

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 81-7183

Exam Date: 07/29/2008

1. Current Owner: JOHN M CALLAWAY
6161 HWY 12
KOOSKIA ID 83539
(208) 926-4468

2. Accompanied by: John M. Callaway

Phone No: (208) 926-4468

Address: current address above, same as water use location

Relationship to Permit Holder: same

3. SOURCE

MIDDLE FORK CLEARWATER RIVER

TRIBUTARY

CLEARWATER RIVER

B. OVERLAP REVIEW

1. Other water rights with the same place of use: 81-10074, domestic (in-home), ground water
2. Other water rights with the same point of diversion: none

C. DIVERSION AND DELIVERY SYSTEM1. LOCATION OF POINT(S) OF DIVERSION:

MIDDLE FORK CLEARWATER RIVER L5 (SW 1/4 NW 1/4) Sec. 6, Twp 32N, Rge 05E, B.M. IDAHO County

Method of Determination: GPS, GIS

2.

PLACE OF USE: IRRIGATION

Twp Rge Sec	NE				NW				SW				SE				Totals
	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
32N 05E 6							0.5										0.5
							L 5										

Total Acres: 0.5

Method of Determination: GPS, GIS, Satellite Imagery

3. ☒ Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable. **SEE PAGE 3**
- ☒ Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater. **ATTACHMENT A**
- ☒ Aerial Photo Attached (required for irrigation of 10+ acres). **ATTACHMENT A**
- ☒ Photo of Diversion and System Attached **ATTACHMENT B**

4.

<u>Well or Diversion ID No.*</u>	<u>Motor Make</u>	<u>Hp</u>	<u>Motor Serial No.</u>	<u>Pump Make</u>	<u>Pump Serial No. or Discharge Size</u>
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

*Code to correspond with No. on map and aerial photo

D. FLOW MEASUREMENTS

1.

<u>Measurement Equipment</u>	<u>Type</u>	<u>Make</u>	<u>Model No.</u>	<u>Serial No.</u>	<u>Size</u>	<u>Calib. Date</u>
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

2. Measurements: PITOT TUBE WITH PRESSURE GAGE INSERTED INTO FLOW AT EACH SPRINKLER HEAD. SPRINKLER FLOW OPENING IS $\frac{1}{8}$ " DIAMETER. PRESSURE CONSISTENTLY MEASURED DURING OPERATION AT 34 PSI.

E. FLOW CALCULATIONS

____ Additional Computation Sheets Attached

Measured Method: APPLICATION OF TORRICELLI'S THEOREM: $v = \sqrt{2gh}$
 WHERE, $g = 32.15 \text{ ft/s}^2$, $h = 34 \text{ psi} \rightarrow 34 \text{ psi} \times 2.308 \text{ ft/psi} = 78.47 \text{ ft}$

$$V = \sqrt{2(32.15)(78.47)} = 71.03 \text{ ft/s}$$

$$A = \pi r^2 = \pi \left(\frac{1}{16} / 12 \text{ in/ft} \right)^2 = 8.52 \times 10^{-5} \text{ ft}^2$$

WHERE, $r = \frac{1}{16}$ "

$$Q = VA = 71.03 \text{ ft/s} \times 8.52 \times 10^{-5} \text{ ft}^2 = 0.006 \text{ ft}^3/\text{s} \text{ per sprinkler}$$

$$Q_{\text{MAX}} = 0.006 \text{ cfs} \times 3 \text{ sprinklers} = 0.018 \text{ cfs} \cong 0.02 \text{ cfs}$$

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation: Not applicable

$$V_{\text{I.R.}} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) =$$

$$V_{\text{D.R.}} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 =$$

$$V = \text{Smaller of } V_{\text{I.R.}} \text{ and } V_{\text{D.R.}} =$$

2. Volume Calculations for Other Uses: Domestic

Domestic use is irrigation of 0.5 ac associated with a home.

