

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 96-9489

Exam Date: 5/23/2013

1. Current Owner: ANDREW WAITE

And/Or

ANNALEE WAITE
3739 KNOLLWOOD ST
HOUSTON TX 77019
(713)907-7226

2. Accompanied by: Dan McMahonPhone No: (208) 290-8559Address: UnknownRelationship to Permit Holder: Property Manager3. **SOURCE**

PEND OREILLE LAKE

TRIBUTARY

PEND OREILLE RIVER

B. OVERLAP REVIEW

1. Other water rights with the same place of use: None
2. Other water rights with the same point of diversion: None

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

PEND OREILLE LAKE L1 NE1/4NE1/4 Sec. 32, Twp 57N, Rge 01W, B.M. BONNER County

Method of Determination: GPS and Visual Inspection

2.

PLACE OF USE: IRRIGATION

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	
57N	01W	32	1.4																1.4
			L 1																

Total Acres: 1.4

Method of Determination: GIS and Visual Inspection

3. YES Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable.
YES Aerial Photo Attached (required for irrigation of 10+ acres).
YES Photo of Diversion and System Attached

4.

Well or Diversion Identification No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
Lake Pump	Unknown	3	EDW-WP-S-5	Unknown	1.5 inch

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

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
NONE						

2. Measurements: The pump wasn't operating at the time of our field visit. This exam was done early in the year, so irrigation wasn't needed.

E. FLOW CALCULATIONSX Additional Computation Sheets Attached

Measured Method:

Theoretical Calculation = 0.09 cfs

1.4 acres X 0.03 cfs/ac standard = 0.04 cfs

Permit allowed on 10.3 acres = 0.20 cfs

I recommended 0.04 cfs for this permit. The standard of 0.02 cfs was used at permitting, but the owners were intending to irrigate a large area. The tax lot information states that this lot is only a 9.8 acre lot, so I am not sure where the owners came up with the 10.3 acres they requested in the permit application.

F. VOLUME CALCULATIONS**1. Volume Calculations for Irrigation:**

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 1.4 \text{ acres irrigated} \times 3.0 \text{ af/ac} = 4.2$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.04 \text{ cfs} \times 214 \text{ days} \times 1.9835 = 16.9 \text{ af}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = \text{No Volume Required Surface Water Irrigation Rights Do Not Require a Volume}$$
2. Volume Calculations for Other Uses:

There are no other uses.

↑
I misunderstood
the requirement
for volume on
surface water irrigation
water rights - a volume
of 4.2 af is required
Q.A.V. 11-7-13

G. NARRATIVE/REMARKS/COMMENTS

The water for this system is diverted out of Pend Oreille Lake from a 3 Hp pump located under the boat dock. From the pump, the water travels in a southwesterly direction to a control box that sends it to the buried sprinkler system. The control box has various valves, a pressure gauge and a small pressure tank. The power panel for this system is located in a bench by the beach. You take the back of the bench off to get to the power panel.

The area irrigated is just around the home. It looks as though they thought to do more, but this property is on a fairly steep grade. They would have needed a much bigger pump and possibly some booster type pumps to take water clear to the top of the hill. The permit was for 10.3 acres, but the tax lot is only 9.8 acres. The 9.8 acres is also shown on the plat map supplied with the applications. This was just a math error. The permit needed to be reduced.

The application for permit has the season of use as 4/1 to 10/31, but the permit allowed a season of use of 1/1 to 12/31. This is an irrigation right, and would only be used during the irrigation season. The application was correct, the season of use should be 4/1 to 10/31. Therefore I corrected the season of use.

Condition R62 was used on the permit, which is the standard for irrigation over 5 acres. The actual irrigation was less than 5 acres, so I changed the condition to reflect a 0.03 cfs rate per acre as is allowed on irrigation uses under 5 acres. Only 1.4 acres is being irrigated. I left condition 004 on the license, since the pump is in the lake, and the lake could be owned by Idaho Department of Lands or the Indian Tribes in that area. I felt it was wise to leave the easement condition on the license.

