Oregon Farm Brokers

Information Packet

541-497-6514

Oregonfarmbrokers.com

Oregonfarmbrokers@gmail.com

2125 Pacific Blvd. Albany 97321

1121 NW 9th Ave Corvallis 97330

kw MID-WILLAMETTE KELLERWILLIAMS. REALTY

KELLERWILLIAMS LAND

KELLERWILLIAMS Luxury INTERNATIONAL

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Douglas County Parcel Information

Parcel Information

Parcel #:	**R147216**
Tax Lot:	**25062300106**
Site Address:	1625 Fort McKay Rd
	Oakland OR 97462 - 9747
Owner:	Wilde, Dennis J & Jean B
Owner2:	
Owner Address:	13801 Knaus Rd
	Lake Oswego OR 97034
Twn/Range/Section:	25S / 06W / 23
Parcel Size:	80.00 Acres (3,484,800 SqFt)
Plat/Subdivision:	
Lot:	
Block:	
Map Page/Grid:	
Census Tract/Block:	

Assessment Information

Market Value Land:	$0.00
Market Value Impr:	$0.00
Market Value Total:	$0.00
Assessed Value:	$0.00

Tax Information

Levy Code Area:	00100
Levy Rate:	6.7968
Tax Year:	0
Annual Tax:	$0.00
Exemption Description:	

Legal

P.P. 2019-11, PARCEL 2, ACRES 80.00, IMPS OUTSIDE FIRE DIST

Land

Cnty Land Use:	502I - FARM - IMPROVED - EFU ZONE	Std Land Use:	
Zoning:		Neighborhood:	SH
Watershed:		View:	
Recreation:		School District:	
Primary School:		Middle School:	
High School:			

Improvement

Year Built:		Condition:		Fin. SqFt:	0
Bedrooms:	0	Bathrooms:	0.00	Garage:	0 SqFt
Foundation:		Attic Fin SqFt:	0	Attic Unfin SqFt:	0
Exterior Walls:		Basement Fin SqFt:	0	Basement Unfin SqFt:	0
Carport SqFt:	0	Deck SqFt:	0	Roof Covering:	
Pool:	No	Roof Type:		Heat:	

- - Property Data Summary Screen - -

```
                                             Owner: WILDE, DENNIS J & JEAN B
Prop ID    : R147216    ()                (216369) 13801 KNAUS RD
Map Tax Lot: 25-06W-23-00106                       LAKE OSWEGO, OR 97034
Legal      : P.P. 2019-11, PARCEL 2, ACRES
             80.00, IMPS OUTSIDE FIRE DIST
Acreage    : 80.00     Zoning: FG          Deferral    : 2          PrCls: 551
DBA        :                               Sale Info   :  $0
Situs      : 1625 FORT MCKAY RD            Deed Type   : PLAT PART
             OAKLAND, OR 97462             Instrument# : PP 2019-11
Code Areas : 00100 (Tax Rate: 6.7968)      Year Built  :
     2019 Tax Status                       Living Area :
Curr Tax & Assessments:       361.33            2019 Roll Values
Payments or Adjust    :         0.00    RMV Land, LSU Only    $       22,105 (+)
Discount Allowed      :        10.84    RMV Improvements      $       15,617 (+)
Unpaid Balance        :       350.49    RMV Total             $      350,585 (=)
Interest Due          :         0.00    Total Exemptions      $            0 (-)
Total Due Current Year:       350.49    Net RMV               $      350,585 (=)
Delq Tax + Int + Fees :         0.00    M50 Assd Value        $       37,722
Balance Due           :       350.49    Special Assessments: 115.35
Pot Add Tax Liab:EFU FARM               Exemption(Type)    : NONE

Enter <RET> to Exit:
```

Property: R147216

*** Appraisal Detail ***

Map & Tax Lot	Code Area	PCL	MCL	MA	Appraised: NBHD	Appraiser: Zone
25-06W-23-00106	00100	551	502I	2	SH	FG

Legal Desc: P.P. 2019-11, PARCEL 2, ACRES 80.00, IMPS OUTSIDE FIRE DIST

Owner: WILDE, DENNIS J & JEAN B
13801 KNAUS RD
LAKE OSWEGO, OR 97034

Situs: 1625 FORT MCKAY RD
OAKLAND, OR 97462
Potential Liability: Yes

Sale Info: $0 **Date:**
Deed Type: PLAT
Instrument: PP 2019-11

Exemptions:

Utilities: **Access:** **Topography:**

Building Permits:
General Appraisal Comments

*** Related Accounts ***

Owner	Map & Tax Lot	Code Area	Acres

*** 2020 Uncertified Value Summary ***

	RMV	M5 Value	LSU	MAV	Assessed Value
Land :	$0	$0			
LSU Mkt Val:	$334,968	$24,735			
Structures :	$15,414	$15,414			
Total :	$350,382	$40,149			
Exemptions :	$0	$0			
After Exmpt:	$350,382	$40,149	$22,765	$15,414	$38,179

*** Land Segments ***

Land Summary

Land#	Description	Type	Prop.Class	Size	Market	Special Use
L1	1H5	1H5	0	25.00 -AC	$30,188	$1,982
L2	1B5	1B5	0	15.00 -AC	$46,575	$3,491
L3	1B3	1B3	0	29.00 -AC	$143,405	$11,679
L4	1B2	1B2	0	10.00 -AC	$59,800	$5,211
L5	USHA	USHA	0	1 -AC	$55,000	$402
	Land Totals: Legal: 80.00-AC			80 -AC	$334,968	$22,765

*** Land Detail ***

L#	Type	PCL	PrmCl	Nbhd	Dimensions	Year	Metd	Land Table	Market Value
1	1H5	0	551	SH	25.00-AC	2020	A	1H5	$30,188

Total Trends: 100.00 % **Total Market Value:** $30,188

Adjustments: SIZE 115%

LSU Code	D	Class	Year	Mthd	Land Table	Size	Price	Adj	Trends	LSU Value

Property: R147216

*** Land Detail *** continued

2	2020	ASU	2H5	25.00-AC	79.31	%	100%	$1,982

L#	Type	PCL	PrmCl	Nbhd	Dimensions	Year	Metd	Land Table	Market Value
2	1B5	0	551	SH	15.00-AC	2020	A	1B5	$46,575

Total Trends: 100.00 % Total Market Value: $46,575

Adjustments: SIZE 115%

LSU Code	D	Class	Year	Mthd	Land Table	Size	Price	Adj	Trends	LSU Value
2			2020	ASU	2B5	15.00-AC	232.78	%	100%	$3,491

L#	Type	PCL	PrmCl	Nbhd	Dimensions	Year	Metd	Land Table	Market Value
3	1B3	0	551	SH	29.00-AC	2020	A	1B3	$143,405

Total Trends: 100.00 % Total Market Value: $143,405

Adjustments: SIZE 115%

LSU Code	D	Class	Year	Mthd	Land Table	Size	Price	Adj	Trends	LSU Value
2			2020	ASU	2B3	29.00-AC	402.73	%	100%	$11,679

L#	Type	PCL	PrmCl	Nbhd	Dimensions	Year	Metd	Land Table	Market Value
4	1B2	0	551	SH	10.00-AC	2020	A	1B2	$59,800

Total Trends: 100.00 % Total Market Value: $59,800

Adjustments: SIZE 115%

LSU Code	D	Class	Year	Mthd	Land Table	Size	Price	Adj	Trends	LSU Value
2			2020	ASU	2B2	10.00-AC	521.18	%	100%	$5,211

L#	Type	PCL	PrmCl	Nbhd	Dimensions	Year	Metd	Land Table	Market Value
5	USHA	0	551	SH	1-AC	2020	CD	USHA	$55,000

Total Trends: 100.00 % Total Market Value: $55,000

Adjustments:

LSU Code	D	Class	Year	Mthd	Land Table	Size	Price	Adj	Trends	LSU Value
2			2020	ASU	2B3	1-AC	402.73	%	100%	$402

*** Improvements ***

Improvement Summary

Imp#	Description	Type	BldgType	#Segs	Market Value
I1	RESIDENTIAL	R	01	1	$15,414

Improvement Totals: **$15,414**

*** Improvement Details ***

Improvement#: 1 **Type:** R **Description:** RESIDENTIAL
Appr Method: C **Trend %:** 100 % **Total Impr Value:** $15,414

Property: R147216

*** Improvement Details *** continued

I#1 -Seg#1 Desc: FEEDER BARN **Make:** **Model:** **X# :**
Dimensions: 60L x 60W **Eff Area for Calculations:** 2160 **Area:** 2160 **Home ID:**
Type: FB **Method:** F98 **Class:** 5

Base Cost and Adjustments to the Base		Units	Cost/Units	Total
Add Factor1	1			
Add Factor2	S			
Add Factor3	11A-5			

Bedrooms: **Base Cost:** $20,282
Year Built: **Eff Year:** 1995 **Cond:** **Depre%:** 76 **Nbh%:**
Adjustments:

Total Adjustments: **76%**
Total Segment Value: **$15,414**

*** Special Assessments ***

SA#	Code	Description	Unit Count	Unit Price	Amount
S1	5015	FI DOUGLAS FIRE PATROL	80.00	$ 0.8481	$67.85
S2	5016	FI DOUGLAS ODF SUR CHG	1	$ 47.50	$47.50
			Special Assessments Totals:		$115.35

Douglas County Official Records
Patricia K. Hitt, County Clerk
2019-007726
NO FEE
004879952019000772600020025
05/16/2019 02:03:31 PM
PLAT-PAR Cnt=1 Stn=33 HAJOHNST
This is a no fee document

2019-001IA

LAND PARTITION

LOCATED IN THE SOUTHWEST AND SOUTHEAST QUARTERS OF SECTION 14 AND THE NORTHWEST AND NORTHEAST QUARTERS OF SECTION 23, TOWNSHIP 25 SOUTH, RANGE 6 WEST, WILLAMETTE MERIDIAN, DOUGLAS COUNTY, OREGON

MARCH 21, 2019

EASEMENTS OF RECORD

THE FOLLOWING ITEMS LISTED PER A PUBLIC RECORD REPORT FOR NEW SUBDIVISION OR LAND PARTITION PREPARED BY FIRST AMERICAN TITLE COMPANY OF OREGON, ORDER NO. 7399-3021673 DATED MARCH 15, 2018 THAT ENCUMBER THE TRACT BEING PARTITIONED HEREON HAVE BEEN ADDRESSED AS FOLLOWS:

7. POWER EASEMENT PER BOOK 91, PAGE 501, RECORDER'S NO. 77330
(UNABLE TO SHOW EASEMENT – ONLY DESCRIBED AS BEING IN THE NORTH 1/2 OF SEC. 23 & A NARROW STRIP IN THE NE 1/4 OF SEC. 23)

8. TRANSMISSION LINE AND ACCESS ROAD EASEMENT PER BOOK 259, PAGE 949, RECORDER'S NO. 223950
(APPROXIMATE LOCATION OF 125' TRANSMISSION LINE EASEMENT SHOWN – UNABLE TO PLOT EXACT LOCATION OF ACCESS EASEMENTS DUE TO POOR QUALITY OF DOCUMENT)

9. POWER EASEMENT PER BOOK 330, PAGE 771, RECORDER'S NO. 333338
(EXACT LOCATION NOT DESCRIBED. 10-FOOT EASEMENT TO BE CENTERED OVER PACIFIC POWER'S POLES AND WIRES ON TRACT)

