

[illegible]

PLACE OF USE: STOCKWATER

Twp	Rge	Sec	NE				NW				SW				SE				Totals
10S	16E	1	<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>	
										X									

PLACE OF USE: IRRIGATION

Twp	Rge	Sec	NE				NW				SW				SE				Totals
10S	16E	1	<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>	
										7.0				1.0					8.0

Total Acres: 8

Method of Determination: On-site determination and creation of a shapefile that corresponds with 2009 and 2011 aerial photography and verified the place of use is located as recorded. See attached map.

3. ☒ Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable.
- ☒ Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater.
- ☒ Aerial Photo Attached (required for irrigation of 10+ acres).
- ☒ Photo of Diversion and System Attached

4.

<u>Well or Diversion</u> <u>ID No.*</u>	<u>Motor Make</u>	<u>Hp</u>	<u>Motor Serial No.</u>	<u>Pump Make</u>	<u>Pump Serial No. or Discharge</u> <u>Size</u>
		Two 2 Hp	pumps		

D. FLOW MEASUREMENTS

1.

<u>Measurement</u> <u>Equipment</u>	<u>Type</u>	<u>Make</u>	<u>Model No.</u>	<u>Serial No.</u>	<u>Size</u>	<u>Calib. Date</u>
5 gallon Bucket						

2. Measurements:

Irrigation measurement:

Three separate measurements were taken by collecting flow from the irrigation line:

Time to fill 5 gal bucket: 8.65s; 8.73s and 8.62s for an approximate flow rate of 0.08 cfs.

Total Irrigation: 0.08 cfs

E. FLOW CALCULATIONS

_____ Additional Computation Sheets Attached

Measured Method: Theoretical yield:

$$Q = \frac{8.8 \times (Hp) \times (Eff)}{H}$$

Where: Hp = Two 2 Hp pumps

Eff = efficiency = 70% assumed

H = total head = pumping level = (2.31 x system pressure)

assume pumping level of 17.5 feet (per well drillers report)

assume system pressure = 40 psi

$$H = 17.5 + (40 \times 2.31) = 109.9$$

$$Q = \frac{8.8 \times 2(2.0) \times .70}{109.9} = 0.22 \text{ cfs}$$

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 8.0 \text{ acres} \times 4.0 \text{ AF} = 32.0 \text{ AF}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.08 \text{ cfs} \times 214 \text{ days} \times 1.9835 = 33.95 \text{ AF}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = \underline{32.0 \text{ AF}}$$

2. Volume Calculations for Other Uses:

Commercial Volume (per Jay Moyle):

Feed Prep: 50 gpd for 11 months & 150 gpd for 1 month (may 15 to June 15) for newborns:

$$[(50 \text{ gpd} \times 334 \text{ days}) + (150 \text{ gpd} \times 31 \text{ days})] / 325,850 \text{ gallons} = .065 \text{ AF}$$

Cleanup: Approximately 30 minutes daily through a hose spigot measured at 12 gpm = 360 gpd

$$(360 \text{ gpd} \times 365 \text{ days}) / 325,850 = 0.4 \text{ AF}$$

Refrigeration unit uses 15 to 20 gpm and runs 24/7, 365 days a year:

$$(20 \text{ gpm} / 448.83) \times 365 \text{ days} \times 1.9835 = 32.26 \text{ AF}$$

$$\text{Total} : 0.065 \text{ AF} + 0.4 \text{ AF} = 32.26 \text{ AF} = \underline{32.7 \text{ AF Commercial}}$$

$$\text{Stockwater: } 0.20 \text{ cfs} \times 365 \times 1.9835 = \underline{144.79 \text{ AF Stockwater}}$$

G. NARRATIVE/REMARKS/COMMENTS

Permit 47-8425 was permitted for 0.08 cfs domestic; 0.20 cfs stockwater; 0.20 cfs commercial and 0.16 irrigation. Application for permit was submitted 09/03/1998 and proof of beneficial use was submitted on 05/12/1999.

