

**STATE OF OREGON
WATER RESOURCES DEPARTMENT**

RECEIPT # **95693**

3850 PORTLAND ROAD NE
SALEM, OR 97310
378-8455/378-8130 (FAX)

RECEIVED FROM: Bottles Creek Farm
BY: _____

APPLICATION	
PERMIT	
TRANSFER	

CASH: CHECK: # 24-16 OTHER: (IDENTIFY)

TOTAL REC'D \$ 400.00

01-00-0 WRD MISC CASH ACCT

842.010	ADJUDICATIONS	\$ <u>400.00</u>
831.087	PUBLICATIONS/MAPS	\$
830.650	PARKING FEES Name/month	\$
_____	OTHER: (IDENTIFY)	\$

REDUCTION OF EXPENSE

CASH ACCT.	\$
COST CENTER AND OBJECT CLASS	VOUCHER #

03-00-0 WRD OPERATING ACCT

MISCELLANEOUS:

840.001	COPY FEES	\$
850.200	RESEARCH FEES	\$
880.109	MISC REVENUE: (IDENTIFY)	\$
520.000	OTHER (P-6): (IDENTIFY)	\$

WATER RIGHTS:

842.001	SURFACE WATER	EXAM FEE	842.002	RECORD FEE
842.003	GROUND WATER	\$	842.004	\$
842.005	TRANSFER	\$	842.006	\$

WELL CONSTRUCTION

842.022	WELL DRILL CONSTRUCTOR	EXAM FEE	842.023	LICENSE FEE
842.016	WELL DRILL OPERATOR	\$	842.019	\$
_____	LANDOWNER'S PERMIT	\$	842.024	\$

06-00-0 WELL CONST START FEE

842.013	WELL CONST START FEE	\$	CARD #	
_____	MONITORING WELLS	\$	CARD #	

45-00-0 LOTTERY PROCEEDS

864.000	LOTTERY PROCEEDS	\$
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07-00-0 HYDRO ACTIVITY

842.011	POWER LICENSE FEE(FW/WRD)	LIC NUMBER	\$
842.115	HYDRO LICENSE FEE(FW/WRD)		\$
_____	HYDRO APPLICATION		\$

RECEIPT # **95693**

DATED: 12-30-92 BY: D. Bushnell

SURFACE WATER REGISTRATION CHECKLIST

(received after July 18, 1990)

CHECK BASIN MAP SEE NAME Unyqua # 16 UNADJUDICATED AREA ? YES
RECEIPT # 95693 S W R NUMBER 352
CHECK ENCLOSURES SEE PRELIMINARY DATA BASE ENTRY AWP
ACKNOWLEDGEMENT LETTER SEE ENTER ON STREAM INDEX _____
CHECK QUADRANGLE MAP _____ CHECK GLO PLATS _____
WATERMASTER CHECKLIST _____ PUBLIC NOTICE PUBLICATION SEE

FORM REVIEW

_____ blanks filled in
_____ signed
_____ date received stamped

MAP REVIEW

source and trib
 diversion point location
 conveyances (pipes, ditch, etc.)
 place of use
 scale
 township, range, section
 north arrow
 CWRE stamp
 disclaimer
 date survey was performed
 P.O.B. of survey
 dimensions and capacity of diversion system
 "beneficial use" type title
 "permanent-quality" paper
 1/10 1/2 acre

WATER RIGHT RECORD CHECK _____ FIELD INSPECTION _____

FINAL FILE REVIEW _____ FINAL DATA BASE ENTRY _____

ENTER ON PLAT CARDS _____

April 7, 1993

BUTLER CREEK FARM INC
PO BOX 34
REEDSPORT OR 97467

RE: SWR-352

Dear Ms Steward,

I received the note from Keith Jehnke, CWRE who prepared your map and beneficial use report, in regards to the uses of water covered by your claim. As it looks now, your claim is for domestic for 2 houses and stockwater. The \$ 400.00 fees you submitted are correct for those two uses. In the future we will review all of the data in your file and likely arrange for an inspection of your water use.

If you have any questions, please give me a call.

Sincerely,



Don Knauer
Adjudication Specialist

J:\WS\C13\SWR-0352.002



3850 Portland Rd NE
Salem, OR 97310
(503) 378-3739
FAX (503) 378-8130

March 12, 1993

BUTLER CREEK FARM INC
PO BOX 34
REEDSPORT OR 97467

Dear MS STUWARD,

You failed to submit enough fees with your Surface Water Registration Statement as required under ORS 539.081.

You sent \$400.00 and your receipt #95693 is enclosed. You should have sent a total of \$600.00. The amount now due is \$200.00. On the form you listed domestic and stockwater as the uses. On the supplemental information sheet you list "barn cleaning" in addition to the others. Barn cleaning is not covered by domestic or stockwater, it is another use and hence the fees are required. Your claim will not be processed until these remaining fees are received. Your claim has been numbered SWR-352.

Please feel free to contact this office if you have any questions.

Sincerely,



Don Knauer
Adjudication Specialist

Enclosure

M:\WP51\SWR\CLAIMANT\SWR-0352.001



3850 Portland Rd NE
Salem, OR 97310
(503) 378-3739
FAX (503) 378-8130

REGISTRATION STATEMENT CLAIM OF BENEFICIAL USE AND SITE REPORT

Field Survey By Keith Jehnke, C.W.R.E.
12/10/92

Information:

Permittee Owner: Butler Creek Farm, Inc.
Address: P.O. Box 34
Reedsport, Oregon 97467

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WATER RESOURCES DEPT.
SALEM, OREGON

Contact: Judy Dixon 271-3417

The original pre-1909 use was for domestic (2 Households), irrigation of orchard and garden and some stock watering. The water was procured in similar fashion to the present method.

Tom Petrusich was contacted on the site.

Source

P.O.D. #1 is an unnamed spring which forms a channel and flows in to the Umpqua River.

P.O.D. #2 is an unnamed spring which forms a channel and flows into the Umpqua River.