10. WELL AND PIPELINE EASEMENT PER INSTRUMENT NO. 97-17836
(APPROXIMATE LOCATION OF 10' EASEMENT SHOWN)

19. POWER EASEMENT PER INSTRUMENT NO. 2012-016785
(APPROXIMATE LOCATION OF 10' EASEMENT SHOWN)

21. ACCESS EASEMENT PER INSTRUMENT NO. 2014-010898
(APPROXIMATE CENTERLINE LOCATION OF 20' ACCESS EASEMENT SHOWN)

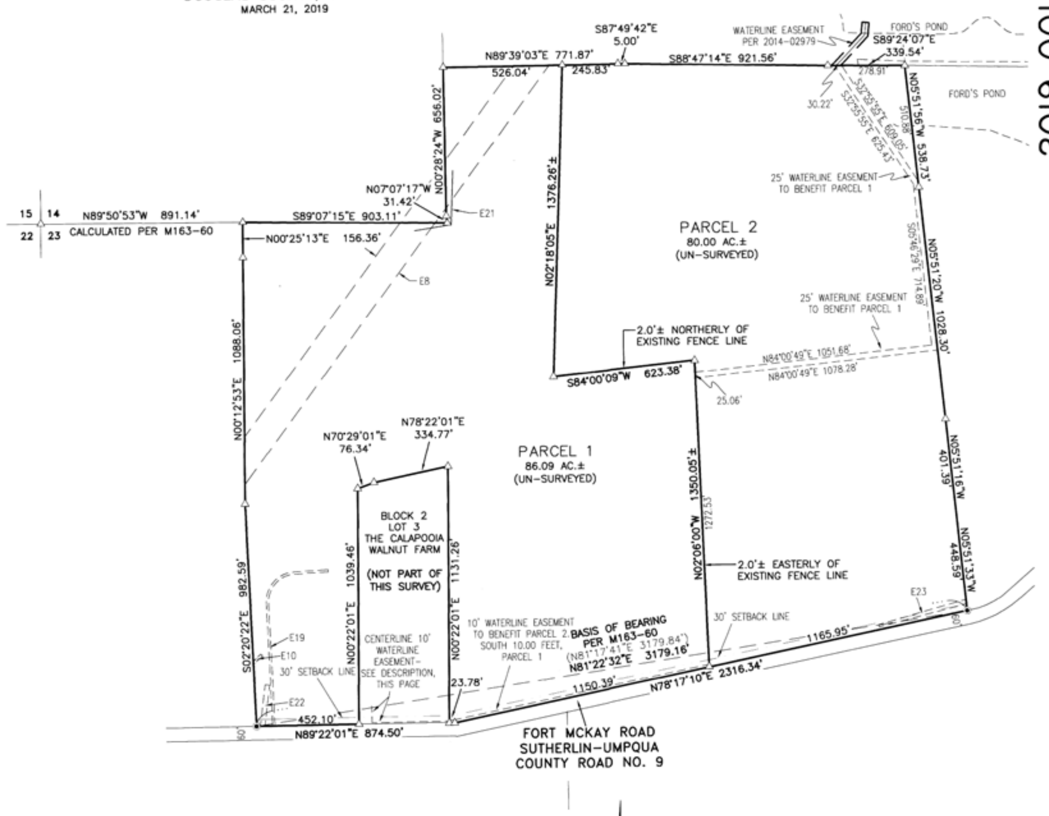
22. POWER EASEMENT PER INSTRUMENT NO. 2015-007600
(APPROXIMATE LOCATION OF 20' EASEMENT SHOWN)

23. POWER EASEMENT PER INSTRUMENT NO. 2015-007601
(APPROXIMATE LOCATION OF EASEMENT SHOWN – EASEMENT 20' ON EAST END & TAPERS TO 10' ON WEST END)

WATERLINE EASEMENT DESCRIPTION– LOT 3, BLOCK 2, CALAPOOIA WALNUT FARM

A 10.00-FOOT WIDE STRIP OF LAND BEING A PORTION OF LOT 3, BLOCK 2, CALAPOOIA WALNUT FARM, VOLUME 1B, PAGE 56, PLAT RECORDS OF DOUGLAS COUNTY, BEING A PORTION OF PARCEL 2, INSTRUMENT NUMBER 2013-02990, DEED RECORDS OF DOUGLAS COUNTY, BEING 5.00 FEET ON EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE:

BEGINNING AT A POINT ON THE EAST BOUNDARY OF SAID LOT 3 FROM WHICH THE SOUTHEAST CORNER OF SAID LOT 3 BEARS SOUTH 00°22'01" WEST, 5.00 FEET; THENCE LEAVING SAID EAST BOUNDARY, BEING 5.00 FEET NORTH OF AND PARALLEL WITH THE SOUTH BOUNDARY OF SAID LOT 3, COINCIDENT WITH THE NORTH RIGHT-OF-WAY BOUNDARY OF FORT MCKAY ROAD (DOUGLAS COUNTY ROAD NUMBER 9), SOUTH 89°22'01" WEST, 340.82 FEET; THENCE, AT RIGHT ANGLES TO SAID SOUTH BOUNDARY, NORTH 00°37'59" WEST 75.00 FEET TO THE CENTER OF AN EXISTING PUMP HOUSE AND THERE TERMINATING.



LEGEND

◉	FOUND 5/8" IRON ROD W/ALUMINUM CAP PER M124-59
△	CALCULATED POINT ONLY – NO MONUMENT FOUND OR SET
( )	RECORD INFORMATION PER M163-60
E#	EASEMENTS OF RECORD AS SHOWN

North

SCALE: 1"=300'

REGISTERED PROFESSIONAL LAND SURVEYOR
OREGON
NOVEMBER 10, 2010
BRENT H. KNAPP
81116
EXPIRES: 6/30/2019

SHEET 1 OF 2
JOB NO. 2552-01 T2

CLIENT:
DENNIS WILDE
PO BOX 29
UMPQUA, OR 97486

i.e. ENGINEERING
809 SE Pine Street
Roseburg, Oregon 97470
PHONE (541) 673-0166
FAX (541) 440-9392
iemail@ieengineering.com

PLANNING DEPARTMENT FILE NO. 16-023

2019-001IA

LAND PARTITION

LOCATED IN THE SOUTHWEST AND SOUTHEAST QUARTERS OF SECTION 14 AND THE NORTHWEST AND NORTHEAST QUARTERS OF SECTION 23, TOWNSHIP 25 SOUTH, RANGE 6 WEST, WILLAMETTE MERIDIAN, DOUGLAS COUNTY, OREGON

MARCH 21, 2019

NARRATIVE

THE PURPOSE OF THIS MAP IS TO PARTITION THE TRACT SHOWN ON THIS PLAT INTO 2 PARCELS. MONUMENTS OF RECORD PER M124–59 WERE TIED AND HELD AS A BASIS OF BEARING PER M163–30. FENCE LINES WERE THEN TIED TO DELINATE A PORTION OF THE BOUNDARY BETWEEN PARCEL 1 AND PARCEL 2. THIS SURVEY WAS PERFORMED BY RICHARD OLSON AND DAWSON JINKINS USING TOPCON GPS EQUIPMENT AND A TDS RANGER DATA COLLECTOR. OFFICE CALCULATIONS AND DRAFTING WERE PERFORMED BY DEREK FEIGEL.

SURVEYOR'S CERTIFICATE

I, BRENT H. KNAPP, OREGON PROFESSIONAL LAND SURVEYOR NO. 81116, HEREBY CERTIFY THAT I HAVE CORRECTLY SURVEYED ONLY A PORTION OF THE LAND SHOWN ON THE ANNEXED PLAT, OF WHICH THE FOLLOWING IS A TRUE AND CORRECT DESCRIPTION.

ALL OF THAT TRACT DESCRIBED IN INSTRUMENT NUMBER 2013–2990, DEED RECORDS OF DOUGLAS COUNTY, OREGON.

EXCEPTING THEREFROM:

LOT 3, BLOCK 2, THE CALAPOOIA WALNUT FARM, AS RECORDED IN VOLUME 1B, PAGE 56, OFFICIAL PLAT RECORDS OF DOUGLAS COUNTY.

APPROVALS:

5/6/19
DOUGLAS COUNTY PLANNING DIRECTOR — DATE

Kristian D. Rexford — 5/6/2019
DOUGLAS COUNTY SURVEYOR — DATE

I HEREBY CERTIFY THAT ALL TAXES AND SPECIAL ASSESSMENTS OR OTHER CHARGES REQUIRED BY LAW HAVE BEEN PAID.

michele nelson, chief deputy — 5/6/19
DOUGLAS COUNTY TAX COLLECTOR — DATE

FILED THIS 16th DAY OF MAY, 2019, 2:03 O'CLOCK AM (PM)

Patricia K. Hitt — 5/16/19
DOUGLAS COUNTY CLERK — DATE

STATE OF OREGON ★ COUNTY CLERK ★ DOUGLAS COUNTY

PLANNING DEPARTMENT FILE NO. 16–023

DECLARATION–LOT 3, BLOCK 2, CALAPOOIA WALNUT FARM

KNOW ALL PEOPLE BY THESE PRESENTS THAT DENNIS J. & JEAN B. WILDE ARE THE OWNERS OF LOT 3, BLOCK 2, CALAPOOIA WALNUT FARM, VOLUME 1B, PAGE 56, PLAT RECORDS OF DOUGLAS COUNTY, DESCRIBED AS A PORTION OF PARCEL 2, INSTRUMENT NUMBER 2013–02990, DEED RECORDS OF DOUGLAS COUNTY, SHOWN HEREON AS BEING EXCLUDED FROM THE DESCRIBED PARTITION AREA, AND HAVE CAUSED THE CREATION OF THE WATERLINE EASEMENT SHOWN AND DESCRIBED OVER SAID LOT 3 IN ORDER TO BENEFIT PARCELS 1 AND 2 OF THE LAND PARTITION SHOWN HEREON.

3-21-19
DENNIS J. WILDE — DATE

Jean B. Wilde — 3-21-19
JEAN B. WILDE — DATE

ACKNOWLEDGMENT

STATE OF OREGON }
COUNTY OF } ss.

KNOW ALL PEOPLE BY THESE PRESENTS, ON THIS 21 DAY OF March, 2019, BEFORE ME A NOTARY PUBLIC IN AND FOR SAID STATE AND COUNTY, PERSONALLY APPEARED DENNIS J. WILDE AND JEAN B. WILDE, WHO DID SAY THAT THEY ARE THE IDENTICAL PERSONS NAMED IN THE FOREGOING INSTRUMENT AND THAT THEY EXECUTED SAID INSTRUMENT FREELY AND VOLUNTARILY.

Elaine Berg
ELAINE ESTHER BERG, NOTARY PUBLIC – OREGON

COMMISSION NO.: 972256

MY COMMISSION EXPIRES: MARCH 12, 2022

DECLARATION

KNOW ALL PEOPLE BY THESE PRESENTS THAT DENNIS J. & JEAN B. WILDE ARE THE OWNERS OF THE LAND REPRESENTED HEREON AND MORE PARTICULARLY DESCRIBED HEREIN AND HAVE CAUSED THIS PARTITION PLAT TO BE PREPARED AND THE PROPERTY PARTITIONED TOGETHER WITH THE EASEMENTS CREATED AS SHOWN IN ACCORDANCE WITH THE PROVISIONS OF CHAPTER 92 OF THE OREGON REVISED STATUTES.

3-21-19
DENNIS J. WILDE — DATE

Jean B. Wilde — 3-21-19
JEAN B. WILDE — DATE

ACKNOWLEDGMENT

STATE OF OREGON }
COUNTY OF DOUGLAS } ss.

KNOW ALL PEOPLE BY THESE PRESENTS, ON THIS 21 DAY OF March, 2019, BEFORE ME A NOTARY PUBLIC IN AND FOR SAID STATE AND COUNTY, PERSONALLY APPEARED DENNIS J. WILDE AND JEAN B. WILDE, WHO DID SAY THAT THEY ARE THE IDENTICAL PERSONS NAMED IN THE FOREGOING INSTRUMENT AND THAT THEY EXECUTED SAID INSTRUMENT FREELY AND VOLUNTARILY.