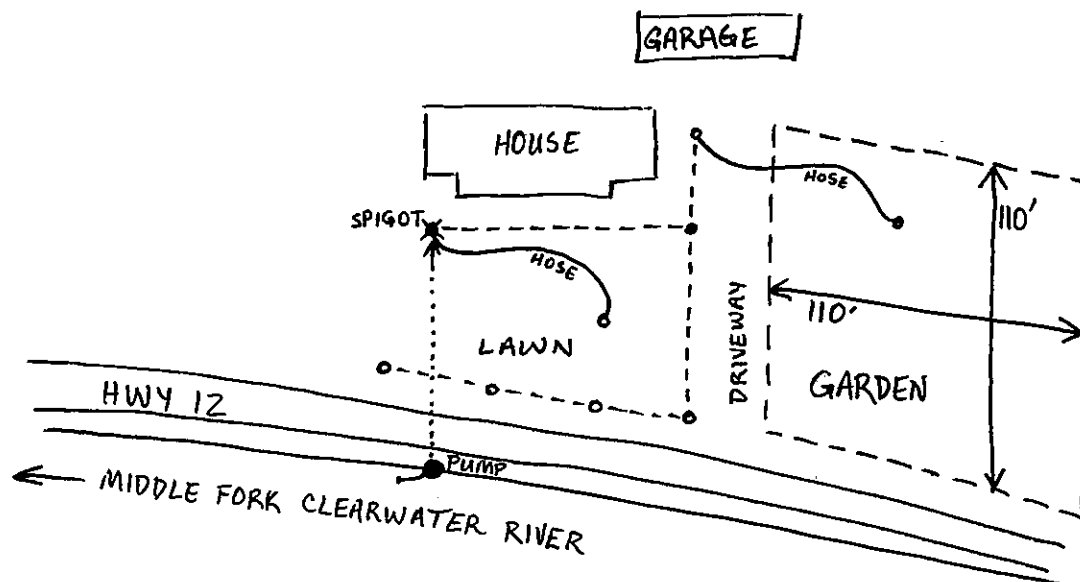
Current Department standard = 0.6 acre-feet per year

G. NARRATIVE/REMARKS/COMMENTS

A 2-hp Wayne lawn sprinkling pump rests on the north bank of the Middle Fork Clearwater River about 100 feet south of the place of use. Water is pumped through a 2-inch diameter intake line, passes through the pump, reduces to a 1-inch diameter delivery line, and is piped under the highway to a sprinkler system at the place of use. The total lift from the river is approximately 20 ft. The system is controlled at a spigot and valve box near the front of the house. Six Rainbird impact sprinklers with a 1/8" opening and a hose with an identical sprinkler head are used to irrigate a 1/4-acre lawn. Hoses are used to irrigate a 1/4-acre garden. Three sprinklers operate at a time. During operation, I consistently measured 34 psi at each sprinkler nozzle. Applying Torricelli's Theorem, the maximum diversion rate is 0.02 cfs.

Permit 81-7183 was issued for domestic use at one home. In-home water is provided by a ground water well under water right no. 81-10074, though Mr. Callaway has not submitted an ownership change notice for that right. Water from the Middle Fork Clearwater River is not used for in-home domestic purposes, only for irrigation of the lawn and garden. When the permit was issued, there was a moratorium in place on new consumptive uses. This permit would not have been issued if the use was for irrigation. Since this permit was approved for domestic use, the license should be issued for domestic use and limited to the Department's standard annual diversion volume for irrigation associated with a home, 0.6 acre-feet per year.