Motor/Pump

None - Both systems are fed by gravity.

Pipe

P.O.D. #1 - The water is diverted by a small concrete dam about 4' long, 8" high and 6" wide. The water then travels 20' through 2" black poly pipe to a 55 gallon settling drum. The water then travels 65' through 1" black polypipe to a rectangular concrete storage tank 17' long x 5' wide x 3' high. (Approximately 1800 gallons.) The water then travels 210' through 1" pipe to the shop building where the line splits. A 1' line runs 80' to serve the house and the other 1" line runs 310 feet to serve the barn and 5 watering troughs for cattle.

P.O.D. #2 - The water is diverted by a small concrete dam about 4' long, 8" high and 6" wide. The water then travels about 20 feet through 1-1/4" line to a 55 gallon settling drum. The water then travels 10' through 1-1/4" line to a 300 gallon plastic storage tank with overflow. The water then travels 360' through 1" blackpoly pipe to the house.

Head: The irrigation uses for this system are with garden hose and sprinklers.

Uses

The water from P.O.D. #1 is used for domestic including 1/2 acre of lawn and garden irrigation as well as stock watering and barn cleaning for 200 head of cattle.

The water from P.O.D. #2 is used for domestic including 1/2 acre of lawn and garden irrigation.

Calculations

See attached.

Survey Tie

The west quarter corner of Section 31, T.21S., R.11W., W.M., Douglas County, was tied to the P.O.D.'s using a string chain and hand compass.

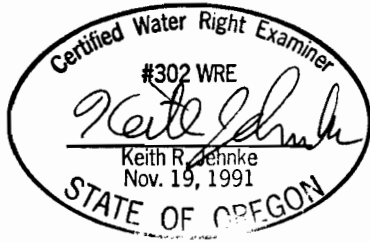
P.O.D. #1 is located 895' north and 225' east of the west quarter corner of Section 31.

P.O.D. #2 is located 160' north and 965' east of the west quarter corner of Section 31.

Conclusion

This final proof survey and inspection of the use as found to be completed by me on December 10, 1992, and the facts contained in this report and accompanying Vested Water Rights Application Map are correct to the best of my knowledge.

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SALEM, OREGON



I, _____, agree to the findings of the C.W.R.E. and do submit this site report and map as my Claim of Beneficial use of the water.

Date: 12/28/92 Signed: Margaret Wade Sammons
Judy Dixon
Paul Carter

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WATER RESOURCES DEPT.
SALEM, OREGON

1/3

Capacity Calcs

Westerly POD (#1) - Gravity feed

210' of 1" line

$$\text{Head available} = 53 - 20 = 33'$$

$$\Delta \text{ Elev} = \text{Friction losses} + \text{Velocity Head}$$

↑ insignificant

$$\left(\frac{624 \text{ lbs}}{144 \text{ in}^2} \right) 33' = 2.1 \left(\begin{array}{l} \text{Friction} \\ \text{Head} \\ \text{Loss} \\ \text{Factor} \\ \text{per } 100' \end{array} \right)$$

$$14.3 \text{ psi} = 2.1 \left(\begin{array}{l} \text{Friction} \\ \text{Head} \\ \text{Loss} \\ \text{Factor per} \\ 100' \end{array} \right)$$

$$\text{Friction Head Loss Factor per } 100' = \left(\frac{14.3}{2.1} \right) = 6.8$$

Interpolate to solve:

5gpm	6.99
14.75	6.80
10gpm	3.16

Capacity of Westerly system is 14.75 gpm
 \Rightarrow .033 cfs

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Capacity Calcs
Easterly P.O.D. (#2) - Gravity feed
390' of 1" line
Head available 72-20 = 52'

$$\Delta \text{Elev} = \text{friction losses} + \text{Velocity head}$$

$$\left(\frac{62.4 \text{ lbs}}{144 \text{ in}^2} \right) 52' = 3.9 \left(\begin{matrix} \text{Friction} \\ \text{Head} \\ \text{Loss} \\ \text{Factor} \\ \text{per } 100' \end{matrix} \right) + \frac{V^2}{2g}$$

$$22.5 \text{ psi} = 3.9 \left(\begin{matrix} \text{Friction} \\ \text{Head loss} \\ \text{Factor} \end{matrix} \right) + \frac{V^2}{2g}$$

Guess a flow + iterate to solve
guess 10 gpm

$$22.5 \text{ psi} = 3.9 (3.16) + \frac{(3.3)^2}{2(32.2)} (.43)$$

.07 psi insignificant
∴ ignore

$$\frac{(10 \text{ gpm}) \left(\frac{2.28 \times 10^{-3} \text{ cfs}}{\text{gpm}} \right)}{.0069 \text{ ft}^2} \Rightarrow 3.3 \text{ fps}$$

22.5 psi > 12.4 psi
10 gpm is too low, try 15 gpm

$$22.5 = 3.9 (6.99)$$

$$22.5 < 27.26$$

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3/3

Solve by interpolation

10gpm	12.4	
13.4gpm	22.5	← Known Psi
15gpm	27.26	

Capacity of Easterly system is 13.4gpm

$$(13.4 \text{ gpm}) (2.228 \times 10^{-3}) \Rightarrow .03 \text{ ffs}$$

Stuntzner Engineering & Forestry

ENGINEERING * LAND SURVEYING *
PLANNING * WATER RIGHTS

705 South 4th Street - Post Office Box 118
Coos Bay, Oregon 97420
Phone (503) 267-2872 Fax (503) 267-0588

FORESTRY



TO Don Knaver AT OWRD
SUBJECT SWR-352 - Butler Creek Farm, Inc. DATE 4/5/93

Mr. Knaver:

There was a misunderstanding between myself and Butler Creek Farm regarding barn cleaning. I assumed that water was used for the barn cleaning however I have been informed that water has not been used for barn ^{cleaning} & would like to revise the Water Quantity Calculations as follows:

Domestic including 1/2 acre irrigation	.01 cfs
Domestic including 1/2 acre irrigation	.01 cfs
Cattle 200 head @ 15 gpd	.0046 cfs
Total	.0246 cfs

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APR - 7 1993

WATER RESOURCES DEPT.
SALEM, OREGON

Very Truly Yours,

DATE

SIGNED

Keith Jehnke, P.E.

cc: Butler Creek Farm

March 12, 1993

BUTLER CREEK FARM INC
PO BOX ~~31~~ 678
REEDSPORT OR 97467

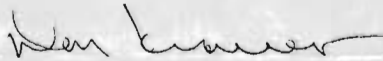
Dear MS ~~STUWARD~~, SEIDEL,

You failed to submit enough fees with your Surface Water Registration Statement as required under ORS 539.081.