Elaine Berg
ELAINE ESTHER BERG, NOTARY PUBLIC – OREGON

COMMISSION NO.: 972256

MY COMMISSION EXPIRES: MARCH 12, 2022

REGISTERED PROFESSIONAL LAND SURVEYOR
OREGON
NOVEMBER 10, 2010
BRENT H. KNAPP
81116
EXPIRES: 6/30/2019

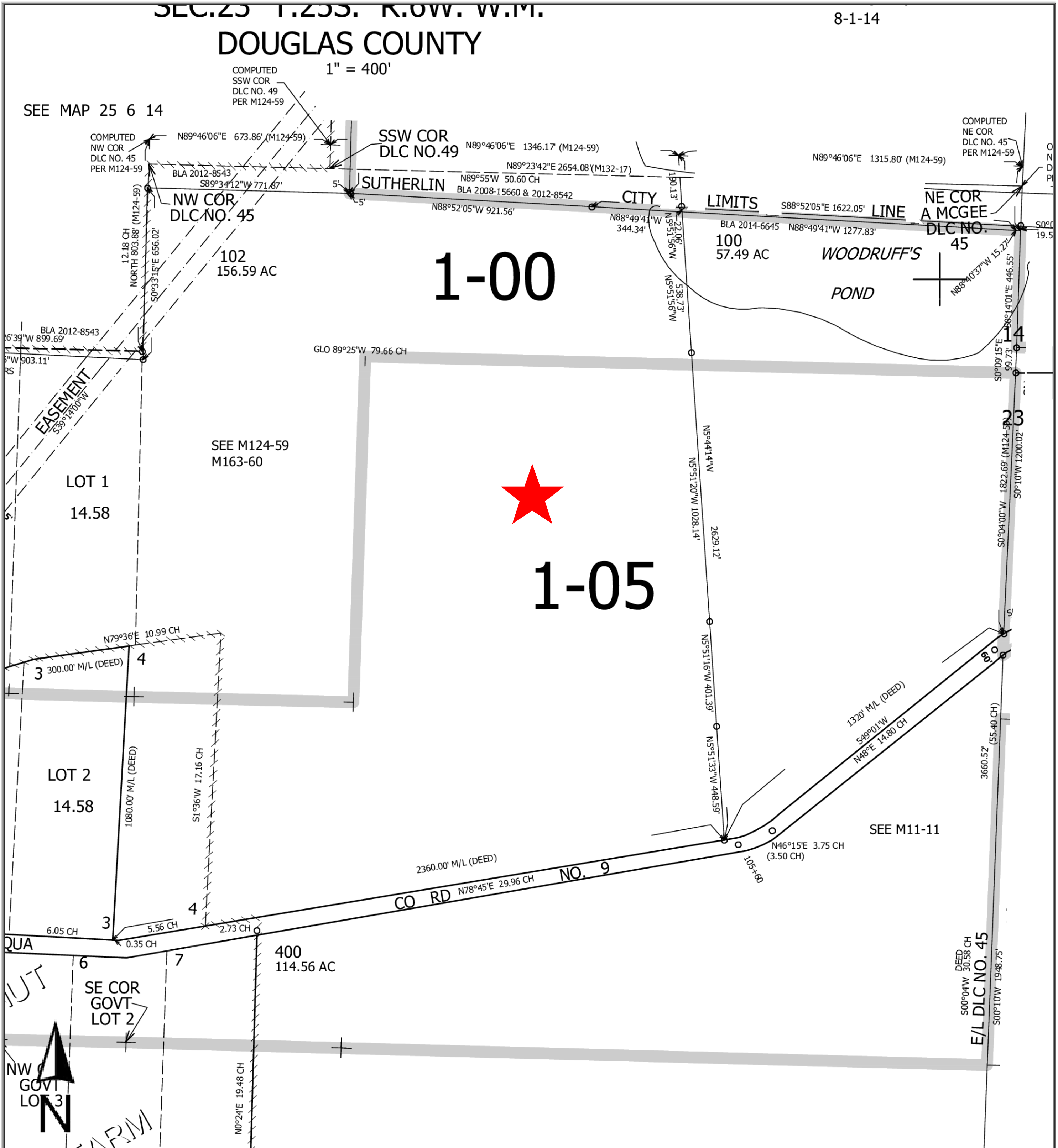
i.e. ENGINEERING

SHEET 2 OF 2
JOB NO. 2552-01 T2

CLIENT:
DENNIS WILDE
PO BOX 29
UMPQUA, OR 97486

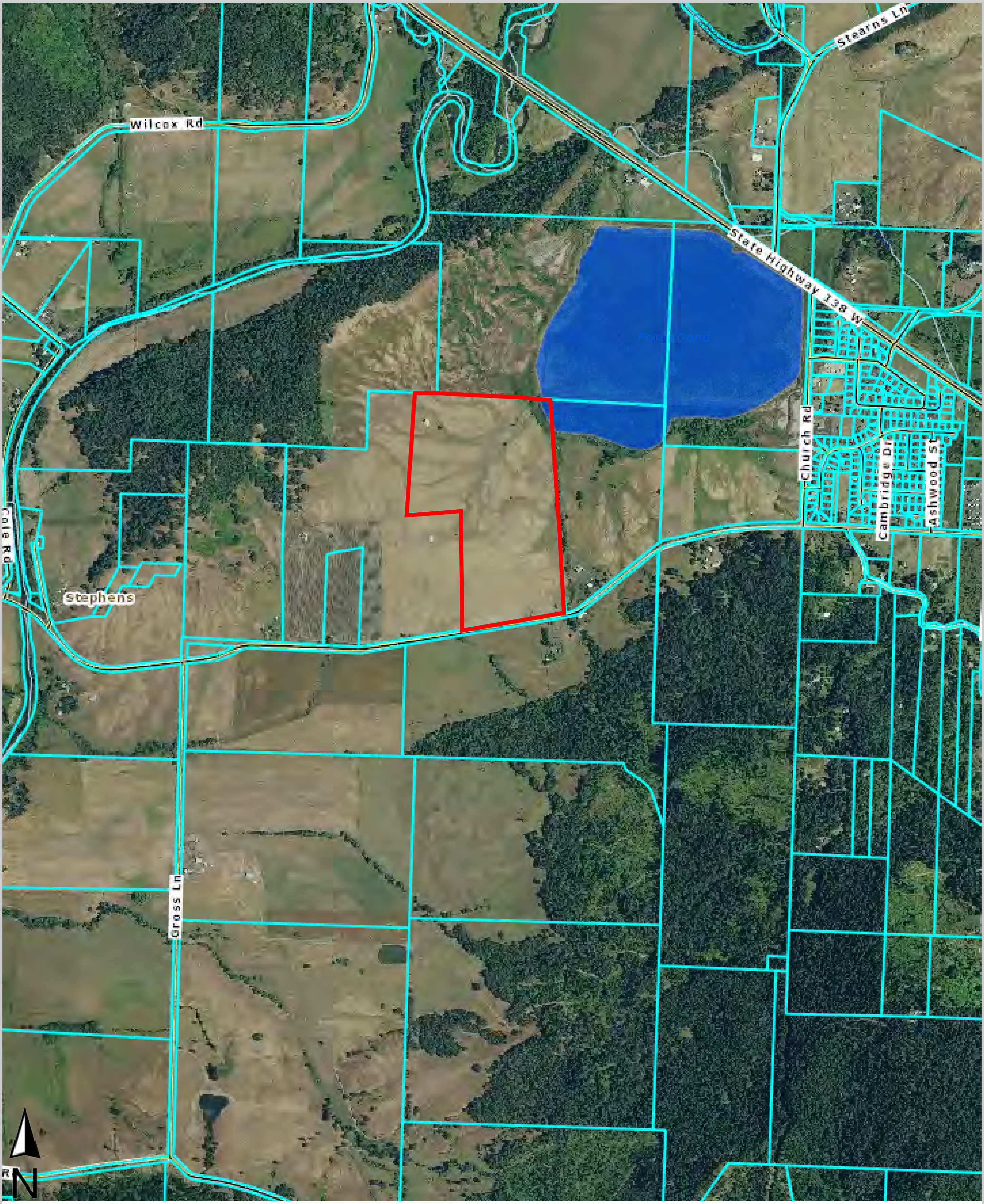
809 SE Pine Street
Roseburg, Oregon 97470
PHONE (541) 673-0166
FAX (541) 440-9392
iemail@ieengineering.com

2019-0011B



ParcelID: R147216
1625 Fort McKay Rd
Oakland, OR 97462

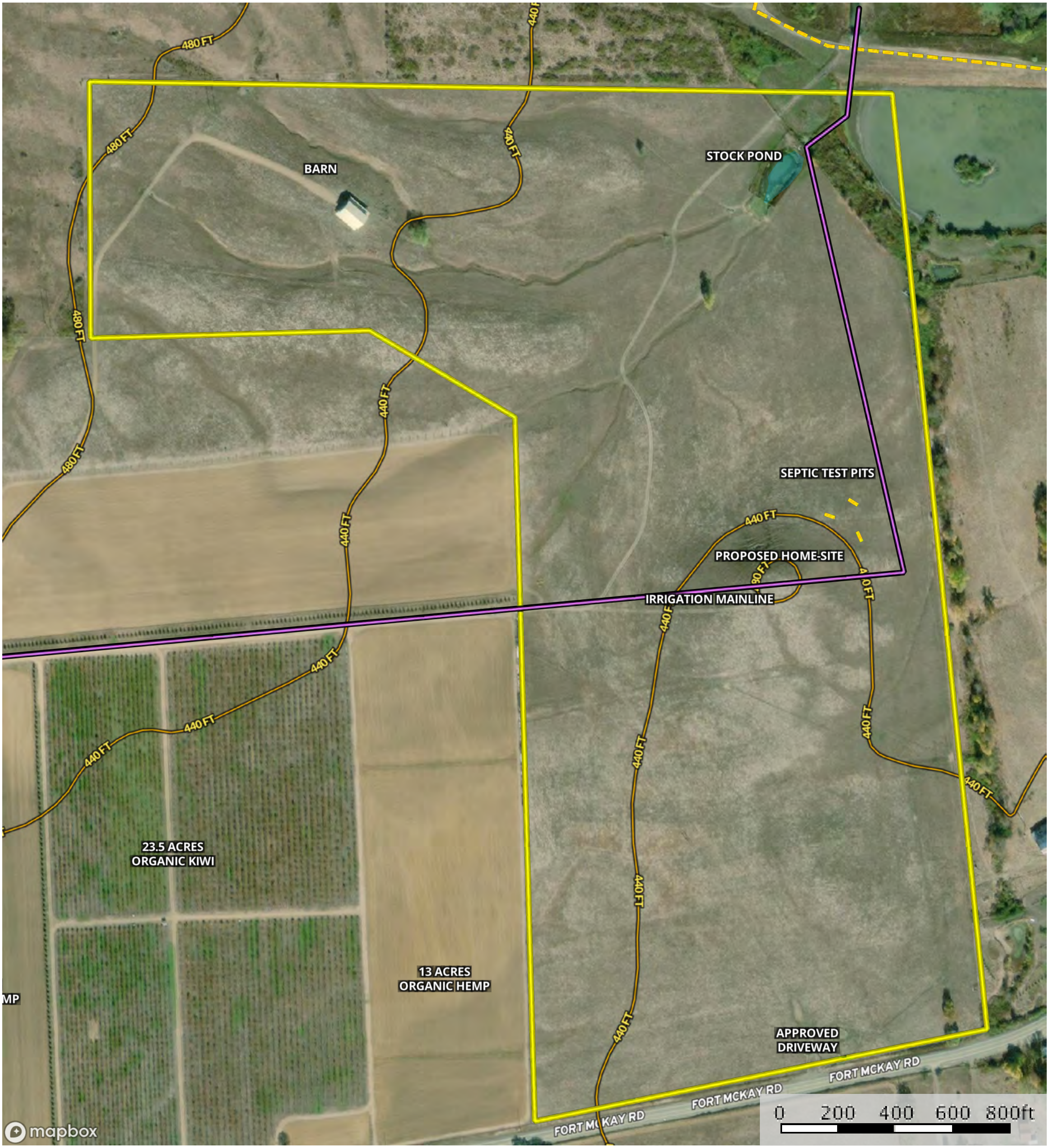
This map/plat is being furnished as an aid in locating the herein described land in relation to adjoining streets, natural boundaries and other land, and is not a survey of the land depicted. Except to the extent a policy of title insurance is expressly modified by endorsement, if any, the company does not insure dimensions, distances, location of easements, acreage or other matters shown thereon.



Western Title & Escrow

This map/plat is being furnished as an aid in locating the herein described land in relation to adjoining streets, natural boundaries and other land, and is not a survey of the land depicted. Except to the extent a policy of title insurance is expressly modified by endorsement, if any, the company does not insure dimensions, distances, location of easements, acreage or other matters shown thereon.

1625 Fort McKay Rd Oakland (Link Share) 80 Acres
Oregon, AC +/-



Pipeline
Road / Trail
Boundary
Pond / Tank

Paul Terjeson Steve Helms
P: 541-999-6777 OregonFarmBrokers.com 2125 Pacific Blvd. Albany, OR 97321

Oregon Farm Brokers

Soil Report

541-497-6514

Oregonfarmbrokers.com

Oregonfarmbrokers@gmail.com

2125 Pacific Blvd. Albany 97321

1121 NW 9th Ave Corvallis 97330

Fort McKay Road Property
Soils Tests and Assessment
Prepared for:
Dennis Wilde
Magy Corporation
0836 SW Curry St. #902
Portland, OR 97239

Summary:
I visited the above mentioned site on April 30, 2012, at the request of Dennis Wilde, for the specific tasks of supervising the digging of soil pits and taking soil samples on the property, in order to add another piece of information to the evaluation of the site for the production of olives and wine grapes. I contacted and engaged the services of Chuck Mignola, a local equipment operator, to excavate the pits. Over the course of several hours, with a map in hand that Dennis produced, we excavated 11 pits, numbers and locations of which are marked on the attached map. I sampled 4 of the pits at a depth of 24", the depth that Dennis told me was the effective rooting depth of olive trees. The majority of the root system in irrigated wine grapes is in the 18-24" range, so an assessment for one will most likely suffice for the other. I sent the samples to A & L Western Agricultural Laboratories in Modesto California.