Application was reviewed for development prior to commencement of the SRBA in November of 1987 and was found to be a pre November of 1987 development. An additional memo in the file discusses this permits overlap with two domestic claims, 47-11090 and 47-11092, that actually led to this filing as Mr. Moyle was concerned about having enough water to operate his mink farm.

When I conducted the field exam in November of 2012, I found two domestic residences on two separate taxlots with no additional domestic beneficial use beyond what was already licensed under water rights 47-11090 and 47-11092. Therefore, the domestic use on the permit has been dropped from the license.

The majority of water pumped from the two wells is diverted to stockwater use for the 18,000 mink and is run 24 hours a day, year round. A constant flow of water is required in the troughs as mink will only drink from a flowing water source. The water is run from the wells to a pressure tank and then diverted to: the troughs in the mink barns (4 ea in 19 barns); a cattle trough just north of the mink barns; a refrigeration unit; two residences as needed; and two buildings used in the commercial operation as needed. Except for water used for domestic purposes at the residences and the cattle troughs, all of the water passes through the system and is discharged into Rock Creek through two 4" drain lines. One drain line open discharges at the top of rock creek canyon and the other carries the water down into the canyon where it can either be diverted for irrigation or discharged directly into Rock Creek.

On the day of the exam I measured the water flow from the two drain lines using a 5 gallon bucket and stop watch. The measurements were taken with the wells running at full capacity; all of the water was shunted through the mink troughs and the refrigeration unit and then discharged out the drain lines. Due to substantial leakage of water from the troughs (see figure 1), it was impossible to get an accurate measurement other than for the irrigation component which is always diverted from the 4" drain line that discharges directly into Rock Creek. Since the beneficial use examination rules only require a direct measurement for permits exceeding 0.24 cfs for uses other than irrigation and storage, and getting an accurate flow measurement for stockwater and commercial uses proved to be impossible, I recommend licensing the permitted amounts for these two for Stockwater and commercial uses.

Mr. Moyle gave me a tour of the specific 8 acres that are irrigated in the canyon on his ATV. On the north end of his property in Rock Creek Canyon, there is a small orchard on both sides of the creek that is irrigated. He also runs hand lines on grounds adjacent to the west side of the creek where some of his cattle graze. I inquired about other water rights potentially used on the same grounds and he indicated that no surface water rights or canal shares were utilized for irrigation on the same grounds.

Overlap review indicates there is overlap of stockwater use with rights 47-11090 and 47-11092. Water is diverted from the same wells and is appurtenant to the same grounds as this permit. Since the 144.79 AF estimated for Stockwater represents total yearly production from the wells and the wells serve all three water rights, a condition will be placed on the license limiting the volume for all three rights when combined to 144.79 AFA. Irrigation water rights 47-17156 and 47-17157 indicate potential overlap in the NESW1/4, there is no actual overlap within the places of use.

Recommend licensing Commercial at 0.20 cfs and 32.7 AF; Stockwater at 0.20 cfs and 144.8 AF; Irrigation at 0.080 cfs and 32.0 AF; Total combined diversion rate of 0.20 cfs and a volume of 144.8 AF.

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

H. RECOMMENDATIONS

1. Recommended Amounts

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
COMMERCIAL	01/01 to 12/31	0.200 CFS	32.7 AF
STOCKWATER	01/01 to 12/31	0.200 CFS	144.8 AF
IRRIGATION	04/01 to 10/31	0.080 CFS	32.0 AF
<u>Totals:</u>		0.200 CFS	144.8 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 ☐ Other