You sent \$400.00 and your receipt #95693 is enclosed. You should have sent a total of \$600.00. The amount now due is \$200.00. On the form you listed domestic and stockwater as the uses. On the → supplemental information sheet you list "barn cleaning" in addition to the others. Barn cleaning is not covered by domestic or stockwater, it is another use and hence the fees are required. Your claim will not be processed until these remaining fees are received. Your claim has been numbered SWR-352.

Please feel free to contact this office if you have any questions.

Sincerely,



Don Knauer
Adjudication Specialist

Enclosure

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Thanks, Keith!
Joan



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Water Quantity Calcs

WATER RESOURCES DEPT.
SALEM, OREGON

Domestic including 1/2 acre irrigation	.01 cfs
Domestic including 1/2 acre irrigation	.01 cfs
Cattle 200 head @ 15 gpd \Rightarrow	.0046 cfs
Barn Cleaning 200 head @ 35 gpd \Rightarrow	.0108 cfs
	<hr/>
	.0354 cfs

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POD # 1

WATER RESOURCES DEPT.
SPRING DESCRIPTION SHEET
SALEM, OREGON

APPLICATION _____

1. Is the spring on property owned by applicant? Yes

2. If not, give name and address of legal owner: NA

3. Have you secured consent of owner to appropriate water from this spring and for construction of pipeline or other works? NA

4. If you do not have such consent, do you expect to secure right-of-way through condemnation? NA

5. What is the maximum flow from the spring in gallons per minute or cubic feet of water per second? 12gpm

What is the minimum flow? 3gpm

Is flow measured or estimated? estimated

6. Does the stream flowing from the spring form a well defined natural channel? yes

7. Does the water flow off the lands on which it first arises? yes

8. Give the name of the stream or other body of water into which water from the spring flows: Umpqua River

9. If the water from the spring sinks or evaporates before reaching other water, give distance water flows from spring before vanishing: NA

10. Remarks: _____

[Signature]
Margaret Wade Steward
Signature
[Signature]
Judy Dixon
Signature

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DOD #2

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WATER RESOURCES DEPT.
SALEM, OREGON

SPRING DESCRIPTION SHEET

APPLICATION _____

1. Is the spring on property owned by applicant? Yes

2. If not, give name and address of legal owner: NA

3. Have you secured consent of owner to appropriate water from this spring and for construction of pipeline or other works? NA

4. If you do not have such consent, do you expect to secure right-of-way through condemnation? NA

5. What is the maximum flow from the spring in gallons per minute or cubic feet of water per second? 12 gpm

What is the minimum flow? 3 gpm

Is flow measured or estimated? estimated

6. Does the stream flowing from the spring form a well defined natural channel? yes

7. Does the water flow off the lands on which it first arises? yes

8. Give the name of the stream or other body of water into which water from the spring flows: Umpqua River

9. If the water from the spring sinks or evaporates before reaching other water, give distance water flows from spring before vanishing: NA

10. Remarks: _____

Joan White
Signature
Margaret Wade Steward
Signature
Judy Dwyer
Signature

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WATER RESOURCES DEPT.
 SALEM, OREGON

HOW MUCH WATER IS NEEDED?

In making estimates of quantity of water which would be needed, the following approximations are offered for various purposes around homes or farms. It is always well to exceed rather than cut down on these quantities, so that the equipment you install for your customer will meet all emergencies when several outlets are used at once.

Approximate Flow of Water per Minute Through Average Fixtures

Shower Bath	5 gallons per minute
Tub Bath	10 gallons per minute
Lavatory	5 gallons per minute
Tank Closet	5 gallons per minute
Valve Closet	30 gallons per minute
Kitchen Sink	10 gallons per minute
Laundry Tub	10 gallons per minute
Flowing Drinking Fountain	1½ gallons per minute
Garden Hose, 3/4" nozzle	5 gallons per minute

Average Quantity of Water Required for Different Services Supplied by Water Supply Systems

Each member of family	50 gallons per day
Each horse	12 gallons per day
Each dry cow or steer	12 gallons per day
Each milk cow	35 gallons per day
Each hog	4 gallons per day
Each sheep	2 gallons per day
Chickens, per 100	4 gallons per day

PRESSURE TABLES, WEIGHTS AND MEASURES

USEFUL INFORMATION

A U. S. gallon of water weighs 8½ pounds and contains 231 cubic inches. A cubic foot of water weighs 62½ pounds and contains 1728 cubic inches or 7½ gallons. To find English gallons, deduct 1/6.

Doubling the diameter of a pipe increases its capacity four times. Friction of liquids in pipes increases as the square of the velocity.

The mean pressure of the atmosphere is usually estimated at 14.7 pounds per square inch, so that with a perfect vacuum it will sustain a column of mercury 29.9 inches, or a column of water 33.9 feet high.

To find the pressure in pounds per square inch of a column of water, multiply the height of the column in feet by .434. Approximately, we say that every foot of elevation is equal to one-half pound of pressure per square inch.

To find the diameter of a pump cylinder to move a given quantity of water per minute (100 feet of piston being the standard speed), divide the number of gallons by four, then extract the square root, and the result will be the diameter in inches of the pump cylinder.

To find the quantity of water elevated per minute, running

100 feet of piston, square the diameter of the pump cylinder in inches and multiply by four; the product will be approximately the number of gallons.