Observations:
The 11 pits were remarkably similar in makeup, the largest difference being the depth to a layer of fractured shale. Generally, each pit had a layer of loam to a depth of 1-3 feet, a layer of clay transitioning to the shale at anywhere from 24-60". Pits 1-4 had the deepest (4 feet) loam and clay layers to shale, getting progressively deeper from north to south, while pits 5, 8, 9 and 10 had the shallowest layers of loam and clay to shale. Pit 11 had a narrow band of loam before the transition to clay. Even though the operator was using a smooth bucket without rippers, he was still able to begin to fracture the shale as he encountered it. With rippers, I'm sure that he could have fractured it more thoroughly.

I decided to sample pits which showed distinctive differences from others, either in depth to rock or in composition. I sampled pits 3, 6, 9 and 10. Included is the soil evaluation from A & L, including their recommendations for amendments. I have a few suggestions for implementation of their recommendations, but feel that based on the analysis, they are valid suggestions.

The main amendments that should be addressed during preparation and prior to planting are calcium, phosphorus and potassium levels. The suggestions for nitrogen, zinc, sulfur and boron can be easily implemented after planting and maintained during growing season.

I consulted a soil scientist to discuss the soil amendments. His suggestions were to adjust the calcium levels with a combination of calcium lime and gypsum. The pH on pits 3 and 10 are quite low and the calcium lime will help to raise these levels closer to a pH of 6 or higher, a more optimal level for wine grapes and I assume olives. The gypsum will improve the soil tilth and allow for better water and nutrient penetration through the clay layer, as will an elevated pH. A & L's recommendations are for fairly high amounts of lime, 4-5 tons/acre. It would be advisable to add the lime and gypsum in a couple of applications, instead of all at one time and then retest prior to planting. A similar strategy would be advisable with the P and K, with the possibility of chiseling in the final application prior to planting in the actual planting rows instead of spreading it out over the entire acreage, to achieve cost savings. The price of potassium and phosphorus has skyrocketed in the last few years along with cost for other commodities.

After planting, petiole analysis and occasional soil testing should be performed to ensure proper nutrient levels, adjustments possible through fertigation and broadcast application while the plants are growing.

Prepared by

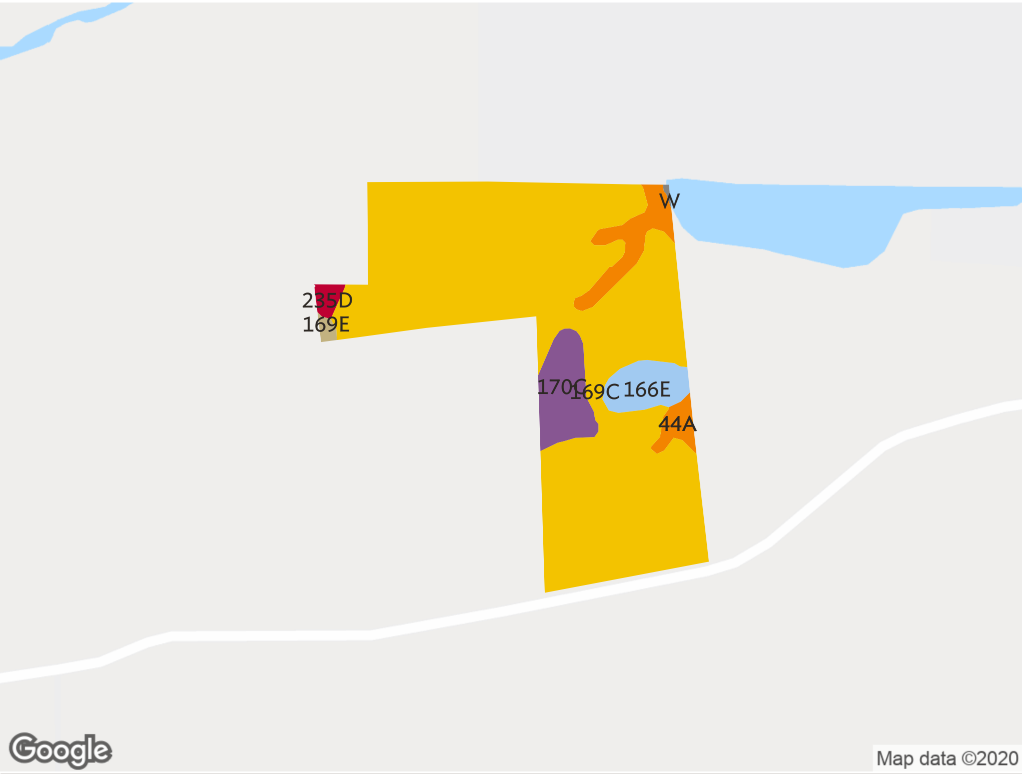
Randy Gold
Pacific Crest Vineyard Service, LLC
5/18/12

Oregon Farm BROKERS

Fields | Soil Survey January 14, 2020

1 field, 81 acres in Douglas County, OR

TOWNSHIP/SECTION 25S 6W – 14, 23



AVG NCCPI

49.5

COUNTY AVG

54.4

QUALITY 17 82

Source: NRCS Soil Survey

All fields

81 ac

	SOIL CODE	SOIL DESCRIPTION	ACRES	PERCENTAGE OF FIELD	SOIL CLASS	NCCPI
■	169C	Nonpareil-Oakland complex, 3 to 12 percent slopes	67.12	82.9%	6	48.4
■	170C	Oakland silt loam, 3 to 12 percent slopes	4.73	5.8%	3	66.7
■	44A	Conser silty clay loam, 0 to 3 percent slopes	4.69	5.8%	3	60.9
■	166E	Nonpareil loam, 12 to 30 percent slopes	3.35	4.1%	6	29.9
■	235D	Sutherlin silt loam, 12 to 20 percent slopes	0.69	0.9%	3	61.2
■	169E	Nonpareil-Oakland complex, 12 to 30 percent slopes	0.35	0.4%	6	39.9
■	W	Water	0.07	0.1%		N/A
			80.94	**99.9%**		**49.5**

Cascade Environmental Geographics

Gregory V. Jones, Ph.D.
641 Faith Avenue
Ashland, OR 97520
Tel: 541-552-9192
Email:ceg@ashlandhome.net

Friday, October 10, 2008

Site Assessment

Gary Sowder
Development Manager
Oregon PacificWest Development

Property Location: Fort McKay Road, Sutherlin (Tax lots/Property IDs: 25062300102 / R26364 &R26368; 25062300200 / R46916)

Summary:
Overall, this site is extremely viable for winegrape production and should produce high quality fruit and wine. The relatively openness of the landscape, good air drainage, good soil structure and drainage that can be enhanced where needed, available water for irrigation, and the mesoclimate structure of the area should produce the conditions needed to optimally ripen many cool to intermediate to warm climate varieties. In addition, the location near Interstate 5, Sutherlin, and along a main east-west secondary road with visible exposure offers outstanding potential for a commercial winery operation.

While the overall suitability of the site is clear, choosing varieties to plant presents a decision by which a balance of proper varietal-site matching, market-driven needs, and personal interest should be made. Given the site exposure and climate structure, this site provides many cool to intermediate to warm climate ripening varieties to choose from. From this assessment, but dependent on whether the site plan is to sell fruit or make wine, a Rhône, Bordeaux, or Spanish program of wine production is possible. For red varieties, the site appears to best suited to Malbec, Merlot, Syrah, and Tempranillo while for white varieties, Chardonnay, Pinot Gris, Sauvignon Blanc, and Viognier are well suited to the site. However, many other varieties offer potential and need to be balanced with the intent of the operation and the prevailing market.

As this property further develops into a vineyard site a suggested plan of continued assessment and preparation of the property should include the following; 1) decisions on how much of the estimated are to be planted; 2) further site assessment for block structure, row orientation, and avenues and turn around zones, etc, 3) soil sampling and ground prep including ripping/tillage, enhancing the natural drainage zones, and soil amendments as specified from the sampling reports, 4) development of the irrigation infrastructure (this is the one aspect that I do not fully know the potential of completely and is critical to developing a sound plan), 5), installation of an exterior fence to limit deer predation, and 6) a business plan for marketing the fruit and/or wine.

Enclosed Maps:

The maps included with this assessment make use of the available spatial GIS data to provide a general overview of the site in question. Map 1 uses a 2005 aerial photograph to depict the property area in consideration and the estimated plantable vineyard, while Maps 2 A/B contain a topographic view of the landscape indicting the site's elevation/contours, and Maps 3 A/B display the property soil types. Included in the frames of both maps are estimated blocks[1] (based on a single site visit, landscape variations visual on the aerial image, and tax lot structure) that are considered to have the best potential for planting winegrapes.

General characteristics of the property and plantable area (Maps 1 & 2):

- Acreage – for all tax lots associated with the property – 185.5 acres (from county records, Map A), with an estimated plantable area of approximately 145-155 acres depending on further site assessment for the final block delineation
- Elevation – estimated plantable area average of 448 ft and range of 410-642 ft (Map B)
- Slope – estimated plantable area of flat to over 80% (isolated areas), with an average of 7.3% and moderate variation within the estimated blocks (Map B)
- Aspect –the estimated plantable area has a range of slope exposures from ESE, SSE, WSW, to NNW with some flat and undulating zones (Map B)

Topography:

The site provides an open landscape that undulates across its E-W and N-S extent with a predominant drainage toward the retention pond to the northeast (Maps 2 A,B). The site has an average elevation of ~450 ft with the highest areas in the NW section of the property that approaches 660 ft and a secondary maximum of ~480 ft found on the isolated hill on the eastern boundary of the property. The majority of the landscape has gradual slopes from flat to ~10% with the steepest slopes being found in the NW section of the property (Maps 2 A,B). The slope exposures (aspects) reflect the undulating nature of the

[1] Note that the plantable areas depicted in the maps are estimated from a single site visit, aerial imagery, tax lot structure and other landscape criteria. These blocks are not meant to depict the final planting areas and are only used as a convenient way to depict the landscape. Block A represents a more realistic division, while the division between Block B and C is artificial and could have easily been combined.

property with no predominant direction ranging from flat to ESE and NNW. The estimated plantable areas depicted in each of the maps are generally representative of the entire property.

Block A is ~25 acres with undulating exposures from flat to ESE, gradual slopes, and was mapped based upon the evident drainage that runs between it and Block B toward the retention pond. The estimated area was also stopped short of the pond due to the flattening of the landscape (frost potential) and soil issues (high water table and poor drainage, see the soils discussion below)

Block B represents a broad area covering the width of the property and is ~48 acres. This area encompasses the steepest slopes of the property in the NW section (>60% in some locations) that may preclude planting. However, the NW section's aspects of WSW to ESE would provide for very good planting exposures. The rest of Block B is gradually undulating with flat to low slopes and a more predominant NNW exposure toward the eastern side of the property. Note the secondary elevation maximum on the isolated topographic feature would likely limit planting to some degree.

Block C covers the entire width of the property and encompasses ~77 acres. The slopes across this block are more uniform and present the most consistent plantable area. The gradual slopes vary from SSE exposures on the western side of the property through flat in the center and WNW on the eastern side of the property.

The most important topographical considerations for the estimated planting areas include the surface and sub-surface water drainage and air drainage. The water drainage issue is evident where the landscape had developed over time to move water toward the retention pond in the NE (see all maps, but especially Maps 3 A,B). These zones likely have high water tables, ponding of water in many rain events, and heavier soils (see soils discussion below). The issue can easily be managed with proper block area development and drainage enhancement (installing tiles). The air flow from the surrounding hills downslope and off the properties is important and appears to not be hindered to any degree. The only issue might be the lower elevations of the NE sector where there might be some pooling of cool air, however the moderating properties of the pond might be enough to counteract the pooling.

