

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

A. GENERAL INFORMATIONPermit No: 78-12422

Exam Date: 10/24/2016

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: Albert S. and Holly Becker
- Owner of Record Correct? X Y N
- Address of Record Correct? Y N
- If No: Address

Tax lot data shows Albert S. and Holly B. Becker as the owners of the property.

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

4. **SOURCE** **TRIBUTARY**

Ground water

Method of Determination: Well Driller's Report, GIS and Tax Parcel 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
78-10295	Fourmile Creek	Irrigation and Stockwater	Decree

Comments: Water right 78-10295 is an irrigation and stockwater right from Fourmile Creek. The stockwater use for 78-10295 allows stock to drink from the ditch used for irrigation of a field in the northwest portion of the property. The stockwater use under 78-10295 is to allow the stock to drink from the ditch supplying the irrigation water. It appears as though the same stock are watered from both 78-10295 and this permit, but this permit supplies the majority of the stockwater up by the barn/stable and corral area. The irrigation of the landscape around the home is not irrigated by 78-10295, so this permit should include the irrigation component for the domestic use.

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 points of diversion in this 40 acre tract. The point of diversion for 78-10295 is some distance away from the property.

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
Well			SW	NE	6	19N	2E	B.M.	ADAMS
								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	
19N	2E	6			D														
19N	2E	6			S														
Total Acres =																			

Method of Determination: GIS and Tax Parcel 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
Well Pump	Unknown				

*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 CALCULATIONS X Additional Computation Sheets Attached

Measured Method:

The permit holder supplied enough information in the permit file and from the well drillers report that a theoretical calculation could be done for this permit to determine the capacity of the well. I performed 3 separate scenarios to attain the maximum possible diversion rate, and I have determined that the pump capacity is limited to 9.45 gpm or 0.02 cfs.

Domestic:**Theoretical Calculation = 0.02 cfs****Permit Allowed = 0.04 cfs****Recommend 0.02 cfs****Stockwater:****Theoretical Calculation = 0.02 cfs****Permit Allowed = 0.02 cfs****Recommend 0.02 cfs****Total Water Use:****Theoretical Calculation = 0.02 cfs****Permit Allowed = 0.06 cfs****Recommend 0.02 cfs**

Since the pump isn't capable of more than 0.02 cfs, I am recommending 0.02 cfs for the domestic use, 0.02 cfs for the stockwater use, and a total combined use of 0.02 cfs.

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:

Administrative Processing Memorandum #22 allows 1.2 af for domestic use for in-house use and up to ½ acre of yard irrigation. I am recommending this volume for the domestic use. Administrative Processing Memorandum #3 limits the volume for 0-10 head to 0.2 af. The permit holder stated that they have up to 10 horses, so this volume should be adequate. The total volume should be 1.4 af when the domestic and stockwater uses are combined. A diversion rate of 0.02 cfs should be able to supply over 14 af of water, so the pump capacity shouldn't be an issue.

G. PURPOSE OF USEIrrigation Y N # Stock 10 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 is for domestic use including in-house use and up to ½ acre of yard irrigation. From the aerial photos, the yard irrigation seems much less than ½ acre. There is also a stockwater component to this permit. The stockwater use is for 10 head of horses. There is a stable and corral by the home housing the horse and the drinking water is supplied by the well. There is also a 3.5 acre pasture west of the home and barn area that is irrigated from Fourmile Creek. The water right from Fourmile Creek does have a stockwater component that allows the horses to drink from the ditch while they are on pasture. The Fourmile Creek water is not piped to the Barn and Corral for stockwater purposes.

All of the conditions in the permit should be removed except for condition 3 (X01). I have decided to include condition 187 since this permit is in the Little Salmon River basin. The Little Salmon River is tributary to the Salmon River, which is a regulated stream. At this time the Little Salmon River is not being regulated, but I feel it is important to make the permit holder's aware that they can only irrigate up to a ½ acre.

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	0.02 CFS	1.2 AF
Stockwater	01/01 to 12/31	0.02 CFS	0.2 AF
<u>Totals:</u>		0.02 CFS	1.4 AF