To find the horsepower necessary to elevate water to a given height, multiply the total weight of water in pounds by the height in feet and divide the product by 33,000 (approximately).

To find the capacity of a cylinder in gallons, multiply the area in inches by the length of the stroke in inches and divide by 231; the quotient is the capacity in gallons.

To find the number of gallons in a tank, multiply the inside bottom diameter in inches by the inside top diameter in inches, then this product by 34, point off four figures, and the result will be the average number of gallons to one inch in depth of tank.

For the circumference of a circle, multiply diameter by 3.1416

For the diameter of a circle, multiply circumference by .31831

For the area of a circle, multiply square of diameter by .7854

For size of an equal square, multiply the diameter by .8862

For surface of a ball, multiply square of diameter by 3.1416

For cubic inches in a ball, multiply cube of diameter by .5236

FRICITION OF WATER IN PIPES

Friction loss, in pounds pressure per square inch, for each 100 feet of length of various sizes of clean iron pipe, discharging given quantities of water per minute.

Gallons per Minute	Size of Pipe, Inside Diameter, Inches									
	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	6	8
5	3.3	3.54	0.31	0.12	0.05					
10	13.0	3.16	1.05	0.47	0.12					
15	28.7	6.89	2.38	0.97	0.30	0.11				
20	50.4	12.5	4.07	1.66	0.42	0.15				
25	78.0	19.0	6.40	2.62	0.51	0.21	0.10			
30		27.3	9.15	3.75	0.91	0.33	0.11			
35		37.0	12.4	5.05	1.20	0.45	0.17			
40		48.0	16.1	6.52	1.60	0.52	0.22			
45			20.2	8.15	2.00	0.65	0.28			
50			24.9	10.0	2.44	0.81	0.35	0.09		
75			56.1	22.4	5.32	1.80	0.74	0.17		
100				39.0	9.46	3.20	1.31	0.33	0.05	
125					14.9	4.89	1.99	0.53		
150					21.2	7.00	2.85	0.69	0.10	
175					28.1	9.46	3.85	1.00		
200					37.3	12.47	5.02	1.22	0.17	
250						19.66	7.76	1.89	0.26	0.07
300						28.06	11.2	2.66	0.37	0.09
350							15.2	3.65	0.50	0.12
400							19.5	4.73	0.65	0.16
450							25.0	6.01	0.81	0.20
500							30.8	7.43	0.96	0.25
750									2.21	0.53
1000									3.89	0.84

WEIGHTS AND MEASURES

METRIC SYSTEM

Length

1 millimeter	= .0394 inches
1 centimeter	= .3937 inches
1 meter	= 39.378 inches
1 kilometer	= .6214 miles

Weight

1 gram	= 15.4323 grains
1 kilogram	= 2.2046 pounds
1 tonneau	= 2204.55 pounds

Dry Measure

1 centiliter	= .0181 pints
1 liter	= .908 quarts
1 hectoliter	= 2.837 bushels

Liquid Measure

1 centiliter	= .0211 pints
1 liter	= 1.0567 quarts
1 hectoliter	= 26.4176 gallons