Overall, the estimated blocks have slopes that will provide average to enhanced solar receipt (see the footnote in Table 1) and likely produce slightly advanced early spring growth with moderate to high heating during the summer (Table 2). In addition, the relative openness of the landscape in all of the plantable areas to a full solar path in the sky (especially the south-southeast), should provide for moderately rapid evaporative potential during the morning hours.

Geology and Soils:
The underlying geology of the greater Umpqua Valley is mixed, occurring from the joining of three mountain ranges, the Klamath Mountains, the Coastal Range, and the Cascades. The Klamath Mountains extend into the southwestern portion of the Umpqua Valley AVA as a thrust fault that consists of intricate folded and faulted igneous and metamorphic rocks that are the oldest in the region. The Cascade Mountains to the east are divided into the younger High Cascades and the older, more deeply eroded Western Cascades that make up the eastern boundary of the region. The valleys are protected from the ocean largely by the Coastal Mountains, which are composed of mostly oceanic sedimentary rocks and volcanic islands that were accreted to the landscape over the last 50 million years. From the Western Cascades to the Coast Mountains, the geologic features in the Umpqua Valley record a history of continental margin sedimentation, magmatism, and accretion of oceanic terrains that occurred during the Jurassic to late Eocene.

The property in question lies over geologic parent material that mostly consists of conglomerate, sandstone, siltstone, and limestone from the Eocene and Paleocene along with alluvial deposits from the Holocene. The alluvial deposits make up the bulk of the underlying geology of the property and consist of sands, gravels, and silt forming from an older and larger stream system that used to drain toward the Umpqua River to the west. The sedimentary geology, which makes up the majority of the surrounding landscape, was derived from mixed marine and continental based sedimentary bedrock that either formed in place (continental) or was accreted to the coastal range (marine) over long periods of time. The most common geology of this formation are the marine sandstone, siltstone, and mudstone along with minor amounts of conglomerate, which were largely deep-sea fan deposits on submarine basalts of the Siletz River volcanics. Erosional processes over time have combined material from these marine sediments with that of the alluvial deposits to produce the silty/clayey soil structure of the property (see below).

While soil characteristics vary across any portion of the landscape, a published soil survey of the region (National Resource Conservation Service, August 1997) provides general characteristics of the site (see Map 3 A/B). The soil survey indicates that thirteen soil series/types/complexes make up the property and estimated plantable areas, including (as numbered on Map 3 A/B):

1) Bateman Silt Loam
2) Coburg Silty Clay Loam
3) Conser Silty Clay Loam

4) Dickerson Loam
5) Malabon Silty Clay Loam
6) Nonpareil Loam
7) Oakland-Nonpareil Complex
8) Oakland-Nonpareil-Sutherlin Complex
9) Oakland Silt Loam
10) Rosehaven Loam
11) Sutherlin Silt Loam
12) Veneta Loam
13) Waldo Silty Clay Loam

These thirteen geographically associated soils are found mostly in Southern Oregon and Northern California in the intermountain valleys (i.e., mostly the Umpqua and southern Willamette Valley) along the Western Cascades and variations in each these soil types are found at a many of the planted vineyards in the Umpqua and Rogue Valley AVAs (Jones and Light, 2001; Jones, 2003). For the property in question, it is largely composed of soils from the Oakland, Nonpareil, and Sutherlin series along with Conser and Dickerson soils (Maps 3 A/B).

From the NRCS soils data and information, the Oakland series and the associated Nonpareil and Sutherlin soils (7,8,9) are the most common on the property. The Oakland series consists of moderately deep, well drained soils that formed in colluvium and residuum weathered from sedimentary rocks (sandstone, siltstone and shale). Oakland soils are on hillsides and broadly convex footslopes and ridges and are found on slopes of 3 to 60 percent. Oakland soils tend to exhibit medium to rapid runoff; moderately slow permeability, and are moderately to strongly acid (5.4-5.8). Depth to soft bedrock is commonly 20 to 40 inches with silty clay loam, silty clay or clay interspersed with some coarse fragments and soft weathered gravel and cobbles. Oakland soils are of moderate extent and found throughout southwestern Oregon. For the property in question the Oakland soils are shown to occur across the majority of the property (Maps 3 A,B) from the SE corner across the middle of the property to the western and northern border.

The Nonpareil series (6,7,8) consists of moderately shallow, well-drained soils that formed in colluvium and residuum weathered from sandstone and siltstone. Nonpareil soils are typically found on ridgetops, hillslopes and convex footslopes. The soils are a mixed loam, often with low pH (4.8-5.2), and exhibit moderate permeability. The typically shallow depths to bedrock (20-30 inches) leave soft gravel to soft cobble sized fragments in the soil column which are very weathered and crushable. Nonpareil soils are not extensive, being found only in the Douglas County region. Associated with the Oakland soils, the Nonpareil soils are extensive over the center portion of the property (Maps 3 A,B).

The Sutherlin series (8,11) consists of very deep, moderately well drained soils that formed in mixed alluvium and colluvium over residuum weathered from sandstone and siltstone. Sutherlin soils are on foot slopes, hill slopes and drainage ways found throughout the interior valleys of southern and west-central Oregon and northern California. These soils can be strongly to moderately acidic (pH 5.3-5.9), contain a mix of silt and clay with some cobbles and pebbles, that provide moderate drainage but typically very slow permeability, with depths of 60 inches or more to bedrock. While the Sutherlin soils are associated with the Oakland and Nonpareil soils, for this property the NRCS maps them as being confined to a portion of the steeper hillside in the NW section of the property (Maps A,B).

The Conser series (3) consists of very deep (often > 60 inches), poorly drained soils that formed in silty and clayey alluvium derived from igneous and sedimentary materials. Conser soils are mostly found in depressions on low alluvial stream terraces with gradual slopes from flat to 3 percent. These soils are commonly slightly acid (pH 6.2-6.4) but can be neutral with depth (pH 6.8-7.0). Being found in depressions, Conser soils are usually moist and are saturated with water during the winter season. As a result the soils have slow permeability, slow runoff, can pond easily, and flood at high intensity rain events due to a high water table that is at its uppermost limit from December to April. The soils are silty clay loam, silty clay or clay and have moderate to strong granular or subangular blocky structure. Conser soils are of moderate extent being found in many locations in the Willamette and Umpqua Valleys. Conser soils are the second most extensive over the property being mapped by the NRCS as occurring over a large area of the SW corner and throughout the drainage zones of the NE section of the property (Maps 3 A,B).

The Dickerson series (4) consist of very shallow, well drained soils that formed in material weathered from medium and coarse grained sandstone, conglomerate sandstone and metavolcanic rocks. The soils are commonly found on rounded ridgetops, foothills and mountains over a wide range of slopes. Dickerson loam soils are typically moderately or strongly acid (pH 5.4-5.6); with roughly 25% clay within the main horizon that produces medium permeability. These soils are used primarily for grazing and improved pasture, and are of moderate extent throughout the interior valleys of southern and west-central Oregon. Dickerson soils occur in a small section of the NW corner of the property over the steeper slopes where the soils are likely thinner (Maps 3 A,B).

The majority of the soils found throughout the estimated blocks are generally considered fine for agriculture in general and do not pose any overall limiting characteristics. However, areas of concern are the drainage zones flowing toward the NE section of the property and the body of water just outside the boundary. These drainage areas are clear on the aerial imagery ((Maps 1, 2B, 3B, taken in the early summer) and are mostly mapped as Conser soils. The soils in these areas likely have high clay content, are poorly drained, easily ponded and can hold water, either at the surface or with depth, over the winter and even into the growing season. It would be important to assess these zones, either putting in sufficient drainage tiles or planting around those that simply can not be tiled.

Furthermore, while there is some grape growing experience with each of these soil types in the region, to properly assess the soils on the property it would be important to do site-specific soil sampling. Soil samples can provide more precise site characteristics regarding pH, salinity, cation exchange capacity, organic matter content, and nutrient structure. While there is no set recommendation as to how many acres one sample should represent, the samples should represent an area of similar soil with similar growing conditions. Given the broad similarities across these estimated blocks, sampling could be done at a more coarse spatial arrangement.

Regional and Site Climate Assessment:
This climate assessment includes two components: 1) a regional overview of climate from the closest station observed by the National Weather Service and the National Climatic Data Center (Roseburg); and 2) results from a modeling approach to spatial differences in climate using PRISM (a climate model that has been extensively used for studying climate-varietal maturity potential for grapevines) from The Climate Source. Below is a list of the PRISM modeled climate data for a one-kilometer grid cell covering the potential site, which indicates the following:

Climate Parameter	Sutherlin Property
Annual Precipitation	37-39 inches
Average Maximum Temperature – July	83-85°F
Average Minimum Temperature – January	34-36°F
Growing Season Average Temperature	62-64°F
Growing Degree-days (base 50°F, Apr-Oct)	2400-2600
Last Frost in the Spring (median, 32°F)	April 16-19
First Frost in the Fall (median, 32°F)	November 2-5
Frost-Free Growing Season Length	197-203 days
The Number of Wet Days in Sep-Oct	12-14 days

Modeled climate characteristics for the Nichols Brothers property (derived from PRISM), 1971-2000 climate normals).

In comparison to the data summarized for the general climate of the Umpqua Valley AVA stations in Table 3 and 4, the information above reveals that the potential site is near the average to slightly warmer for most parameters. Since Sutherlin unfortunately does not have a first order climate station, the best comparison for the site is with the Roseburg long-term (1971-2000) climate normals (Table 5), although the site's elevation and location will make it slightly cooler and result in lower heat accumulation than found in Roseburg.

The site's estimated heat accumulation of 2400-2600 degree-days is near the average for the Umpqua Valley AVA. From a growing season length perspective, the site has a relatively long frost-free period of 197-203 days, which should provide an optimum season length to ripen fruit in the vast majority of years. Frost timing for the site shows a median last spring frost that is estimated to be April 16-19 and an estimated median first fall frost of November 2-5, which is similar to outer lying areas in the Umpqua Valley. An instrumented vineyard (five years of data) just northeast of this site shows that the numbers derived from the PRISM data are accurate with an average of 2512 degree-days, along with a last spring frost of April 17 and a first fall frost of October 28. In addition, the site has an open landscape and good air drainage characteristics that should provide for early morning heating that would further minimize frost potential. In terms of rainfall, the site is near the valley-wide average, however, more importantly the site only experiences 15-20% of its rainfall during the growing season (April-October) with an estimated average 12-14 days of rain during ripening (mostly in late October).

From this general assessment the site in question has mesoclimate characteristics that make it conducive to winegrape production. Heat accumulation is sufficient to ripen many cool to intermediate to warm climate varieties (see below). The climate parameter of most concern would be spring frost potential as the average bud break in the Umpqua Valley is near the median last date of spring frost (~April 5-15 depending on variety). However, maintaining and enhancing the site's air drainage will minimize most low level frost events.

Potential Vineyard Layout and Block Characteristics:
Vineyard layout issues are typically related to optimizing block areas, row orientation, row length, water delivery, and machinery operating areas. The estimated block areas depicted in Maps 1-3 are generalized based on a single site visit, landscape variations visual on the aerial image, and general slope orientations. For most vineyards, north-south row orientation is most advantageous as it allows for maximum solar receipt. Row orientation, however, should be balanced with row length because longer rows are more efficient from a farming perspective. Given the undulating nature of the property along with some the surface and sub-surface drainage issues, block areas would need to the optimized to the slope, aspect, and drainage characteristics. Given the previous use of the property, development for vineyards would be much easier with little to no tree removal (depending on how high planting would occur in the NW section of the property) but would require some surface and sub-surface water drainage enhancement.

Irrigation Needs:
In terms of irrigation, how much water is required to grow quality winegrapes depends upon site, the age of the vines, the stage of vine growth, row spacing, size of the vine's canopy, and amount of rainfall occurring during the growing season. The amount of water and frequency of application necessary to meet the needs of grapevines grown in different soil types vary considerably. Available soil moisture must always be present in the root zone during the growing season, especially when the most rapid growth of the berries occurs. Young vines must be watered more frequently than older vines, particularly during the first three years. Irrigation needs in Southern Oregon are approximately 1/3-3/4 acre foot or 4-9 inches of replenishment. On a per plant basis, irrigation requirements will be approximately 25-35 gallons per vine per season with dryer zones needing more and wetter zones much less or even none. While it is very possible to not irrigate at all in many of the cooler areas of the Umpqua and Willamette valleys, most find that having irrigation is a sound management tool.