2. Recommended Amendments

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

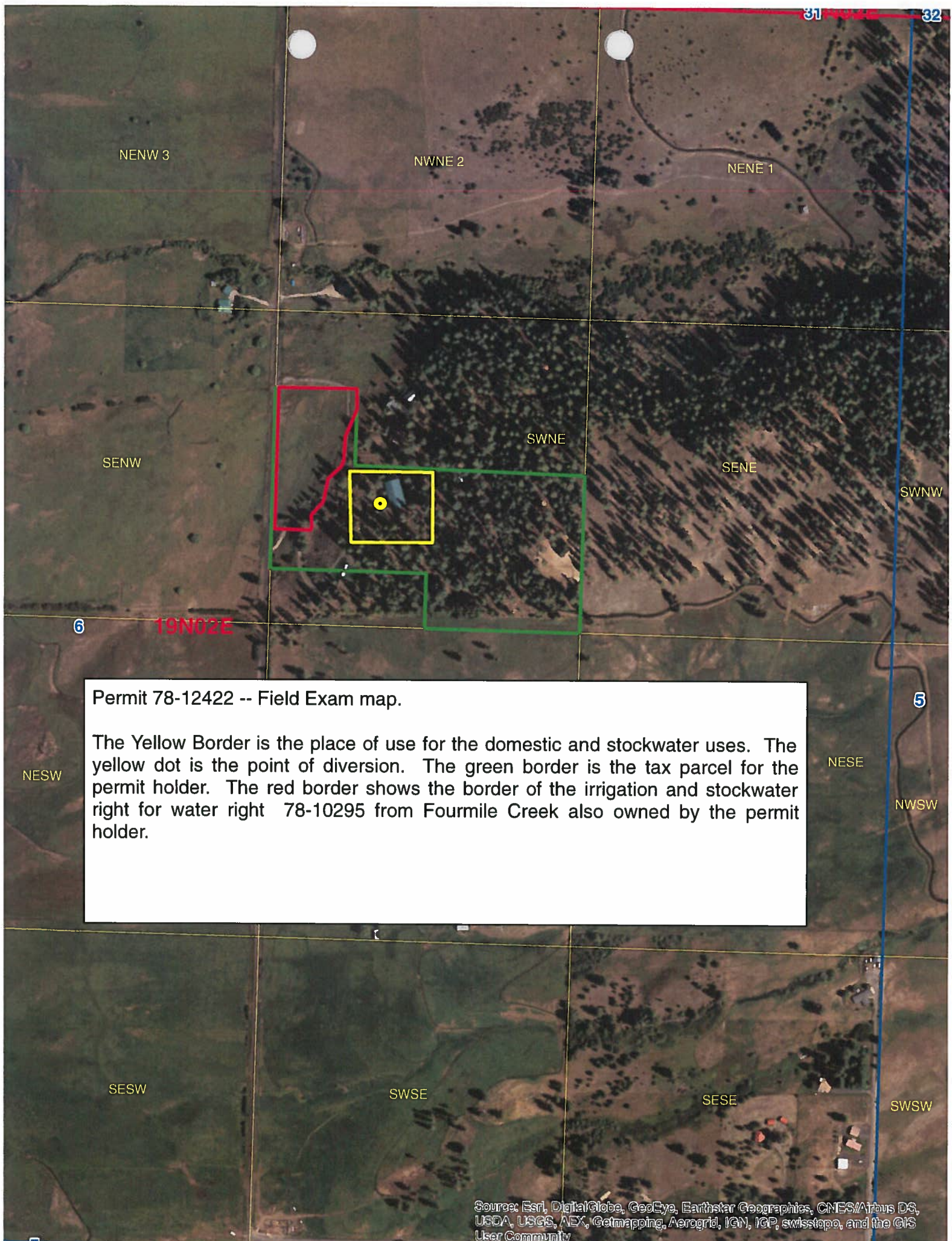
Change P.U. as reflected above Add P.U. as reflected above None

Other: < >

J. AUTHENTICATION – DANIEL A. NELSON – STAFF HYDROLOGIST

Field Examiner's Name Daniel A. Nelson Date 10-24-16

Reviewer _____ Date _____



THEORETICAL HORSEPOWER EQUATION WORKSHEET (cjh 1/92)

Water Right No.: 78-12422
 Reviewer: Dan Nelson
 Date of Review: 10/24/2016

P/D No.:

	Scenario 1	Scenario 2	Scenario 3	
PUMP HORSEPOWER	1	1	1	
BOOSTER HORSEPOWER	0	0	0	
PUMPING LEVEL	340	100	340	
DISCHARGE PRESSURE	50	50	25	
RATE OF FLOW (cfs)	0.01	0.03	0.02	Average
	6	13	7	0.02
				9.45

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 permit supplied information that describes a 1 Hp - 10 gpm pump being used for this system. The well drillers report shows a pumping water level of a 100 feet when diverting 15 + gpm for 1 + hours, and 340 ft pumping water level when diverting 25 gpm for 3 hrs. This is a standard domestic system, so I used an average of 50 psi to determine the flow rate. Using both drawdown levels, I calculated between 0.01 to 0.03 cfs. I also did a calculation using a very low pressure of 25 psi, and calculated a diversion rate of 0.02 cfs. The average diversion rate using all of the above scenarios was 0.02 cfs or 9.45 gpm, which matches the permit holder's claim that the well produces 10 gpm. The maximum capacity of this system should be limited to 0.02 cfs.