DIETZGEN

THE FINEST IN DRAFTING
SURVEYING & PRINTMAKING

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SALEM, OREGON

DIETZGEN GENERAL CONVERSION TABLES

<i>Multiply</i>	<i>by</i>	<i>to obtain</i>	<i>Multiply</i>	<i>by</i>	<i>to obtain</i>
acres	43,560	square feet	cubic inches	0.03463	pints (liq.)
acres	4047	square meters	cubic inches	0.01732	quarts (liq.)
acres	1.562x10 ⁴	square miles	cubic yards	7.646x10 ⁴	cubic centimeters
acres	5645.38	square varas	cubic yards	27	cubic feet
acres	4840	square yards	cubic yards	46.656	cubic inches
amperes	1/10	abamperes	cubic yards	0.7646	cubic meters
amperes	3x10 ⁹	statamperes	cubic yards	202.0	gallons
atmospheres	76.0	cms. of mercury	cubic yards	764.6	liters
atmospheres	29.92	inches of mercury	cubic yards	1616	pints (liq.)
atmospheres	33.90	feet of water	cubic yards	807.9	quarts (liq.)
atmospheres	10,333	kgs. per sq. meter	cubic yards per minute	0.45	cubic feet per sec.
atmospheres	14.70	pounds per sq. inch	cubic yards per minute	3.367	gallons per second
atmospheres	1.058	tons per sq. foot	cubic yards per minute	12.74	liters per second
British thermal units	0.2520	kilogram-calories	degrees (angle)	60	minutes
British thermal units	777.5	foot-pounds	degrees (angle)	0.01745	radians
British thermal units	3.927x10 ⁴	horse-power-hours	degrees (angle)	3600	seconds
British thermal units	1054	joules	dynes	1.020x10 ⁷	grams
British thermal units	107.5	kilogram-meters	dynes	7.233x10 ⁷	poundals
British thermal units	2.928x10 ⁴	kilowatt-hours	dynes	2.248x10 ⁸	pounds
B.t.u. per min.	12.96	foot-pounds per sec.	ergs	9.486x10 ¹¹	British thermal units
B.t.u. per min.	0.02356	horse-power	ergs	1	dyne-centimeters
B.t.u. per min.	0.01757	watts	ergs	7.376x10 ⁷	foot-pounds
B.t.u. per min.	17.57	watts per sq. inch	ergs	1.020x10 ⁸	gram-centimeters
B.t.u. per sq. ft. per min.	0.1220	cubic feet	ergs	10 ⁷	joules
bushels	1.244	cubic inches	ergs	2.390x10 ¹¹	kilogram-calories
bushels	2150	cubic meters	ergs	1.020x10 ⁸	kilogram-meters
bushels	0.03524	pecks	feet	30.48	centimeters
bushels	4	pints (dry)	feet	12	inches
bushels	64	quarts (dry)	feet	0.3048	meters
bushels	32	inches	feet	.36	varas
centimeters	0.3397	meters	feet	1/3	yards
centimeters	0.01	mils	feet of water	0.02950	atmospheres
centimeters	393.7	millimeters	feet of water	0.8826	inches of mercury
centimeters	10	centimeter-dynes	feet of water	304.8	kgs. per sq. meter
centimeter-grams	980.7	meter-kilograms	feet of water	62.43	pounds per sq. ft.
centimeter-grams	10 ⁴	pound-foot	feet of water	0.4335	pounds per sq. inch
centimeter-grams	7.233x10 ⁴	atmospheres	foot-pounds	1.286x10 ⁷	British thermal units
centimeters of mercury	0.01316	feet of water	foot-pounds	1.356x10 ⁷	ergs
centimeters of mercury	0.4461	kgs. per sq. meter	foot-pounds	5.050x10 ⁷	horse-power-hours
centimeters of mercury	136.0	pounds per sq. foot	foot-pounds	1.356	joules
centimeters of mercury	27.85	pounds per sq. inch	foot-pounds	3.241x10 ⁴	kilogram-calories
centimeters of mercury	0.1934	feet per minute	foot-pounds	0.1383	kilogram-meters
centimeters per second	1.969	feet per second	foot-pounds	3.766x10 ⁷	kilowatt-hours
centimeters per second	0.03281	kilometers per hour	foot-pounds per min.	1.286x10 ³	B.t. units per minute
centimeters per second	0.036	meters per minute	foot-pounds per min.	0.01667	foot-pounds per sec.
centimeters per second	0.6	miles per hour	foot-pounds per min.	3.030x10 ⁴	horse-power
centimeters per second	0.02237	miles per minute	foot-pounds per min.	3.241x10 ⁴	kg-calories per min.
centimeters per second	3.728x10 ⁴	cubic feet	foot-pounds per min.	2.260x10 ⁴	kilowatts
centimeters per second	3.531x10 ⁴	cubic inches	foot-pounds per sec.	7.717x10 ⁴	B.t. units per minute
cubic centimeters	6.102x10 ³	cubic inches	foot-pounds per sec.	1.818x10 ⁴	horse-power
cubic centimeters	10 ⁴	cubic meters	foot-pounds per sec.	1.945x10 ⁴	kg-calories per min.
cubic centimeters	1.308x10 ⁴	cubic yards	foot-pounds per sec.	1.356x10 ⁴	kilowatts
cubic centimeters	2.642x10 ⁴	gallons	gallons	8.345	pounds of water
cubic centimeters	10 ⁴	liters	gallons	3785	cubic centimeters
cubic centimeters	2.113x10 ⁴	pints (liq.)	gallons	0.1337	cubic feet
cubic centimeters	1.057x10 ⁴	quarts (liq.)	gallons	231	cubic inches
cubic feet	62.43	pounds of water	gallons	3.785x10 ³	cubic meters
cubic feet	2.832x10 ⁴	cubic cms.	gallons	4.951x10 ³	cubic yards
cubic feet	1728	cubic inches	gallons	3.785	liters
cubic feet	0.02832	cubic meters	gallons	8	pints (liq.)
cubic feet	0.03704	cubic yards	gallons	4	quarts (liq.)
cubic feet	7.481	gallons	gallons per minute	2.228x10 ³	cubic ft. per second
cubic feet	28.32	liters	gallons per minute	0.06308	liters per second
cubic feet	59.84	pints (liq.)	grains (troy)	1	grams (av.)
cubic feet	29.92	quarts (liq.)	grains (troy)	0.06480	grams
cubic feet per minute	472.0	cubic cms. per sec.	grains (troy)	0.04167	pennyweights (troy)
cubic feet per minute	0.1247	gallons per sec.	grams	980.7	dynes
cubic feet per minute	0.4720	liters per second	grams	15.43	grains (troy)
cubic feet per minute	62.4	lbs. of water per min.	grams	10 ³	kilograms
cubic inches	16.39	cubic centimeters	grams	10 ³	milligrams
cubic inches	5.787x10 ⁴	cubic feet	grams	0.03527	ounces
cubic inches	1.639x10 ⁴	cubic meters	grams	0.03715	ounces (troy)
cubic inches	2.143x10 ⁴	cubic yards	grams	0.07093	poundals
cubic inches	4.329x10 ⁴	gallons	grams	2.205x10 ³	pounds
cubic inches	1.639x10 ⁴	liters	horse-power	42.44	B.t. units per min.

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Figure F — FRICTION HEAD IN FEET PER 100' OF SCHEDULE 40 PIPE

GPM	1-1/4"		1-1/2"		2"		2-1/2"		3"	
	PLASTIC	STEEL	PLASTIC	STEEL	PLASTIC	STEEL	PLASTIC	STEEL	PLASTIC	STEEL
4	.34	.35								
6	.71	.72	.33	.34						
8	1.19	1.20	.56	.57						
10	1.78	1.74	.83	.85						
12	2.48*	2.45*	1.16	1.18	.34	.35				
14	3.29	3.24	1.54	1.51	.45	.46				
16	4.21	4.15	1.97*	1.93*	.58	.59				
18	5.25	5.17	2.41*	2.40*	.72	.73				
20	6.42	6.31	2.96	2.92	.88	.88				
25	10.39	9.61	4.80	4.80	1.38	1.39				
30	13.6	13.0	6.27	6.23	1.81	1.82	.75	.77		
35	19.2	18.2	8.82	8.82	2.4*	2.4*	1.01	.99		
40			10.7	10.80	3.12	3.10	1.28	1.3		
45			14.0	14.0	3.8	3.8	1.5	1.6	.55	.56
50			16.5	16.5	4.7	4.7	1.9*	1.9*	.66	.68
60					6.5	6.6	2.7*	2.7*	.94	.91
70					8.6	8.8	3.7	3.6	1.2	1.2
80					11.1	11.4	4.7	4.6	1.6	1.6
90					13.8	14.3	5.8	5.8	2.0*	2.0*
100					16.8	17.5	7.1	7.1	2.4	2.4
125							10.9	10.9	3.7	3.6
150							15.9	15.9	5.2	5.1
175									6.9	6.9

* Recommended loss in friction head per 100'.