Not fully knowing the water availability for this site, this report can not completely assess its adequacy. However, this issue will need to examined in more depth before beginning. First, the site would appear to have sufficient sub-surface moisture, at least in the winter and spring, but care must be taken to limit wet feet (roots constantly reaching the water table). This needs to be enhanced through optimizing the planting zones and tiling to maximize drainage in the existing flow zones (Maps 3 A,B). Then as the site is developed there will need to be a sufficient delivery system (control head, filter, etc.) from your water source (well, creek, pond) to the highest points in the blocks, downhill if possible.

Weather Station: Given that the site is not located near a first order weather station for direct comparison, I would also recommend that a weather station be installed and used to develop a site-specific climate normal data for future use. They can range from very simple single instrument devices for recording just temperature to more complete weather stations. Besides the type of device, there are many issues to consider, namely who will be analyzing the data, and what type of software the system comes with. If it is something you are interested in doing I would be happy to assist you in the location, installation, and training of the proper instrumentation for your site or to help monitor and analyze the data independently.

Overview and Recommendations:
Location – the property is located in an attractive landscape in the central portion of the Umpqua Valley AVA. While this area has not been fully explored for winegrape potential (there are only a few vineyards within ~10 miles), the openness of the landscape and prior use (ease of development) add to its potential.

Topography – the estimated plantable areas on the site provide flat to gradual to moderate slopes that are oriented mostly from the ESW to WNW. Cold air should drain effectively to the lower portions of the NE section of the property with no clear pooling issues except near the retention pond which will likely provide a moderating effect during frost events. In addition, the consistency in the landscape of the site with gradual slopes and slight exposure variations provides relatively easy development of that should ripen many cool to warm climate varieties grown in the region (see below). The openness of the landscape should provide adequate solar radiation receipt and minimize frost pressure, while maintaining surface and sub-surface water flow along the natural drainage zones will allow for greater control of plant available water.

Soil – the site's soils are mostly derived from the marine sedimentary geology of the surrounding landscape and the alluvial geology of the stream system that has historically run through the area. The surrounding geology weathers to produce a mix of silt and clay loams and is evident in the NRCS soils that are mapped on the property. They are typically moderately to strongly acidic, with moderate to slow permeability and have good to poor drainage. While the majority of the site will likely find good, plantable silt loams, the existing areas draining into the retention pond will likely have heavier clays, pond water during moderate to high rain events and have a high water table for much of the year. Additional tiling and rip-rap should mitigate this issue and provide for sound development of the surrounding land. In addition, while these soils have been planted to both orchards and vineyards in Southern Oregon, a site-specific set of soil samples will provide more insight into their structure, composition, potential, and amendment needs.

Climate – the site has mesoclimate characteristics that make it highly conducive to winegrape production. Heat accumulation is sufficient to ripen many cool to intermediate to warm climate varieties (see next item), with some minor within site variations coming from the undulating slope exposures. The frost-free period is sufficient to ripen the vast majority of varieties and provides a low risk environment for viticulture. However, spring frost would still be a concern with the median last spring frost coming near the median bud break for varieties grown in the region. But the openness of the landscape and maintaining adequate air drainage to the NE would minimize most low level frost events, and should mitigate much of the concern.

Varieties - Choosing which varieties to plant presents a decision by which a balance of proper varietal-site matching, market-driven needs, and personal interest should be made. Given healthy plant material, a good matching of root stocks to soil characteristics, and sound husbandry practices, the mesoclimate characteristics indicate that the site has the potential to grow many of the cool to intermediate to warmer climate varieties that are currently being grown in the region (such as depicted by Gladstones, 1992 and others).

Furthermore, the decision about what to grow should also be assessed relative to whether the site will be devoted to a complete growing and winemaking operation or just selling the fruit. For a full scale operation, varietal choices should be based upon a "wine program" or portfolio of varieties that produce a marketable style of wine. If the sites will be devoted to fruit for selling on the open market, then an assessment of what current winery operations are looking for is critical.

In the table below are listed, in alphabetical order, what could be deemed as the varieties "best suited" (from a climate, market, and experience standpoint), "has potential" (varieties that have climatic potential, but with which there is little experience in the region), "interesting" (varieties that likely have climatic potential, but with which there is virtually no experience in the region), and "not suited" (varieties that would not likely ripen):

Red Varieties	**Best Suited**	**Has Potential**	**Interesting**	**Not Suited**
Barbera			X	
Cabernet Franc				X
Cabernet Sauvignon				X
Corvina				X
Dolcetto		X		
Graciano				X
Grenache		X		
Malbec	X			
Merlot	X			
Mourvèdre			X	
Nebbiolo				X
Petite Syrah				X
Petite Verdot		X		
Pinot Noir	X			
Sangiovese				X
Syrah	X			
Tannat				X
Tempranillo	X			
White Varieties	**Best Suited**	**Has Potential**	**Interesting**	**Not Suited**
Albariño		X		
Chardonnay	X			
Gewurztraminer				X
Müller Thurgau				X
Marsanne			X	
Pinot Blanc		X		
Pinot Gris	X			
Reisling		X		
Rousanne			X	
Sauvignon Blanc	X			
Sémillon			X	
Verdejo			X	
Viognier	X			

All of the varieties suggested above have sound marketability in the area currently and for the foreseeable future. For the red varieties, Malbec, Merlot, Syrah, and Tempranillo are best suited from all standpoints. Pinot Noir would also work on the site, especially due to today's market for the variety, however the climate is at the upper margin in terms of heat accumulation and will likely produce a different style of fruit/wine. In addition, Dolcetto, Grenache, and Petit Verdot should do well in the climate structure, though there is little overall experience with these in this area. In terms of white varieties, Chardonnay, Pinot Gris, Sauvignon Blanc, and Viognier are well suited to the site. Other white varieties that should do well are Albariño, Pinot Blanc, and Riesling. Of all of the white varieties Viognier is best suited to the warmer exposures on the property while all of the others would do better on ESE to ENE exposures.

If the operation were focused to full scale vineyard and winery production, the site would offer a range of wine programs that could include: 1) a "Rhône" program (Syrah, Grenache, and Viognier with possible additions of Marsanne and Rousanne); 2) a "Bordeaux" program (Merlot, Malbec, Sauvignon Blanc and possibly Petit Verdot and Sémillon); and 3) a "Spanish" program (Tempranillo, Grenache, Albariño, and possibly Verdejo). A "Burgundy" program (Pinot Noir, Chardonnay, and even Pinot Gris and Pinot Blanc) are possible on the site, but again the climate is more intermediate than cool and would not be the best for these cooler climate varieties in the warmer years. If the operation is solely for fruit production to market, then the decisions on what to grow should be balanced with market needs and planted acreage in mind. Larger acreage lends itself to a planting a wider range of varieties, which increases the volume of production to market, versus smaller acreage needing to be limited to two or three varieties.

The estimated plantable areas evaluated in this report appear, from all the information presented in this study, to be very favorable sites for growing winegrapes.

Data Sources:

National Climatic Data Center (NCDC): 1971-2000 Climate Normals Data (http://www.ncdc.noaa.gov/).

PRISM Climate Mapping Program - Spatial Climate Analysis Service and Oregon Climate Service (http://www.climatesource.com/).

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Gregory V. Jones, Ph.D.
10/10/2008
Cascade Environmental Geographics

Table 1: Variations in the noon sun angle by latitude and month during the growing season for Oregon.

Latitude	April 1st	May 1st	June 1st	July 1st	Aug. 1st	Sept. 1st	Oct. 1st
42ºN	52º	62º	70º	71º	66º	56º	46º
43ºN	51º	61º	69º	70º	65º	55º	45º
44ºN	50º	60º	68º	69º	64º	54º	44º
45ºN	49º	59º	67º	68º	63º	53º	43º
46ºN	48º	58º	66º	67º	62º	52º	42º

*All values are for perpendicular rays on a flat surface. To find the approximate sloping land value, simply add the vineyard slope degrees to the tabled values. For example, on July 1st a potential vineyard site with a south facing slope of 8º, would provide a 77º noon sun angle at 44ºN latitude (a 12% increase).

**All sun angles are rounded to the nearest degree.

Table 2: Relative effects of site aspect (compass direction of slope) on climate characteristics and grapevine phenology.

	Aspect							
Parameter	*North*	*Northeast*	*East*	*Southeast*	*South*	*Southwest*	*West*	*Northwest*
Initial Growth in Spring	Retarded	Retarded	Retarded	Advanced	Earliest	Earliest	Advanced	Retarded
Daily Maximum Canopy Temperatures	Minimum	Less	Less	Less	Maximum	Greater	Greater	Less
Speed of evaporation in the morning	Slow	Moderate	Rapid	Moderate	Slow	Slow	Very Slow	Slow
Radiant heating of fruit in summer	Minimum	Less	Less	Less	Maximum	Greater	Greater	Moderate
Radiant heating of vines in winter	Minimum	Less	Less	Moderate	Maximum	Greater	Greater	Less

Table 3: Average climate characteristics for representative stations in the Umpqua Valley AVA.

Station (Elevation)	Average July Maximum Temperature (°F)	Average January Minimum Temperature (°F)	Average Mean Growing Season[1] Temperature (°F)	Growing Degree Days (Apr-Oct., 50°F base)	Precipitation (inches)
Drain (292 ft.)	82.5	33.7	59.7	2268	47.9
Elkton (122 ft.)	83.3	35.9	60.9	2383	52.5
Flournoy Valley (700 ft.)	NA[2]	NA	NA	NA	45.2
Riddle (680 ft.)	83.3	33.7	60.7	2436	31.6
Roseburg (465 ft.)	85.6	34.8	62.5	2544	33.6
Winchester (460 ft.)	81.5	33.9	60.3	2426	35.7

*All data are from the 1971-2000 climate normals for that station, except for Flournoy Valley which are from monthly climate summaries over for 1948-1998 and 1978-1998, respectively (OCS and WRCC, 2003).

[1]April through October.

[2]NA = data not available.

Table 4: Median frost dates for representative stations in the Umpqua AVA.

Station	Median Date of Last Spring Occurrence				Median Date of First Fall Occurrence				Frost-Free Period
	24ºF	28ºF	32ºF	36ºF	24ºF	28ºF	32ºF	36ºF	(# of days last to first, 32ºF)
Drain (292 ft.)	2-Feb	13-Mar	24-Apr	16-May	23-Dec	30-Nov	26-Oct	30-Sep	193
Elkton (122 ft.)	16-Jan	10-Feb	2-Apr	6-May	NA	15-Dec	9-Nov	15-Oct	220
Flournoy Valley (700 ft.)	NA[1]	NA	NA	NA	NA	NA	NA	NA	NA
Riddle (680 ft.)	30-Jan	6-Mar	22-Apr	13-May	NA	28-Nov	31-Oct	4-Oct	191
Roseburg (465 ft.)	16-Jan	10-Feb	7-Apr	6-May	NA	20-Dec	8-Nov	15-Oct	215
Winchester (460 ft.)	31-Jan	3-Feb	28-Mar	11-Apr	NA	9-Dec	5-Nov	23-Oct	222

Data Source: WRCC, 2003 (from the period of record for that station).

[1]NA = data not available.

