

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

A. GENERAL INFORMATIONPermit No: 96-9585

Exam Date: 8/30/2016

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: Alton J. and Leone K. Clark
- Owner of Record Correct? X Y N
- Address of Record Correct? Y N
- If No: Address

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

3. Beneficial Use Fees have been paid: X Y N Receipt No: C102415

4. **SOURCE** **TRIBUTARY**
- Pend Oreille Lake Pend Oreille River
- 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
96-8688	Lake Pend Oreille	Domestic	License

Comments: Water right 96-8688 already covers this use. The owner's wished to create 2 water systems, one for their home and one for their irrigation use. This permit is provides for the irrigation system, and permit 96-8688 provides for their in-house use. Water right 96-9303 is for a property to the west.

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

Water Right No.	Source	Purpose of Use	Basis
96-8688	Lake Pend Oreille	Domestic	License

Comments: Water right 96-8688 already covers this use. The owner's wished to create 2 water systems, one for their home and one for their irrigation use. This permit is provides for the irrigation system, and permit 96-8688 provides for their in-house use. Water right 96-9303 is for a property to the west.

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

Source	Govt. Lot	¼	¼	¼	Sec.	Twp.	Rge.		County
Irrigation Pump	2		NE	SE	2	56N	1E	B.M.	BONNER
								B.M.	
								B.M.	

Method of Determination: GIS and Tax Lot data. According to the application for permit, there are two pumps on this property. One is for the domestic in-house use and the other is for the irrigation use. Permit 96-8688 is supposed to be used for the in-house use only, and this permit for the irrigation use for the yard.

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	
56N	1E	2													D				
		Lot #													2				
Total Acres =																			

Method of Determination: GIS, County Plat Map, and Tax Lot Data The Department's parcel data shows the parcel straddling the line of section 2 and section 1. However, Bonner County Parcel data describes the parcel as 2- 56N-1E Luttons Lake Lots E2 of Lot 1 Less Road. Therefore, this parcel is only in Section 2 per county data.

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
Irrigation Pump	Unknown	5			

*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 theoretical calculation was done to determine it the use was reasonable.

E. FLOW CALCULATIONS X Additional Computation Sheets Attached

Measured Method:

The permit holder stated that they were going to use a 5 Hp pump, so I performed a theoretical calculation. This size pump can supply between 0.14 cfs and 0.18 cfs of water.

Theoretical Calculation = 0.14 cfs

Permit allowed = 0.04 cfs

I am recommending a diversion rate of 0.04 cfs, since this is the maximum diversion rate allowed by the permit. I am concerned that they could be pumping a great deal more than they allowed to by the permit, but I am limited to the maximum diversion rate allowed.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

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

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

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

2. Volume Calculations for Other Uses:

The permit application states that this permit was filed to have two separate systems, one for irrigation and one for the in-house use. License 96-8688 overlaps this permit and the application states that the system associated with 96-8688 will be used for the in-house use, and this permit will be used for the irrigation portion of the domestic use. According to Application Processing Administrative Memorandum #22, the annual volume should be limited to 0.6 af when the system isn't supplying both the in-house and the irrigation needs. Therefore, I recommending that this permit be limited to 0.6 af.

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

Other: < >

Change in Purpose of Use? Y NMethod 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 application for permit states that this permit was filed because the permit holder wanted to develop 2 water systems, one for his in-house use and one for his yard irrigation. The wanted to use the existing water right license for the in-house use and this permit for the yard irrigation. I have not seen this before, but I have discussed it with staff, and it was determined that we owe them a water right now that they have paid the fees. This permit should have been permitted as an irrigation use and not a domestic use.

I am extremely concerned that the application stated that they plan to use a 5 Hp pump, which suggests that they are either over pumping their water right, and/or they are actually irrigating more than ½ acre. I cannot confirm what the size pump they actually installed in the system, so I moved forward with the licensing of this permit. Regardless of the size pump that they have, they are limited to the amount allowed by the permit. The permit limits them to 0.04 cfs, 1.2 af and irrigation not to exceed ½ acre when this permit and water right 96-8688 are combined. This permit should be limited to 0.6 af as directed by Administrative Memorandum #22, and the overall water use should be limited to 0.04 cfs and 1.2 af when the two water rights are combined.

There is also a concern about the parcel data available to the Department and the county data for the parcel. The Department data shows the parcel straddling the section line between Section 2 and Section 1, but the county parcel data states the entire parcel is in Section 2. The area where this parcel is located is currently being reworked by the Department's GIS staff to update the section lines and parcel data. Therefore, I moved the tax lot over to where it is totally located within Section 2 to match the data from Bonner County.

All of the conditions on the permit will be carried forward to licensing. Condition 1 (X15) will be modified to state that the fish screen shall be maintained.