The house is equipped with 10, 15, and 20 amp separate circuit breakers at 1/60/115 volts. Local codes allow 1-1/4" solid size, plastic PVC pipe, but the customer wants a minimum tank retention volume of 30 gallons. The customer is also planning to add a basement shower, water softener, and service sink with floor drain.

SOLUTION

I. GPM REQUIRED — Determine the Fixture Units (Fig. A).

Qty.	Fixture	Total Fixture Units
2	Bathroom groups (flush tank)	12
1	Half bath — lavatory sink w/1-1/2" plug, water closet (flush tank) (1 + 4)	5
1	Dishwasher — domestic	2
1	Washing machine	2
1	Laundry tub	2
1	Kitchen sink with waste grinder	3
1	Bar sink (unlisted 1-1/4")	1
FUTURE EXPANSION		
1	Shower stall	2
1	Water Softener	4
1	Service sink w/drain	3
TOTAL		36

Since the bathroom group has flush tanks, select the lower plotted line (Fig. B) and determine GPM capacity as a function of 36 Fixture Units.

The SYSTEM CAPACITY is approximately 19 GPM. Note that if we didn't consider future expansion, the Fixture Units would be 27 and the system capacity 17 GPM.

II. TDH REQUIRED — Refer to layout sketch (Fig. D). The static head or lift in this example problem is 12 feet. Depending on the GPM flow, pipe size and pipe material, all straight pipe, fittings, valves, etc. have a friction factor which must also be considered. These friction factors are converted to, and expressed as, equivalent feet of straight pipe. These are then totalled and translated to Friction head. This reduces to four basic steps:

A. Determine the discharge pipe size. In order to ensure sufficient fluid velocity to carry solids, (generally accepted to be 2 feet per second), flows should be at least:

- 9 GPM through 1-1/4" pipe
- 13 GPM through 1-1/2" pipe
- 21 GPM through 2" pipe
- 30 GPM through 2-1/2" pipe
- 46 GPM through 3" pipe

In this example problem, we will use the 1-1/2" diameter pipe (due to solid size and relatively short length).

B. The length of the discharge piping is measured from the discharge opening of the pump to the point of final discharge, following all contours and bends. In this example, total pipe length is 243 feet of 1-1/2" pipe.

C. To determine the equivalent of discharge piping represented by fittings and valves, refer to Figure C and total all values. Add this to the measured length of discharge pipe. Although not specifically shown in Figure D, the discharge piping has the following:

Butler Creek Farm, Inc.
P.O. Box 34
Reedsport, Oregon 97467

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WATER RESOURCES DEPT.
SALEM, OREGON

To Whom it May Concern;

Butler Creek Farm, Inc. has "Century Farm" status granted by the Oregon Historical Society to M.M. and Mary E. Melvin. This means it has been continuously operated as a farm by the Melvins and then by their direct descendants since it's founding in 1881. In about 1906, the water source and system that currently serves the house and barns at Butler Creek Farm was first developed by Albert Melvin, son of the original owners. He piped water to the floathouse in which he lived and to the nearby livestock pens and barns. Several boathouses and livestock barns have replaced the original ones in the same locations and have continued to use the same water source. This creek eventually flows into Butler Creek about $1\frac{1}{2}$ miles below the head of tidewater.

The house further up the Umpqua River was originally part of a separate farm owned by the Maceys, a predominately Native American family. They lived there before the Melvins bought the adjacent land in 1881. A daughter, Annie, built the house on the present site and developed the water system from two small creeks that flow into the Umpqua River about 15 miles below the head of tidewater. These creeks are still used to supply water to the house and livestock which are now part of Butler Creek Farm, Inc. They originate on our land and flow into the tidal river directly from our property which extends to mean low water according to our deeds.

I, Margaret Seymour Wade, the granddaughter of M.M. and Mary E. Melvin, was born in Gardiner, Oregon in 1902. Butler Creek Farm, Inc. is owned by my three daughters having acquired it through me after my mother purchased it from the other heirs. I have been on the property in some capacity for part of every year of my life. I certify that these statements are true, being of sound memory this date of December 18, 1992.

Margaret Seymour Wade
Margaret Seymour Wade

Stuntzner Engineering & Forestry

ENGINEERING

*

LAND SURVEYING

*

FORESTRY

PLANNING * WATER RIGHTS

705 South 4th Street - Post Office Box 118

Coos Bay, Oregon 97420

Phone (503) 267-2872 Fax (503) 267-0588



TO Chuck Cates

AT Douglas County Planning Dept.

SUBJECT Butler Creek Farm, Inc.

DATE 12/22/92

Gentlemen:

Attached are the Description of Water Use and Land Use Information forms for the Butler Creek Farm, Inc. Water Rights in T.L. 2300

Assessor map T21 -R and in the NE 1/4 of the SE 1/4 of Section 36, T21S, R12W.

If you could sign & send the "Receipt for Request for Land Use Information" form to our office at your earliest convenience, it would be greatly appreciated.

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WATER RESOURCES DEPT.
SALEM, OREGON

Very Truly Yours,

DATE

SIGNED

Keith Johnke

Land Use Information Form: Permits, Hydroelectric Licenses, Water Uses In Addition to Classified Uses

This information is needed to determine compatibility with local comprehensive plans as required by ORS 197.180. The Water Resources Department will use this and other information to evaluate the water use application. **DO NOT FILL OUT THIS FORM IF water is to be diverted, conveyed, and/or used only on federal lands.**

RECEIVED

Applicant's Name: Butler Creek Farm, Inc. DEC 30 1992
 Address: PO. Box 34
 City: Reedsport State: OR Zip: 97467 Day Phone: 271-3417
 WATER RESOURCES DEPT. SALEM, OREGON

Please provide information as requested below for all tax lots on or through which water will be diverted or used. (Attach extra sheets as necessary.) Applicants for municipal use, or irrigation uses within irrigation districts, may substitute existing and proposed service area boundaries for the tax lot information requested below.