Table 5 - Monthly Means and Extremes

Monthly Means and Extremes — Period: 1971-2000

Roseburg KQEN, OR

Parameter	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Mean Temperature(°F)													
Maximum	50.1	54.9	59.6	64.6	70.9	77.7	85.6	86.3	80.9	69.1	55.7	48.9	67.0
Minimum	34.8	36.5	38.4	40.7	45.5	50.5	54.7	54.7	49.9	43.9	39.6	35.1	43.7
Mean	42.5	45.7	49.0	52.7	58.2	64.1	70.2	70.5	65.4	56.5	47.7	42.0	55.4
Extreme Temperature(°F)													
Maximum	66	67	76	95	96	101	109	101	105	88	76	66	109
Minimum	29	29	28	32	34	38	47	46	35	32	30	9	9
Precipitation(inches)													
Monthly mean	4.97	4.10	3.81	2.75	1.82	.92	.44	.67	1.07	2.27	5.42	5.42	33.66
Extreme 24 hr	1.95	1.78	1.09	2.43	.92	.30	.13	.40	.41	1.28	2.23	1.59	2.43
Snowfall(inches)													
Monthly mean	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Average number of days													
Temperature													
Maximum 90 or more	.0	.0	.0	1.0	.7	4.3	12.0	12.7	8.7	.0	.0	.0	39.3
Maximum 32 or less	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	1.3
Minimum 32 or less	3.7	3.0	5.0	.3	.0	.0	.0	.0	.0	.7	1.0	7.0	19.0
Minimum 0 or less	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Precipitation													
.01 inches or more	25.0	24.0	21.7	14.0	17.7	4.3	1.3	2.0	1.7	9.0	20.7	18.0	159.3
.10 inches or more	15.3	15.7	9.0	6.3	9.3	1.3	.7	1.0	1.3	5.0	11.7	8.3	85.3
.50 inches or more	6.0	3.3	1.7	1.0	1.7	.0	.0	.0	.0	2.3	2.7	2.3	21.3
1.00 inches or more	1.0	.7	.3	.7	.0	.0	.0	.0	.0	1.0	1.0	.5	5.3
Degree Days													
Heating days @ 65 (°F)	636	529	536	360	262	71	15	6	47	270	495	712	3935
Growing days @ 50 (°F)	6	8	36	128	228	459	648	657	508	200	51	4	2933

Data Source: Oregon Climate Service

Winegrape Fertilization Practices for Oregon

Edward Hellman
North Willamette Research & Extension Center
Oregon State University

A vineyard nutrition management program should complement the soil's ability to provide the nutrients needed to sustain adequate vigor and produce the desired quantity and quality of crop. Soil conditions and production systems can vary considerably from vineyard to vineyard. Therefore, fertilization practices should be customized for individual vineyards and blocks within vineyards, and should be based on a thorough knowledge of the existing conditions.

Soil Characteristics. Every vineyard should be mapped for soil characteristics. A starting point is the soil type descriptions found in your county soil survey map. Such a map is a useful general guide for the soil associations and soil types within a site, but can not be used for the management of that site. The soils in any one association ordinarily vary in slope, depth, drainage, and other characteristics that affect their management. Develop a map of your vineyard that locates variations in soil types, depth, drainage, water holding capacity, slope, and other notable characteristics.

Soil analyses should be done for each recognizably different area within your vineyard. Soil nutrient content does not rapidly change for most nutrients, so analyses are generally not necessary to do more frequently than every 5-10 years unless major applications of fertilizer or lime are made.

A fertilization program must also be based on the production system that is being used. The relative nutritional needs and efficiency of nutrient uptake varies among grape varieties, clones, and rootstocks. Vine spacing, and the nutritional needs and/or contributions of cover crops must also be considered.

Monitor grapevine nutrient status annually with separate petiole analyses of each block, variety, rootstock, or other significantly different area of the vineyard. Petiole analyses should be conducted at the same time every year, using the same procedure, so that the results can be used to monitor trends in nutrient status. The changing trends in nutrient status are more important than single season results, which can be influenced by seasonal climatic differences or localized episodes of stress from factors such as drought or overcropping.

Keep records on all fertilizer applications; include product, rate and timing in your records. Follow up with written comments on the observed response to the fertilizer application.

Oregon Vineyards. Soil tests of Oregon vineyards frequently indicate low levels of phosphorus and boron, sometimes low potassium, and usually a relatively low pH. Keep in mind, however, that soil tests rarely are representative of the entire rooting depth of grapevines. Nutrient content and pH vary with soil depth. Interpreting soil tests in combination with the results of petiole analyses and observations of grapevine vigor provide the most complete picture of the nutrient status of your vineyard.

Grapevine petiole analysis results (Table 1.) from Oregon State University's Central Analytical Lab indicate that nutrient deficiencies were relatively infrequent in Oregon vineyards. Only nitrogen (38%) and boron (14%) were commonly deficient, and petiole nitrogen levels are generally ignored in favor of observations of grapevine vigor and crop production. Phosphorus, potassium, magnesium, and zinc were not commonly deficient.

Table 1. Summary of Oregon winegrape petiole analysis reports, 1986-1995.	
	% Samples Deficient
Nitrogen	38
Phosphorus	5
Potassium	4
Boron	14
Calcium	1
Zinc	7
Magnesium	4
Source: Oregon State University	

Vineyard fertilization practices in Oregon match the petiole analysis results fairly well. It was estimated by the Oregon Agricultural Statistics Service (Table 2.) that 23% of the grape acreage in 1995 received nitrogen fertilizer, 10% received phosphorus, and 9% received potassium. No figures are available for micronutrient applications, but boron and zinc are commonly applied.

Table 2. Estimated fertilizer primary nutrient applications to Oregon vineyards in 1995.		
	% Acres	**lb/acre**
Nitrogen	23	27
Phosphorus	10	32
Potassium	9	43
Source: Oregon Agricultural Statistics Service.		

Nitrogen. Nitrogen (N) is the most commonly needed fertilizer element in vineyards. Grapevines, however, do not have as high a nitrogen requirement as many other crops. Nitrogen fertilization always raises the concern of encouraging excessive vigor that can result in shading and reduced fruit quality. A common approach to nitrogen fertilization on relatively fertile Oregon vineyard soils is to fertilize new vines with 20 to 30 lbs. of actual nitrogen per acre during the first two years. Once vines are established, no nitrogen is applied until decreased vigor is observed. Then, a conservative nitrogen fertilization rate (25 to 30 lbs. N/acre) is applied and the vine response is closely observed. This may be a sensible approach, but keep in mind that vine growth and yields are usually reduced before symptoms are clearly expressed. Fertilization programs must also consider the nutritional requirements of annual and permanent cover crops.

The decision of which type of nitrogen fertilizer to use is primarily dependant on cost and the rate at which the nitrogen becomes available from the fertilizer product. The nitrate form of nitrogen found in calcium nitrate (15.5% N) is immediately available to the plant. It is also the most expensive dry fertilizer source of nitrogen. Ammonium nitrate has half of its 33% nitrogen in the readily available nitrate form. The other half is in the ammonium form which must undergo conversion to nitrate by soil microbes, requiring from 1-2 weeks. Urea fertilizer (46% N) also must be converted to the nitrate form before it is available to the vine. To prevent nitrogen loss from volatilization, urea and ammonium nitrate fertilizers should be drilled or incorporated at least two inches deep. Urea can be incorporated by rainfall or irrigation following application, but rain does not prevent volatilization loss when dry ammonium nitrate is applied to the soil surface. It must also be noted that urea and ammonium nitrate are acid-forming in the soil, while calcium nitrate does not acidify the soil. Monitor topsoil pH when these nitrogen fertilizers are used on a regular basis.

Complete fertilizers, those containing nitrogen, phosphorous, and potassium (N-P-K) are a more expensive source of nitrogen fertilizer because you are paying for P and K that your vineyard may not necessarily require. Foliar fertilizers usually are the most expensive source of nitrogen, and often contain many additional elements that do not require supplemental applications. Foliar fertilizers are usually not the best choice for nitrogen fertilization because the relatively large amounts of nitrogen required are difficult to supply with the dilute formulas that are necessary. Organic materials, such as manure, grape pomace (acid-forming), or an annual cover crop turned under, can be a good source of nitrogen as well as provide other soil-improving benefits. Be aware that organic sources vary in their nitrogen content and the rate of nitrogen availability. Compare the cost of the nitrogen they contain and their application to the cost of applying dry nitrogen fertilizers.

Nitrogen fertilizers traditionally have been applied in late winter or early spring so that it would be in the root zone at bud break. We now know that new vine growth in the spring is primarily dependent on nitrogen stored in the wood and roots. Therefore, the most efficient time to apply nitrogen has been shown to be from fruit set to the post-harvest period.

Phosphorus. Grapevine phosphorus (P) deficiency has not been a problem in Oregon despite the sometimes low soil P content. Several factors contribute to this: grapevines have a good ability to extract P from the soil, P is very mobile in the vine, and crop removal of P is relatively small. Generally, P fertilization is not necessary, but if soil and petiole tests indicate very low P levels you may consider a trial application in a portion of your vineyard. Apply triple superphosphate (0-45-0) at the rate of 1,500 pounds per acre in a band close to the vine. Observe the treated vines over the next several seasons to determine if there was any response to the fertilizer application.

Potassium. Grapevines have a relatively high need for potassium (K), comparable to nitrogen, and much of the potassium is removed from the vineyard in the fruit. Potassium deficiencies, however, were only seen in 4% of the petiole samples tested by O.S.U. over a ten year period (Table 1). The reasons are that many Oregon soils have adequate levels of K, potassium is resistant to losses from leaching, and deficiencies are generally confined to small (less than 1 to 3 acres) areas in a vineyard. However, levels of K often decline considerably from the topsoil to subsoil layers. This can lead to temporary deficiencies in nonirrigated vineyards, particularly during the fruit ripening period when considerable K is accumulating in the fruit. Overcropping a vine also can lead to a temporary K deficiency during fruit ripening.

If a potassium deficiency appears, first try to determine the cause of the deficiency before deciding a course of action. The temporary deficiencies caused by drought or overcropping probably can be ignored if soil tests from the deficient area indicate that adequate K levels are present. If soil K levels are quite low, it may be due to an overabundance of calcium (Ca) or magnesium (Mg). These three elements compete for fixation sites on soil particles, and a large excess of any one element can cause reduced availability of one or both of the other elements. This situation is difficult to correct, requiring massive applications of K fertilizer to correct an excess Ca or Mg problem.

If potassium fertilization is warranted, potassium sulfate (0-0-51) is an effective fertilizer source. Because potassium is rapidly fixed by the soil, the quickest response can be achieved by applying the fertilizer in a single heavy application. Apply the fertilizer in a concentrated band to the root zone at a rate of 3-5 pounds per vine, in 6-8 inch furrows, 18-24 inches from the vine.

Avoid unnecessary applications of potassium. High K levels can lead to high K content in fruit and elevated must pH. Extremely high K levels may induce a magnesium deficiency. Remember, K deficiencies tend to be localized in relatively small areas; spot treat these areas, not the whole vineyard.

Boron. Boron (B) deficiencies are relatively common in Oregon (Table 1) because of naturally low levels in our soils. Adding to the low soil boron problem, B is very immobile in the plant, which sometimes makes it unavailable when and where it is in critical need by the vine. Boron is needed for early shoot growth in the spring, and plays an important role in pollination and fruit set. Boron deficiencies have been associated with: drought the preceding fall or early winter, cold weather combined with cold wet soils in the spring, and pruning in late fall or early winter.

Unlike the other previously discussed mineral nutrients, boron fertilization is most effectively achieved with a soluble B foliar-applied fertilizer. Because boron is so important to grape production and B fertilizer is relatively inexpensive, it is recommended that boron foliar applications routinely be made to most Oregon vineyards. A post-harvest application that wets the buds is the best way to prevent the shoot-stunting symptom sometimes seen in the spring. Pre-bloom sprays seem to be an effective way to get B into flower parts. Use foliar applications at an annual rate of one pound of actual boron per acre to maintain adequate B levels without building up excesses. A note of caution about B; there is a narrow range of B levels between deficiency and excess (toxicity) for grapevines. A spray concentration of 0.4 lbs. actual B per 100 gallons of water should be safe for pre-bloom or other growing-season sprays. The post-harvest spray can be up to 0.8 lbs. actual B in 100 gallons of water.

Zinc. Zinc (Zn) deficiencies can be a serious problem in grapes, causing poor fruit set and stunted shoots with small, misshapen leaves. Deficient levels of zinc have occasionally been seen in Oregon petiole samples, but usually are localized within a small portion of a vineyard. Low Zn levels are generally associated with sandy soils and soils with high pH or high P levels; none of these conditions are common in western Oregon vineyards. Clay soils with a high magnesium content also can be low in available Zn.

Foliar application of zinc is the most effective method for treating Zn deficiency. Neutral zinc products containing 50-52% Zn, or zinc oxide (75-80% Zn) are both effective as foliar sprays. Use 4-5 pounds per acre of neutral zinc or 2-3 pounds per acre of zinc oxide in dilute applications of 100-150 gals/acre. Both of these materials are not very soluble and require good agitation and occasional flushing of sprayer lines to prevent clogging. Chelated zinc products are fully soluble in the spray tank, and are the preferred form when low volume or concentrate foliar sprays are applied.

Zinc spray applications are most effective in improving fruit set when applied during the period of two weeks prior to bloom up to full bloom. If foliar deficiency symptoms persist or reappear, a second application may be necessary.

Soil pH. Excessive soil acidity can reduce growth and yield of grapevines, and potentially cause fruit quality problems. Western Oregon vineyard soils are naturally acidic, with a pH generally in the range of 5.2 to 6.0. Soil pH can decline over time due to the acidifying effects of urea or ammonium fertilizers and sulfur used for powdery mildew control. Therefore, many of our soils are below the optimal pH range (6.0 to 6.5) for grapevines. Watch for rising Manganese (Mn) levels in your annual petiole analysis as an indicator of declining soil pH.

