter, and disregard all fractions of an inch, thus scaling an 18.8-in log as 18 in.
7. Log identification. All logs, sound or cull, should be numbered after scaling. Culls should be designated. And where appropriate, there should be a feller's or bucker's identification.
8. Merchantability standards. Size limits, permissible defects, acceptable species, and grading rules.
9. Penalty scale. How and when to apply.
10. Check scale. How and when it will be applied. Limits of error.
11. Records. Forms to be used, purposes of scale, and to whom delivered.
12. Other duties. Supervision of cutting standards, and similar jobs.

DEDUCTIONS FOR DEFECT. To determine net scale, one must deduct from gross scale the quantity of lumber, according to the log rule used, that will be lost due to defects. These deductions do not include material lost during manufacturing, or defects that affect the quality of the lumber. They include only those defects that reduce the volume of lumber.

The National Forest Log Scaling Handbook of the United States Forest Service gives detailed procedures to estimate the volume of deductions in defective logs. But a more applicable system was given by L. R. Grosenbaugh in 1952. In this method the amount of material lost in defect is estimated by multiplying the gross scale by the proportion of the log affected. The system works regardless of the units in which the log is measured: board

Lane County
Public Works

LANE COUNTY
RECEIPT

08-26-2005

RECEIPT NUMBER: **R05007068**

PLANNING ACTION #: **PA056249**

TYPE: PLAN AMEND ZONE CH
SITE ADDRESS: 88420 HWY 101 FLO
PARCEL: 18-12-02-20-01900
APPLICANT: CORNACCHIA STEVE
180 E 11TH AVE
EUGENE OR

97401
541-686-8511

Type	Method	Description	Amount
Payment	Check	2130	6,010.00

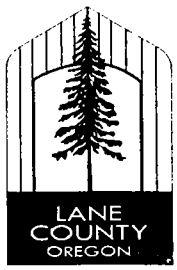
	Description	Current Pymt
2000	New Technology Fee	10.00
2100	Administrative Fee	750.00
3050	Planning Plan Amendments	5,000.00
3065	Long Range Planning Surc	250.00

PAID BY: JULIA CARVER

ATTACHMENT 6

FILE RECORD CONTENT SHEET

PA 05-6249



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

No.	Item	Date
1.	Application for Special Use Permit PA 05-6249	8/26/05
	a) Application for Plan Amendment / Zone Change	
	b) Ex. A Assessment & Taxation Map 18-12-02-20	
	c) Ex. Legal Description	
	d) Ex. Lane County Correspondence (Legal Lot Determination)	
	e) Ex. Soils Assessment	
	f) Ex. Paul Day Agricultural Capacity Review	
	g) Ex. F LCDC Acknowledgement 9/13/84	
	h) Ex. G Exhibits C and D of Ordinance No. PA 889	
	i) Ex. H Order 84-9-12-3	
	j) Ex. I Order 84-9-12-4	
	k) Ex. J Marc Setchko Forestry productivity Analysis	
2.	Email from Roy Carver	4/27/06
3.	Submittal from Marc E. Setchko	4/28/06
4.	Letter from Steve Cornacchia	5/1/06
5.	Notice of Hearing	6/12/06
6.	Certification of Mailing	6/12/06
7.	DLCD Notice	6/12/06
8.	Fax to Register Guard	6/30/06
9.	Legal Ad	7/12/06
10.	Letter from DLCD	7/13/06
11.	Certification of Posting	7/18/06
12.	LCPC Staff Report	7/25/06
13.	LCPC Agenda	8/1/06
14.	Submittal from Goal One Coalition	8/1/06
15.	Email from Ed Becker	8/2/06
16.	Email from Thom Lanfear	8/2/06
17.	Submittal from Goal One Coalition	8/14/06
	a) Letter from Jim Just	
	b) Order 84-9-12-3	
	c) Addendum to Forest Lands Working Paper pages 5 & 6	
18.	Submittal from Darald Heer	8/15/06
	a) Letter from Darald Heer	
	b) Signed Petition	
	c) Letter from Darald Heer 8/10/06	
	d) photos	
19.	Letter from Thom Lanfear	8/17/06
20.	Returned Mail	8/21/06
21.	Certified Professional Soil Scientist (CPSS) Public Registry	8/28/06
22.	LCPC Memorandum	8/29/06
23.	Letter to Darald Heer	8/30/06
24.	Letter from Darald Heer	9/1/06
25.	LCPC Agenda	9/5/06
26.	Submittal by Steve Cornacchia	9/27/06
	a) Proposed Findings of Fact	
	b) Letter from Steve Cornacchia	
	c) Forest Productivity Analysis	
	d) Letter from Chip Westbrook	

FILE RECORD CONTENT SHEET

PA 05-6249

No.	Item	Date
	e) Letter from Brian Rabe	
	f) Letter from Steel B. Maloney	
	g) Supplemental Soils Report	
	h) Letter from Ralph Christensen	
27.	Submittal by Steve Cornacchia	10/31/06
	a) Letter from Steve Cornacchia	
	b) Aerial Photos, 1976, 1991, 1994, 2003	
28.	LCPC Minutes 8/1/06 Meeting	11/7/06
29.	LCPC Minutes 9/5/06 Meeting	11/7/06