Tax Lot or Local I.D.#	Plan Designation/Zoning (e.g. Rural Residential/RR-5)	Check All That Apply		
		Water Diverted	Water Conveyed	Water Use
<u>TL200 21-11</u>		<u>X</u>	<u>X</u>	<u>X</u>
<u>NE 1/4, SE 1/4 of Section 36, T21S, R12W</u>			<u>X</u>	<u>X</u>

Please list all counties and cities within which water is proposed to be diverted, conveyed, and/or used. Douglas County

The following section must be completed by a planning official from each county and city listed unless your project will be located entirely within city limits. In this case, only the city planning agency must complete this form. Please request extra forms as needed.

For Local Government Use Only

Local government planning officials are to complete the remainder of this form. If this form can not be completed while the applicant waits, please sign and detach the receipt as instructed below. Please mail the completed form directly to the Water Resources Department (3850 Portland Rd. NE, Salem, OR, 97310) within 60 days of the date of receipt as shown below. If the form is not completed within 60 days, the Department may take action to approve the water use.

a) Check the appropriate box below and provide requested information.

Land uses to be served by proposed water uses (including proposed construction) are allowed outright or are not regulated by your comprehensive plan. Cite applicable ordinance section(s): _____ . Go to section b) on reverse side.

Land uses to be served by proposed water uses (including proposed construction) involve discretionary land use approvals as listed in the table below. **Note: Please attach documentation of applicable local land use approvals which have already been obtained. (Record of Action plus any accompanying findings is sufficient.)**

Type of Land Use Approvals Needed (e.g.: plan amendments, rezones, conditional use permits, etc.)	Cite Most Significant, Applicable Plan Policies & Ordinance Section References	Please check the box that applies:		
		Already Obtained	Already Denied	Being Pursued Satisfactorily

Description of Water Use

Note to Applicant: This sheet will provide local planning staff with a basic description of your proposed water use. Please fill out this sheet before bringing the attached land use form to your local planning office. It will help local planning offices complete your land use information form quickly.

Note to Local Planning Officials: Please initial this sheet. Do not separate it from the land use information form. If needed, please make a separate copy for your records.

Applicant Name: Butler Creek Farm, Inc
 Address: P.O. Box 34
Reedsport, OR 97467
 Phone: 271-3417 + Judy Dixon

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WATER RESOURCES DEPT.
SALEM, OREGON

Please indicate what you will use the water for. Check all boxes that apply and fill in the blanks with key characteristics of the project

Irrigation (crop type, golf course, nursery or greenhouse): _____

Livestock (type of livestock, feedlot, slaughterhouse): 100 cattle

Residential (# units, single or multi-family, # lots if partition or subdivision): 2 single family dwellings including 1/2 acre of lawn and garden irrigation.

Commercial (i.e., retail, office, restaurant, gas station, hotel, service, etc.): _____

Industrial (i.e., factory, pulp mill, research and development, processing, etc.): _____

Institutional (i.e., school, library, etc.): _____

Mining (aggregate, metal, open pit, placer, etc.): _____

Recreation (park, campsite, pond, etc.): _____

Fish and Wildlife (pond, hatchery, etc.): _____

Hydropower (dam, reservoir, power generating or transmitting facilities): _____

Other (Name and list key characteristics): _____

Indicate sources for the proposed water use below:	Indicate the estimated quantity of water the use will require.
<input checked="" type="checkbox"/> Surface Water Name sources: <u>Unnamed Spring #1</u> <u>Unnamed Spring #2</u>	<u>.0354</u> Cubic feet per second. _____ Gallons per minute. _____ Acre-Feet
<input type="checkbox"/> Reservoir or pond	
<input type="checkbox"/> Ground Water	

BARGAIN AND SALE DEED

11-22-92

DEC 30 1992

WATER RESOURCES DEPT.
SALEM, OREGON

MARGARET S. WADE, Grantor, conveys to BUTLER CREEK FARM, INC., a corporation, Grantee, the following described real property:

Lot 10, Section 31, Township 21 South, Range 11 West, Willamette Meridian; Lots 19 and 20, Section 32, Township 21 South, Range 11 West, Willamette Meridian, all in Douglas County, Oregon.

ALSO: E-1/2 of SW-1/4; NW-1/4 of SE-1/4; SW-1/4 of NE-1/4 of Section 30, Township 21 South, Range 11 West of the Willamette Meridian; Lots 1, 2, 3, 4, 5, 6, 7 and 8 in Section 36, Township 21 South, Range 12 West of the Willamette Meridian.

Tax Account No. 1801.00

ALSO: Lots 5, 6, 9, 12 and 13, Section 31, Township 21 South, Range 11 West EXCEPTING THEREFROM: Beginning at the southwest corner of Lot 5 of Section 31, Township 21 South Range 11 West of the Willamette Meridian at the meander corner on range line between Sections 31 and 36 in Township 21 South Ranges 11 and 12 West, running thence North 37° East, 3.40 chains; thence North 58° 15' East, 17.25 chains to the East boundary of said Lot 5; thence South 11.88 chains to the Southeast corner of said Lot 5, thence West 16.75 chains to the place of beginning, the land excepted containing 11.08 acres, more or less.

No cash consideration is being paid for this deed, the full consideration being an exchange of other property.

Until change is requested, all tax statements are to be sent to the following address: P. O. Box 144, Reedsport, Ore. 97467.

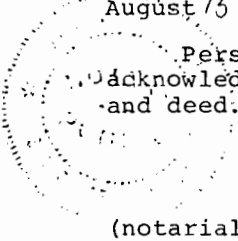
Dated this 15 day of August, 1975

Margaret S. Wade

STATE OF OREGON)
) ss:
County of Coos)

August 15, 1975.

