

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

A. GENERAL INFORMATIONPermit No: 65-23738

Exam Date: 5/3/2019

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

2. Current Owner: Name: Kevin O Neil
- Owner of Record Correct? X Y N
- Address of Record Correct? Y N
- If No: Address

Tax Parcel data shows Kevin O Neil as the owner of the property.

3. Beneficial Use Fees have been paid: X Y N Receipt No: C104253

4. SOURCE**TRIBUTARY**

Payette Lake

North Fork Payette River

Method of Determination: GIS and Tax Parcel DataChange 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

Comments: There are number of water rights in this same area, but it doesn't appear as though any of them are a Direct Overlap of the property. According to the application for permit, there is a domestic well used for in-house use only, but is available as a backup water source if needed. There are no domestic water rights in the permit holder's name or that describe the parcel associated with this permit.

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

Water Right No.	Source	Purpose of Use	Basis
65-23737	Payette Lake	Irrigation	Permit

Comments: Water right permit 65-23737 is diverted from the same location, but is diverted by a different pump. Both rights are on the same Idaho Department of Lands permit, but both systems are connected together. Therefore, they are a common system using the same point of diversion. There are number of water rights in this same area, but it doesn't appear as though any of them are a Direct Overlap of the property. According to the application for permit, there is a domestic well used for in-house use only, but is available as a backup water source if needed. There are no domestic water rights in the permit holder's name or that describe the parcel associated with this permit.

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

Source	Govt. Lot	1/4	1/4	1/4	Sec.	Twp.	Rge.		County
Lake Diversion			NE	NW	35	19N	3E	B.M.	Valley
								B.M.	
								B.M.	

Method of Determination: GIS, Idaho Department of Lands Permit Application, and Tax Parcel 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	
19N	3E	35					0.1												0.1
		Lot #					1												
Total Acres =																			0.1

Method of Determination: GIS and Tax Lot Data (see narrative)Change 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
Submersible Lake Pump	Unknown	2.5			1 1/4 inch line per application for permit.

*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.

E. FLOW CALCULATIONSYES Additional Computation Sheets

Attached

Measured Method:

There was very little information in the file describing the pumping system for this permit, so a theoretical calculation using several assumptions to see if the flow rate seemed reasonable. I used the standard irrigation requirements allowed for the irrigation of property less than 5 acres of 0.03 cfs per acre allowed in Processing Administrative Memorandum #17.

Theoretical Calculation 0.10 cfs

Acre Limits = 0.1 acres X 0.03 cfs per acre = 0.003 cfs OR 1.367 gpm, which is not enough to operate a sprinkler system.
Permit allowed = 0.03 cfs OR 13 gpm

I am recommending a diversion rate of 0.03 cfs, since it was the amount recommended in the permit and developed by the permit holder. A typical irrigation zone for sprinkler for a home is generally 12 gpm per zone. By leaving the diversion rate at the permitted amount, it would allow the permit holder to properly operate their sprinkler system. If we reduce the diversion rate to the 1.367 gpm rate, they would only be able to operate very low flow sprinklers that are generally not used to irrigate such a large area.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 0.1 \text{ acres} \times 3 = 0.3 \text{ af}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.03 \text{ cfs} \times 200 \times 1.9835 = 11.9 \text{ af}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 0.3 \text{ af}$$

2. Volume Calculations for Other Uses:

N/A

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

Other: < >

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

There is a slight concern with the point of diversion. The system has two submersible pumps that are placed in the lake. The two pumps divert water from the lake into a common distribution box on the lake shore, where the two lines are connected together. One of the lines is the main pump for this permit and the other line is the main pump for permit 65-23737. The system is set up to allow either pump to be used if one of the pumps breaks down. Whereas the distribution box is on the shore of the lake, and the true point of diversion is the point where the water leaves the lake, I do not feel an amendment is necessary to describe two separate points of diversion. I have moved the point of diversion shown in the permit from the middle of the lake to the point where water is actually diverted from the lake at the distribution point. There is no need for an amendment to this permit.

The place of use for the permit included the tax parcel and more acres of irrigation were actually requested than was developed. This is a standard practice with most permits. The actual acres irrigated were 0.1 acres, and shown in the yellow border of the field exam maps. The actual irrigated acres is 0.1 acres. No other irrigation was found in the aerial imagery.

Another issue with this permit is the water supply for the in-house use. The permit states that there is a domestic well that supplies the home, and can be used for irrigation if Payette Lake water is not available. There are no water rights for domestic use that appear to be associated with this property, so I am assuming that the domestic use comes from an exempt well according to Idaho Code §42-227 and §42-111.

The proof of beneficial use stated that a fish screen was required. However, there are no fish screen requirements on the permit. The permit conditions did require a lockable headgate. I think they checked the wrong boxes and meant to check yes on the lockable headgate instead of the fish screen. Typically, these small diversions are either all on or all off, and the power panel can be locked, so there is a way to shut off and lock this device.

Condition R66 will be replaced with condition X31 which is used on rights less than 1 acre. Condition 121 will be changed to 103 at licensing as is standard. I debated on whether to carry condition X60 to licensing, since this condition is generally only used when there is a lot and block descriptor. However, it was on the permit, so I carried it forward to licensing to avoid any confusion.

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

I. RECOMMENDATIONS

1. Recommended Amounts

BENEFICIAL USE	PERIOD OF USE	DIVERSION RATE	ANNUAL VOLUME
Irrigation	04/15 to 10/31	0.03 CFS	0.3 AF
<u>Totals:</u>		0.03 CFS	0.3 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 – WATER RIGHT ANALYST 3

Field Examiner's Name  Date 5-6-19

Reviewer  Date 5/31/19

Permit 65-23738 – Field Exam Maps

The top 2013 aerial image shows the place of use and irrigated acres for this permit in the yellow border. The green border are the tax parcels. The yellow dot shows the point of diversion. The bottom picture is the 2017 Google Earth aerial image of the place of use. As you can clearly see the yellow border is the only area actually irrigated. The permit included all of the area within the tax lot (green borders) minus the driveway. The second Google Earth image clearly shows what is irrigated.



THEORETICAL HORSEPOWER EQUATION WORKSHEET (cjh 1/92)

Water Right No.: 65-23738
 Reviewer: Dan Nelson
 Date of Review: 5/6/2019

P/D No.:

PUMP HORSEPOWER
 BOOSTER HORSEPOWER

PUMPING LEVEL

DISCHARGE PRESSURE

RATE OF FLOW (cfs)

Scenario 1
2.5
0
40
40
0.12
52

Scenario 2
2.5
0
40
50
0.10
44

Scenario 3
2.5
0
40
60
0.09
39

AVE
 0.10
 45.12

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 an in-house field examination. The application for permit file states that a 2.5 Hp submersible pump is used to divert the water. The contour lines in GIS suggest that there is approximately 40 feet of lift from the water level of the lake to the upper end of the property. I used a standard of 40 to 60 psi normally set for domestic uses to estimate the pressure on the system. With this criteria, it appears as though this pump will produce between 0.09 and 0.12 cfs, dependent on the pressure required for an average of 0.10 cfs or 45 gpm. This seems reasonable for this type of system. The permit limits the diversion rate to 0.03 cfs, for 0.5 acres of yard. I only found 0.1 acres actually being irrigated. The permit allowed 0.03 cfs or 13 gpm. Home sprinkler systems are generally set up to operate at 12 gpm per zone, so I think we should keep the 0.03 cfs limitation even though the full number of acres are not being irrigated. It seems clear from the pump, that the system was designed for the 0.03 cfs diversion if not a bit more.