Have conditions of permit approval been met? ☒ Yes ☐ No

**H. RECOMMENDATIONS****1. Recommended Amounts**

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
DOMESTIC	01/01 to 12/31	0.02 CFS	0.6 AF
Totals:		0.02 CFS	0.6 AF

2. Recommended Amendments

☐ Change P.D. as reflected above ☐ Add P.D. as reflected above ☒ None

☐ Change P.U. as reflected above ☐ Add P.U. as reflected above ☐ Other

I. AUTHENTICATION

Field Examiner's Name Aaron Marshall Date 09/12/08
 Reviewer _____ Date _____

Attachment A

Place of Use Map for Permit 81-7183



0 50 100 200 Feet

Legend

- Point of Diversion
- Place Of Use Boundary



Attachment B
Photographs of Diversion, Delivery System, and Irrigation



FIGURE 1: Lawn with sprinklers in operation. View facing south.

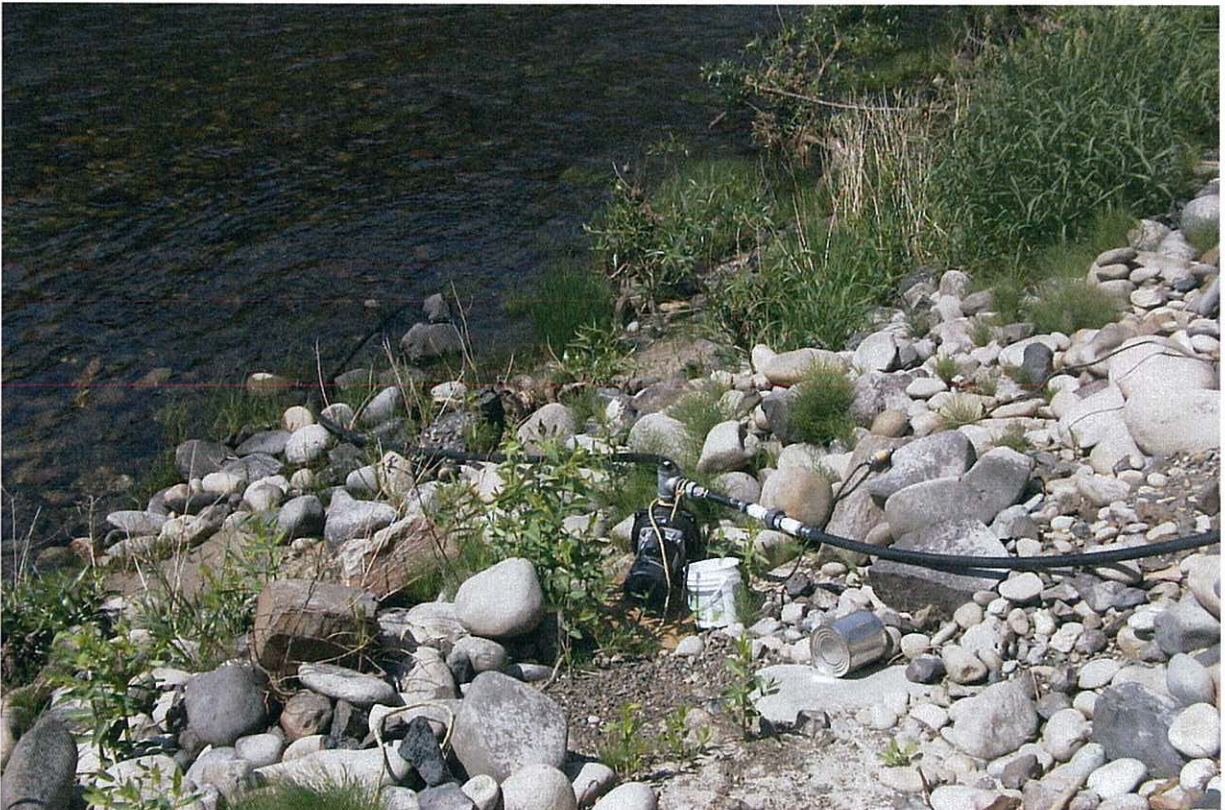


FIGURE 2: Pump on river bank.



FIGURE 3: Close-up of pump.



FIGURE 4: Garden with garage in background. View facing north.