Personally appeared the above named MARGARET S. WADE and acknowledged the foregoing instrument to be her voluntary act and deed. Before me:



John O. [Signature]
Notary Public for Oregon
My Commission expires: *MAY 7, 1979*

(notarial seal)

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WATER RESOURCES DEPT
SALEM, OREGON

BARGAIN AND SALE DEED

MARGARET S. WADE, formerly Margaret S. Hollinga, and formerly Margaret S. Schalburg, Grantor, conveys to BUTLER CREEK FARM, INC., a corporation, Grantee, the following described real property:

Lots 1, 2 and 3, Section 31; that part of Lot 5, Section 31: Beginning at Southwest corner of Lot 5 at the meander corner on the range line between Ranges 11 and 12 on the North Bank of the Umpqua River, running thence North 37° East 3.40 chains; thence North 58° 15' East 17.25 chains to the East boundary of said Lot 5; thence South 11.88 chains to Southeast corner of said Lot 5; thence West 16.75 chains to place of beginning; all in Township 21 South, Range 11 West of Willamette Meridian, Douglas County, Oregon.

Also beginning at Northwest corner of Lot 4, Section 32, Township 21 South, Range 11 West of Willamette Meridian; thence East 200 feet; thence South approximately 500 feet to North Bank of Umpqua River; thence Westerly along said river bank 200 feet, more or less, to section line between Sections 31 and 32; thence North along said section line to place of beginning, being in Lot 4, Section 32; all being in Township 21 South, Range 11 West of Willamette Meridian, in Douglas County, Oregon.

No cash consideration is being paid for this deed, the full consideration being an exchange of other property.

Until a change is requested, all tax statements are to be sent to the following address: P. O. Box 144, Reedsport, Ore. 97467.

Dated this 15 day of August, 1975.

Margaret Wade

STATE OF OREGON)
) SS.
County of Coos)

August 15 1975.

Personally appeared the above named MARGARET S. WADE, formerly Margaret S. Hollinga, and formerly Margaret S. Schalburg, and acknowledged the foregoing instrument to be her voluntary act and deed. Before me:

Allen O. [Signature]
Notary Public for Oregon
My Commission Expires: [Date]

(Notarial Seal)

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75579

KNOW ALL MEN BY THESE PRESENTS, That I, MORELL F. MELVIN, also known as Morell Fullerton Melvin, an unmarried man, being the sole heir and legatee of Milan Morell Melvin, also known as M. M. Melvin, deceased, for and in consideration of the sum of Five Thousand (\$5,000.00) Dollars to me paid by Eleanor Marion Seymour, the receipt of which is hereby acknowledged, do bargain, sell and convey unto ELEANOR MARION SEYMOUR, who sometimes signs her name Marion E. Seymour, and whose name also appears as Marion M. Seymour, all of my right, title and interest in and to the estate of the said Albert B. Melvin, deceased, now in process of probating in Douglas County, Oregon, and in and to all of the assets of said estate, including among other things my share of the cash now on hand, my interest in the livestock and farm equipment now on hand, my share of the stock in Melvin Estate, Incorporated, an Oregon corporation, and my share in all of the real property which was owned by Albert B. Melvin in his lifetime, including, among other real property, the following:

S $\frac{1}{2}$ of SW $\frac{1}{4}$; SW $\frac{1}{4}$ of SE $\frac{1}{4}$, Section 23, Township 19 S. R. 10 W., W. M., being 120 acres more or less in Douglas County, Oregon;

NE $\frac{1}{4}$ of NW $\frac{1}{4}$, Section 26, Township 19 South, Range 10 West, W. M., being 40 acres more or less in Douglas County; and

Lot 10, Section 31, Township 21 South, Range 11 West, W. M.; Lots 19 and 20, Section 32, Township 21 South, Range 11 West, W. M., all in Douglas County, Oregon.

And I hereby authorize and empower the administrator of the estate of Albert B. Melvin, deceased, to assign to the said Eleanor Marion Seymour all of my interest in the assets of the estate of Albert B. Melvin, deceased.

TO HAVE AND TO HOLD the above described and granted premises, and all other assets of the estate of Albert B. Melvin, deceased, not specifically named herein, unto the said



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Eleanor Marion Seymour, her heirs and assigns forever.

And I, the grantor above named, do covenant to and with the above named grantees, her heirs, executors and administrators, shall warrant and defend the above described and granted premises and personal property to the said Eleanor Marion Seymour, her heirs and assigns forever, against the lawful claims and demands of all persons claiming by, through or under me.

I, the undersigned, also grant, bargain, sell and convey unto the said Eleanor Marion Seymour, all of my right, title and interest in and to the following described premises, situate in County of Douglas and State of Oregon, to-wit:

E $\frac{1}{2}$ of SW $\frac{1}{4}$; NW $\frac{1}{4}$ of SE $\frac{1}{4}$; SW $\frac{1}{4}$ of NE $\frac{1}{4}$ of Section 30, Township 21 South, Range 11 West of the Willamette Meridian;

Also: Lots 1, 2, 3, 4, 5, 6, 7 and 8 in Section 36, Township 21 South, Range 12 West of the Willamette Meridian;

Also Lots 5, 6, 9, 12 and 13, Section 31, Township 21 South, Range 11 West, EXCEPTING therefrom: Beginning at the southwest corner of Lot 5 of Section 31, Township 21 South, Range 11 West of the Willamette Meridian at the meander corner on range line between Sections 31 and 36 in Township 21 South, Ranges 11 and 12 West, running thence North 37° East, 3.40 chains; thence North 58° 15' East, 17.25 chains to the East boundary of said Lot 5; thence South 11.88 chains to the Southeast corner of said Lot 5, thence West 16.75 chains to the place of beginning, the land excepted containing 11.08 acres, more or less.

WITNESS my hand and seal this 10th day of March, 1948.

Signed in Presence of:

[Signature] [Signature] (SEAL)

STATE OF OREGON }
County of Clackamas } ss.

BE IT REMEMBERED, That on this 10th day of March, 1948,

Deed - 2