Have conditions of permit approval been met? X Yes No

H. RECOMMENDATIONS**1. Recommended Amounts**

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
IRRIGATION	04/01 to 10/31	0.040 CFS	4.2 ac
Totals:			4.2 ac

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 Daniel A. Nelson – Staff Hydrologist

Field Examiner's Name Daniel A. Nelson Date 11-6-2013

Reviewer Date

4.2 ac
4.2 ac
A
400 NOT
ON PAGE 2
D.A.N.
11-7-13

State of Idaho
Department of Water Resources
Field Exam Map
96-9489

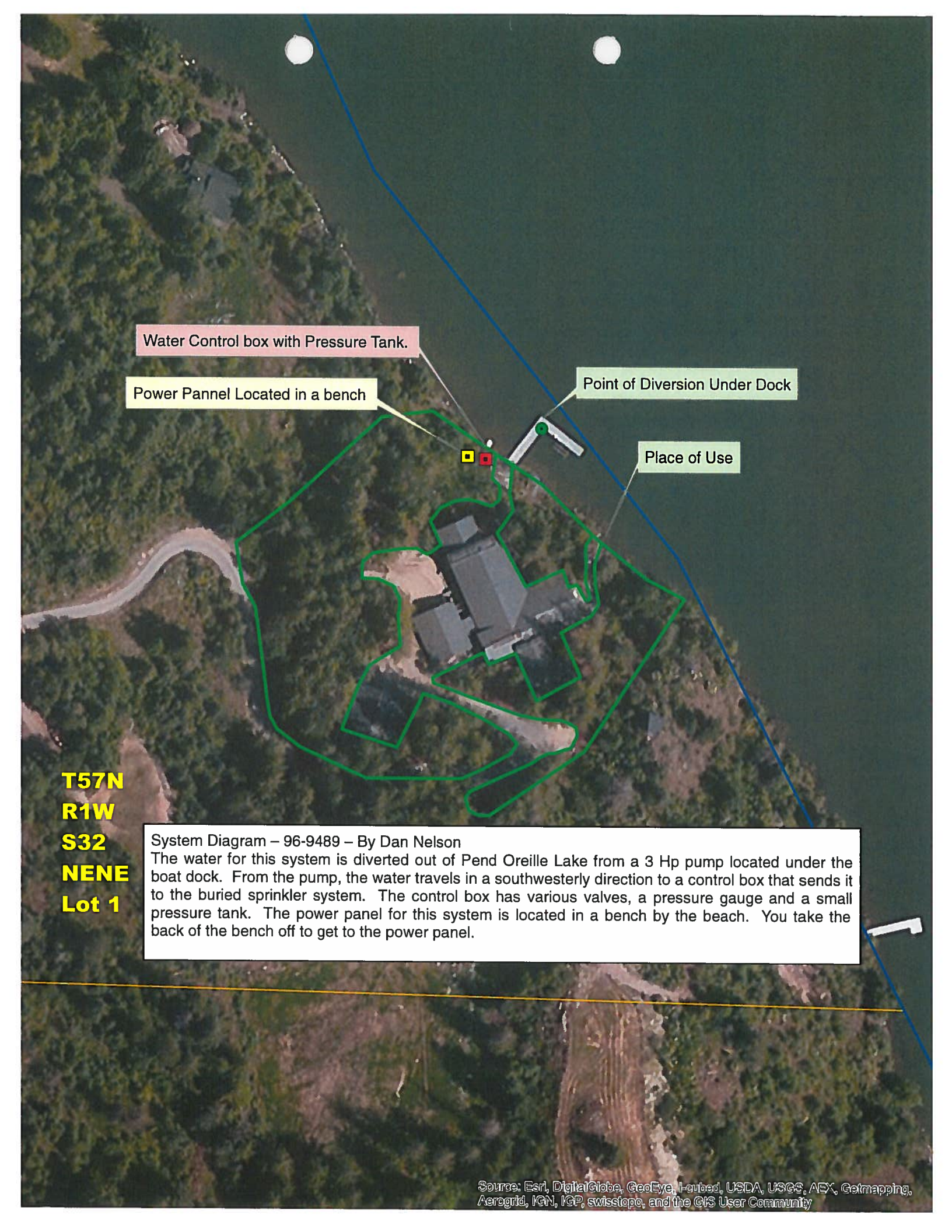
This map depicts the IRRIGATION place of use boundary for this water right at the time of this approval and is attached to the approval document solely for illustrative purposes.



