

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
IN-OFFICE REVIEW/BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATIONPermit No: 96-9536

Exam Date: 1/20/2016

1. Does this qualify for an in-office field exam (IDAPA 035.02.r)? X Y N
- Irrigation of 5 acres or less
 - Storage of up to 14.6 AF for stockwater purposes only
 - Any use other than irrigation or storage, if the combined diversion rate is 0.24 cfs or less
 - Other < >

2. Current Owner: Name: Kenneth Gold and Maureen Gold
 Owner of Record Correct? X Y N
 Address of Record Correct? Y N
 If No: Address

Tax lot data shows the Gold's as the owners of the property.

3. Beneficial Use Fees have been paid: X Y N Receipt No: C0

4. SOURCE TRIBUTARY
 St Joe River Coeur D Alene Lake

Method of Determination: GIS and Taxlot Data

Change in Source: Y X N

B. OVERLAP REVIEW

1. Other water rights with the same place of use: NO Overlap

Water Right No.	Source	Purpose of Use	Basis
NONE			

Comments: There are no other water rights found in this government lot.

2. Other water rights with the same point of diversion: NO Overlap

Water Right No.	Source	Purpose of Use	Basis
NONE			

Comments: There are no other water rights found in this government lot.

C. DIVERSION AND DELIVERY SYSTEM**1. LOCATION OF POINT(S) OF DIVERSION:**

Source	Govt. Lot	¼	¼	¼	Sec.	Twp.	Rge.		County
Lake Pend Oreille	4		SE	SW	15	54N	1W	B.M.	Bonner
								B.M.	
								B.M.	

Method of Determination: GIS and Tax Lot data.Change in POD? X N Amendment Required? X N**2. PLACE OF USE:** 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	
54N	1W	15												D					
		Lot #												4					
Total Acres =																			

Method of Determination: GIS and Tax Lot DataChange in POU? X N Amendment Required? X N Delivery System Diagram Attached (required). Indicate all major components and distances between components.

Indicate weir size/pipe as applicable.

 X Aerial Photo Attached (required for irrigation of 10+ acres). 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	Flint and Walling	1	Unknown	10gpm 15ST 3W SS	1 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: No measurement is required for an in-house exam, but a pump curve was found and a theoretical calculation was used to determine if the diversion rate is reasonable.

E. FLOW CALCULATIONS X Additional Computation Sheets Attached

Measured Method:

A theoretical analysis shows that a diversion rate of 0.05 cfs is possible with a 3/4 Hp pump. The owner supplied the horse power of the pump in the application for permit.

Maximum Capacity According to Pump Schematics = 0.03 cfs**Theoretical Calculation = 0.03 cfs****Permit allowed = 0.04 cfs**

I am recommending a diversion rate of 0.03 cfs, since it appears as though this pump is only designed to deliver 0.03 cfs for this type of usage.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = \underline{\quad X 3.5 \quad} = \underline{\hspace{2cm}}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = \underline{\quad X 214 \quad X 1.9835 \quad} = \underline{\hspace{2cm}}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = \underline{\hspace{2cm}}$$

2. Volume Calculations for Other Uses:

This is a domestic use. According to processing memo #22, and Domestic use for in-house and yard irrigation can have up to 1.2 acre feet of annual water use. I am recommending 1.2 af for this permit. The permit stated that domestic use would be for a Recreational Vehicle (RV) site. Aerial photos suggest a RV was on site at the time of the 2013 aerial photo. The application states that approximately 0.4 acres are irrigated. It is difficult to tell if any of the area around the RV site was irrigated, but there are several green areas that could be considered to be irrigated ground.

G. PURPOSE OF USEIrrigation X Y N # Stock Domestic # of Homes 1

Other: < >

Change in Purpose of Use? Y N Method of Determination: Taxlot data and conversations with owner.If Yes: From Use To Use Amount CFS AFA **H. NARRATIVE/REMARKS/COMMENTS**

This permit is qualifies for an in-house exam. The permit has a condition that the domestic use is for a RV Site, and 2013 aerial photos do show what appears to be an RV at this site. The irrigation is a little more difficult to determine, but there is an area along the road that appears to be greener than other areas in the aerial photo. There is also an area between the trees and the RV in the 2013 aerial photo that seems greener than some of the surrounding areas.

The permit holder states that the pump is encased in a 4" schedule 40 PVC pipe with a pump seal at one end of the pipe and a steel mesh pump screen at the other end. The permit holder also provided an invoice that shows a 4 inch well seal. The invoice doesn't mention the screen or the 4 inch PVC pipe, but it does show Miscellaneous Plumbing and Electrical Plumbing supplies. I am assuming that the 4 inch PVC is only a few feet long, so it would be included in the Miscellaneous Supplies.

All of the conditions on the permit will be carried forward to licensing, except for condition 2 (26A) which will be removed as is standard.

Have conditions of permit approval been met? X Yes No

I. 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	0.03 CFS	1.2 AF
	<u>Totals:</u>	0.03 CFS	1.2 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 ___ None

Other: < >

J. AUTHENTICATION – DANIEL A. NELSON – STAFF HYDROLOGIST

Field Examiner's Name  Date 2-25-16

Reviewer _____ Date _____

Permit 96-9536 -- By Dan Nelson -- 2013 Aerial Photo

The place of use and point of diversion are outlined in yellow below. The RV/home sits back in a set of trees, so it is hard to see from year to year. The 2013 aerial photos show the home best. The 2016 Google Map imagery also shows a home on the property.

Point of Diversion

RV/Home site

THEORETICAL HORSEPOWER EQUATION WORKSHEET (cjh 1/92)

Water Right No.: 96-9536
 Reviewer: Dan Nelson
 Date of Review: 2/25/2016

P/D No.:

PUMP HORSEPOWER
 BOOSTER HORSEPOWER

PUMPING LEVEL

DISCHARGE PRESSURE

RATE OF FLOW (cfs)

Scenario 1
1
0
120
40
0.03
13

Scenario 2
1
0
120
50
0.03
12

Scenario 3
1
0
120
60
0.02
11

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:

The owner provided the pump Hp power. I determined the lift based on the topographical lines in ArcMap. I used a standard pressure for domestic uses of 40 to 60 psi. Using this information, the maximum capacity of this system would be approximately 11 to 13 gpm, which falls in line with the pump information found for this pump online. I recommend this permit be licensed for a diversion rate not to exceed 0.03 cfs.

HP Size and Model No.	Stage	Weight		Discharge Pressure PSI	DEPTH TO WATER LEVEL IN FEET																									Max. Press.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
		Motor Type	Ship Wt.		20	40	60	80	100	120	140	160	180	200	225	250	275	300	350	400	450	500	550	600	650	700	800	900	Ft.	PSI																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
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NOTE: Pipe friction loss in drop pipe is not included in chart above.

1/2 thru 2 HP, 1 PH pumps feature Flint & Walling motors. For F&W pump ends with Franklin motor, please add an "M" prefix to callout number when ordering. Example: M4F10A05301

15gpm Max Capacity

$$15 / 448.8 = 0.03 \text{ cfs.}$$

The Maximum Capacity That This Pump can Produce is 0.03 cfs. Permit 96-9536
Daniel A. Nelson

2-18-2016.