Low soil pH is not a simple or quick situation to correct, especially in an established vineyard. Soil pH is increased by the application of lime in the form of ground limestone (calcium carbonate) or dolomitic lime (calcium carbonate and magnesium carbonate). Lime should be spread evenly over the soil surface and incorporated (turned under), which is difficult, if not impossible, in an established vineyard. It is most effective to adjust pH prior to planting, when deep mixing of lime is possible.

The soil pH test indicates if lime is needed. The lime requirement (SMP) test determines how much lime should be applied to adjust the pH to the desired level. Accurate lime recommendations cannot be made without performing an SMP or similar lime test procedure. Refer to your soil test analysis for the SMP buffer value. This value is used with the SMP lime requirement table (Table 3) to determine the quantity of lime to apply to raise the soil pH to a target level. If quantities greater than one ton/acre are needed for an established vineyard where incorporation of the lime is not possible, apply the total lime requirement over several years. When planning lime applications, consider that your lime source is also providing calcium (Ca), and magnesium (Mg) if you use dolomitic lime. The amounts of available Ca, Mg, and K in the soil are interrelated; an extreme excess of any one of them can cause deficiencies of the others.

Conclusions. A vineyard nutrition management program should be based on a thorough knowledge of the specific conditions and circumstances within the varied sites and blocks of your vineyard. Utilize soil tests and petiole analysis to monitor the nutrient status of the soil and grapevines. Keep records of vine growth, production, and fruit quality on a block-by-block basis. Apply fertilizer nutrients only when there is a demonstrated need; if there is doubt, conduct a small trial application and evaluate the vines' response.

Table 3. SMP Lime Requirement				
	Tons/acre of 100-score lime needed to raise pH of surface 6 inches of soil to a target pH.			
SMP Buffer	**5.3**	**5.6**	**6.0**	**6.4**
6.7	---	---	---	---
6.6	---	---	---	1.1
6.5	---	---	1.0	1.7
6.4	---	---	1.1	2.2
6.3	---	---	1.5	2.7
6.2	---	1.0	2.0	3.2
6.1	---	1.4	2.4	3.7
6.0	1.0	1.7	2.9	4.2
5.9	1.4	2.1	3.3	4.7
5.8	1.7	2.5	3.7	5.3
5.7	2.0	2.8	4.2	5.8
5.6	2.3	3.2	4.6	6.3
5.5	2.6	3.6	5.1	6.8
5.4	2.9	3.9	5.5	7.3
5.3	3.2	4.3	6.0	7.8
5.2	3.6	4.7	6.4	8.3
5.1	3.9	5.0	6.9	8.9
5.0	4.2	5.4	7.3	9.4
4.9	4.5	5.8	7.7	9.9
4.8	4.8	6.2	8.2	10.4
This table was adapted from Oregon State University Extension Publication EC 1478, Soil Test Interpretation Guide.				

Oregon Farm BROKERS

Water Rights

541-497-6514
Oregonfarmbrokers.com
Oregonfarmbrokers@gmail.com
2125 Pacific Blvd. Albany 97321
1121 NW 9th Ave Corvallis 97330

STATE OF OREGON

COUNTY OF DOUGLAS

PERMIT TO APPROPRIATE THE PUBLIC WATERS

THIS PERMIT IS HEREBY ISSUED TO:

POPEYE'S GIRLFRIEND LLC
3720 SW BOND AVE UNIT 408
PORTLAND OR 97239

The specific limits and conditions of the use are listed below.

APPLICATION FILE NUMBER: S-87856

SOURCE OF WATER: FORD'S POND, CONSTRUCTED UNDER PERMIT R-1669, TRIBUTARY OF CALAPOOYA CREEK

PURPOSE OR USE: IRRIGATION OF 163.1 ACRES

MAXIMUM VOLUME: 50.0 ACRE FEET

DATE OF PRIORITY: JANUARY 7, 2013

PERIOD OF USE: MARCH 1 THROUGH OCTOBER 31

Authorized Point of Diversion:

Twp	Rng	Mer	Sec	Q-Q	Measured Distances
25 S	6 W	WM	14	SW SE	715 FEET NORTH AND 1550 FEET WEST FROM SE CORNER, SECTION 14

The amount of water used for irrigation, together with the amount secured under any other right existing for the same lands, shall be limited to a diversion of not to exceed 2.5 acre-feet per acre for each acre irrigated during the irrigation season of each year. The right to the use of the water for the above purpose is restricted to beneficial use on the lands or place of use described.

Authorized Place of Use:

Twp	Rng	Mer	Sec	Q-Q	Acres
25 S	6 W	WM	14	SE SW	11.4
25 S	6 W	WM	14	SW SE	12.4
25 S	6 W	WM	23	NE NE	1.1
25 S	6 W	WM	23	NW NE	38.1
25 S	6 W	WM	23	SW NE	19.7
25 S	6 W	WM	23	SE NE	1.5
25 S	6 W	WM	23	NE NW	39.3
25 S	6 W	WM	23	NW NW	5.3
25 S	6 W	WM	23	SW NW	7.5
25 S	6 W	WM	23	SE NW	26.8

Measurement, recording and reporting conditions:

A. Before water use may begin under this permit, the permittee shall install a totalizing flow meter at each point of diversion, and maintain the meter(s) in good working order.

B. The permittee shall allow the watermaster access to the meter(s); where a meter is located within a private structure, the watermaster shall request access upon reasonable notice.

C. The Director may require the permittee to keep and maintain a record of the amount (volume) of water used, and may require the permittee to report water use on a periodic schedule as established by the Director. In addition, the Director may require the permittee to report general water-use information, the periods of water use, and the place and nature of use of water under the permit. The Director may provide an opportunity for the permittee to submit alternative reporting procedures for review and approval.

D. The Director may provide an opportunity for the permittee to submit alternative measuring and reporting procedures for review and approval.

The water user shall install, maintain, and operate fish screening and by-pass devices consistent with current Oregon Department of Fish and Wildlife (ODFW) standards. Fish screening is to prevent fish from entering the proposed diversion, while by-pass devices provide adequate upstream and downstream passage for fish. The required screen and by-pass devices are to be in place and functional, and approved in writing by ODFW prior to diversion of water. The water user may submit evidence in writing that ODFW has determined screens and/or by-pass devices are not necessary.

STANDARD CONDITIONS

1. Failure to comply with any of the provisions of this permit may result in action including, but not limited to, restrictions on the use, civil penalties, or cancellation of the permit.

2. Where two or more water users agree among themselves as to the manner of rotation in the use of water and such agreement is placed in writing and filed by such water users with the watermaster, and such rotation system does not infringe upon such prior rights of any water user not a party to such rotation plan, the watermaster shall distribute the water according to such agreement.

3. This permit is for the beneficial use of water without waste. The water user is advised that new regulations may require the use of best practical technologies or conservation practices to achieve this end.

4. By law, the land use associated with this water use must be in compliance with statewide land-use goals and any local acknowledged land-use plan.

5. The use of water allowed herein may be made only at times when sufficient water is available to satisfy all prior rights, including prior rights for maintaining instream flows.

6. If the riparian area is disturbed in the process of developing a point of diversion, the permittee shall be responsible for restoration and enhancement of such riparian area in accordance with ODFW's Fish and Wildlife Habitat Mitigation Policy OAR 635-415. For purposes of mitigation, the ODFW Fish and Wildlife Habitat Mitigation Goals and Standards, OAR Chapter 635, Division 415, shall be followed.

7. Completion of construction and application of the water shall be made within five years of the date of permit issuance. If beneficial use of permitted water has not been made before this date, the permittee may submit an application for extension of time, which may be approved based upon the merit of the application

8. Within one year after making beneficial use of water, the permittee shall submit a claim of beneficial use, which includes a map and report, prepared by a Certified Water Rights Examiner.

Issued APRIL 18 2013.

E. Timothy Wallin

E. Timothy Wallin, Water Rights Program Manager
for Phillip C. Ward, Director

Parcel Map

541-497-6514

Oregonfarmbrokers.com

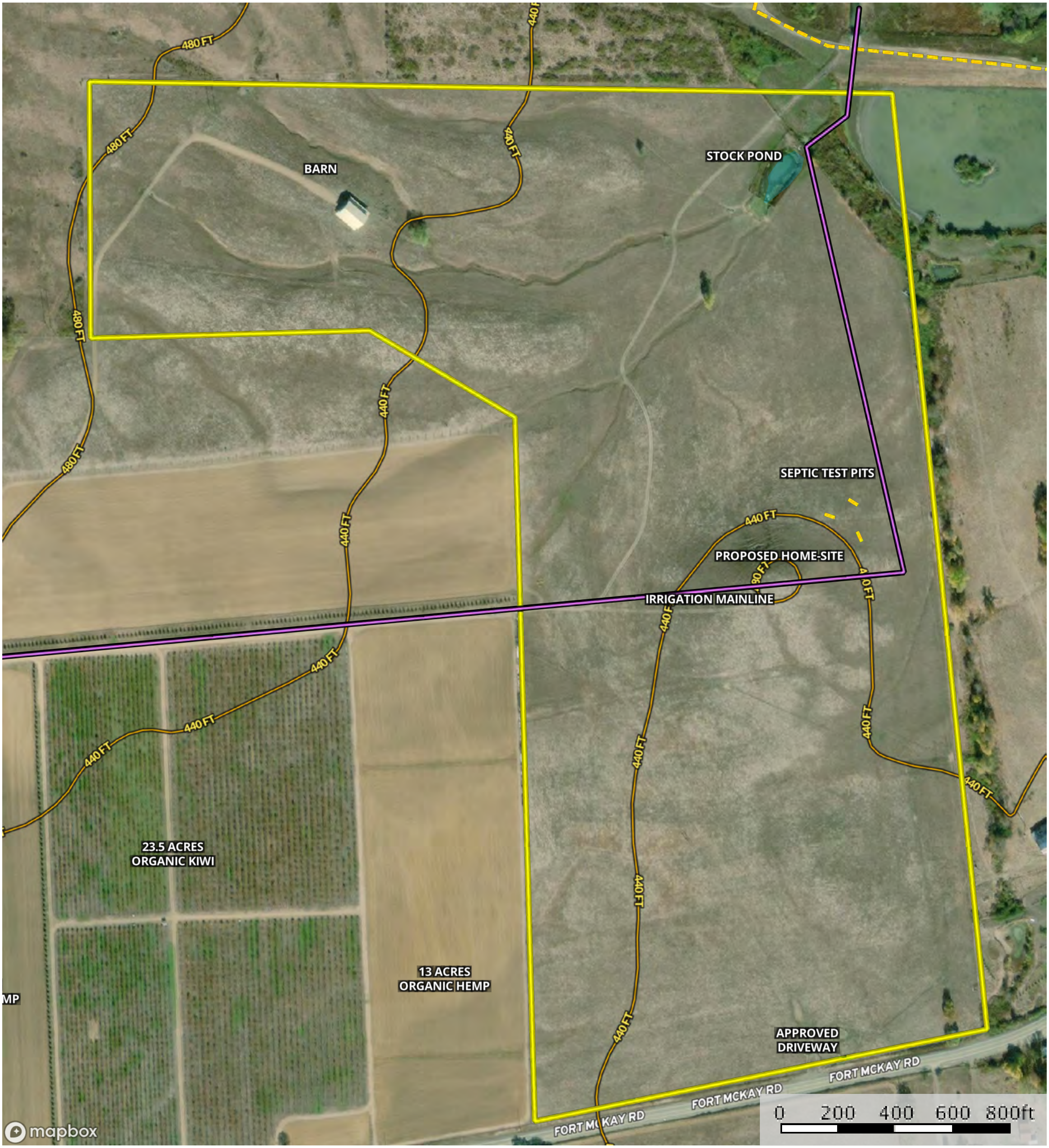
Oregonfarmbrokers@gmail.com

2125 Pacific Blvd. Albany 97321

1121 NW 9th Ave Corvallis 97330

1625 Fort McKay Rd Oakland (Link Share) 80 Acres

Oregon, AC +/-



Pipeline
Road / Trail
Boundary
Pond / Tank

Paul Terjeson Steve Helms

P: 541-999-6777 OregonFarmBrokers.com 2125 Pacific Blvd. Albany, OR 97321