-  Point of Diversion
-  Place Of Use Boundary
-  Townships
-  PLS Sections
-  Quarter Quarters

0 0.0125 0.025 0.05 Miles





Water Control box with Pressure Tank.

Power Pannel Located in a bench

Point of Diversion Under Dock

Place of Use

T57N
R1W
S32
NENE
Lot 1

System Diagram – 96-9489 – By Dan Nelson

The water for this system is diverted out of Pend Oreille Lake from a 3 Hp pump located under the boat dock. From the pump, the water travels in a southwesterly direction to a control box that sends it to the buried sprinkler system. The control box has various valves, a pressure gauge and a small pressure tank. The power panel for this system is located in a bench by the beach. You take the back of the bench off to get to the power panel.

THEORETICAL HORSEPOWER EQUATION WORKSHEET (cjh 1/92)

Water Right No.: 96-9489
 Reviewer: Dan Nelson
 Date of Review: 5/23/2013

P/D No.:	Senerio 1	Senerio 2	Senerio 3	
PUMP HORSEPOWER	3	3	3	
BOOSTER HORSEPOWER	0	0	0	
PUMPING LEVEL	100	100	100	
DISCHARGE PRESSURE	40	50	60	
RATE OF FLOW (cfs)	0.10	0.09	0.08	AVE
	43	38	35	39

The above calculates the formula =

$$Q = \frac{8.8 * (\text{Efficiency}) * \text{hp}}{\text{depth to water} + 2.31 * (\text{psi}) + \text{friction}}$$

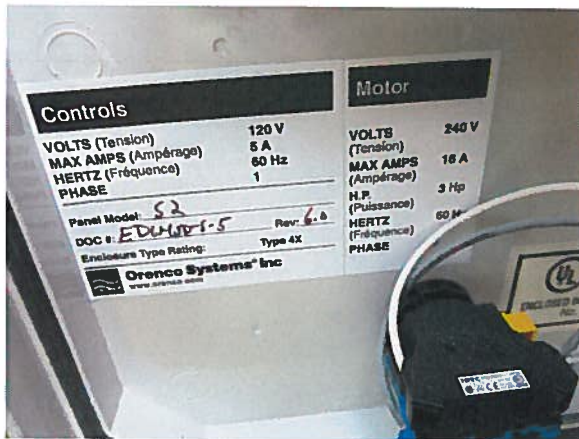
Assumptions: %70 efficiency.
 No Friction

Examiners Notes:

This is a 3 Hp electrical pump. The pressure was estimated using the standard pressures with a pressure tank. I calculated the lift as the elevation difference from the pump to the top of the irrigated land per the topographical maps. The pump output provides more than enough diversion rate to irrigate the 1.4 acres of lawn that is actually irrigated.

PHOTOGRAPHER AND DATE OF PHOTOS DANIEL A NELSON 5/23/2013

FILE NUMBER 96-9489



This first photo shows the power box for the pump. The panel shows this pump to be a 3 Hp pump. From Orenco Systems Inc.



The second photo shows the location of the pump below the boat dock. The pump is in a 3 inch PVC sleeve with 1/8 cuts in the pipe to address the fish screen requirements. This is a standard practice for this area.



This final picture shows where the pipeline from the pump connects into the sprinkler system. There is a small pressure tank that is used to regulate the pressure of the buried sprinkler system. This is also a standard practice in this area due to the elevation shifts from one sprinkler zone to the next.