Have conditions of permit approval been met? ☒ 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	0.04 CFS	0.6 AF
<u>Totals:</u>		0.04 CFS	0.6 AF

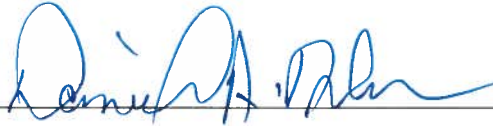
2. Recommended Amendments

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

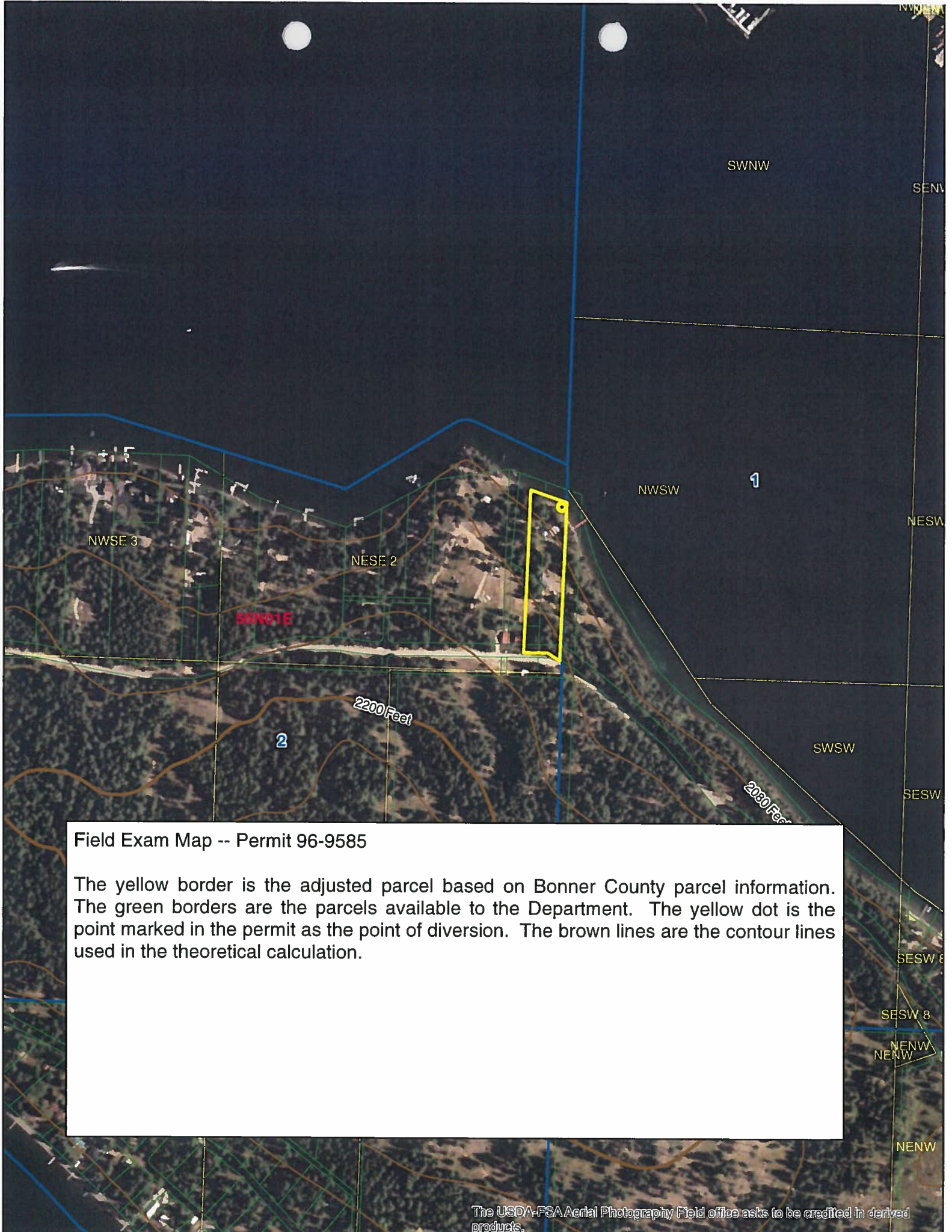
☐ Change P.U. as reflected above ☐ Add P.U. as reflected above ☐ None

Other: < >

J. AUTHENTICATION – DANIEL A. NELSON – STAFF HYDROLOGIST

Field Examiner's Name  Date 8-30-16

Reviewer _____ Date _____



Field Exam Map -- Permit 96-9585

The yellow border is the adjusted parcel based on Bonner County parcel information. The green borders are the parcels available to the Department. The yellow dot is the point marked in the permit as the point of diversion. The brown lines are the contour lines used in the theoretical calculation.

THEORETICAL HORSEPOWER EQUATION WORKSHEET (cjh 1/92)

Water Right No.: 96
 Reviewer: Dan Nelson
 Date of Review: 8/30/2016

P/D No.:

	Scenario 1	Scenario 2	Scenario 2
PUMP HORSEPOWER	5	5	5
BOOSTER HORSEPOWER	0	0	0
PUMPING LEVEL	80	80	80
DISCHARGE PRESSURE	40	50	60
RATE OF FLOW (cfs)	0.18	0.16	0.14
	80	71	63

Average
 0.17
 75.44

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 application for permti states that the irrigation pump is 5 Hp pump. The topo maps show that approximately 80 feet of lift is needed to pump the water from the lake to the ground being irrigated. I calculated the theoretical calculations using the estimates of between 40 and 60 psi. With these pressures, the pump should produce a minimum of 0.14 cfs. This is a concern, since the permit limits them to 0.04 cfs.