I. AUTHENTICATION

Field Examiner's Name Bill Molk Date 8-28-13

Reviewer ASB Hovick Date 10/9/13



Figure 1: Trough in mink barn



Figure 2: Supply line diverting water into trough



Figure 3: Typical water supply line to trough



Figure 4: Mink

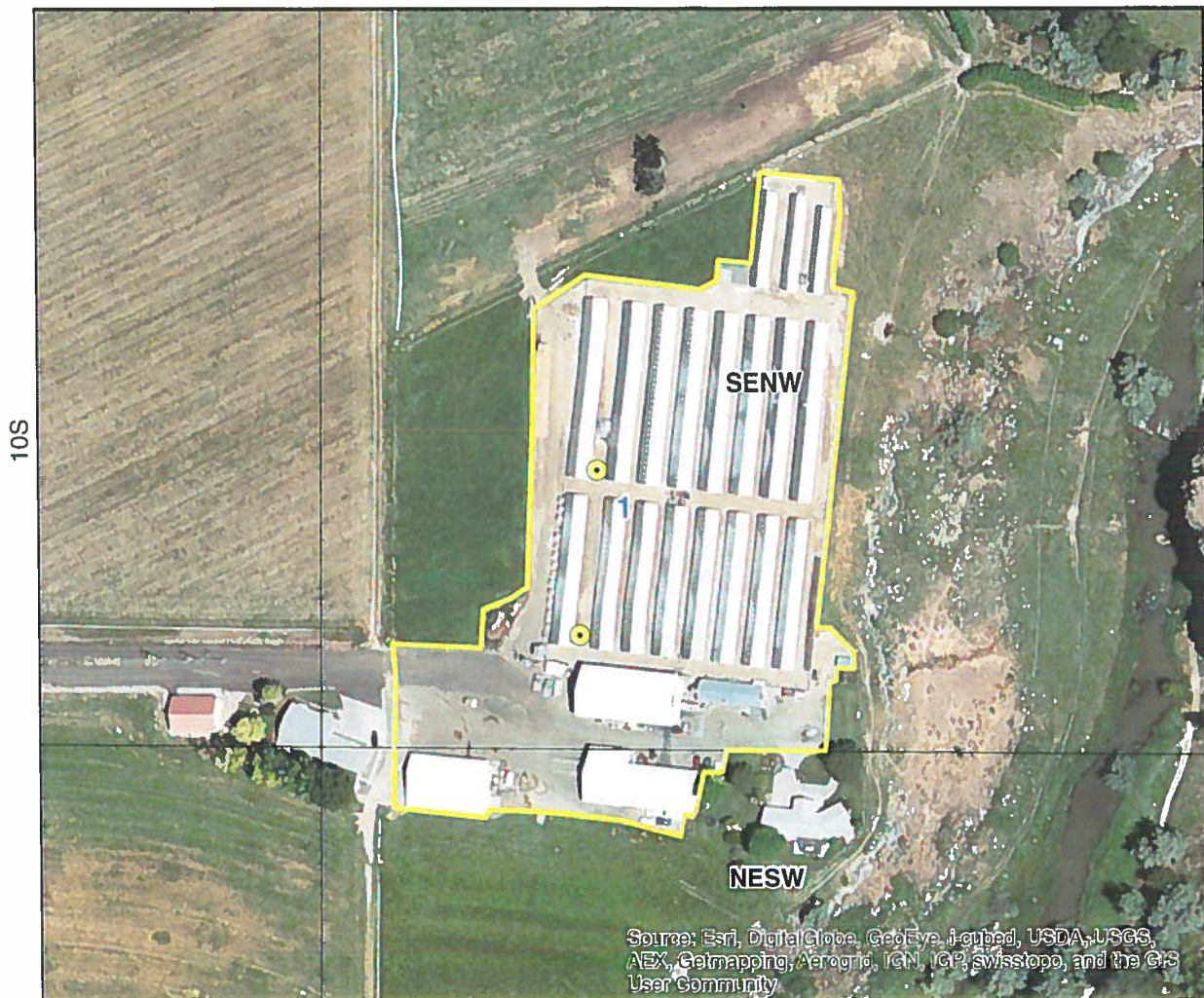
System Diagram 47-8425



State of Idaho
Department of Water Resources
Attachment To Water Right License
47-8425

This map depicts the COMMERCIAL 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.

16E



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

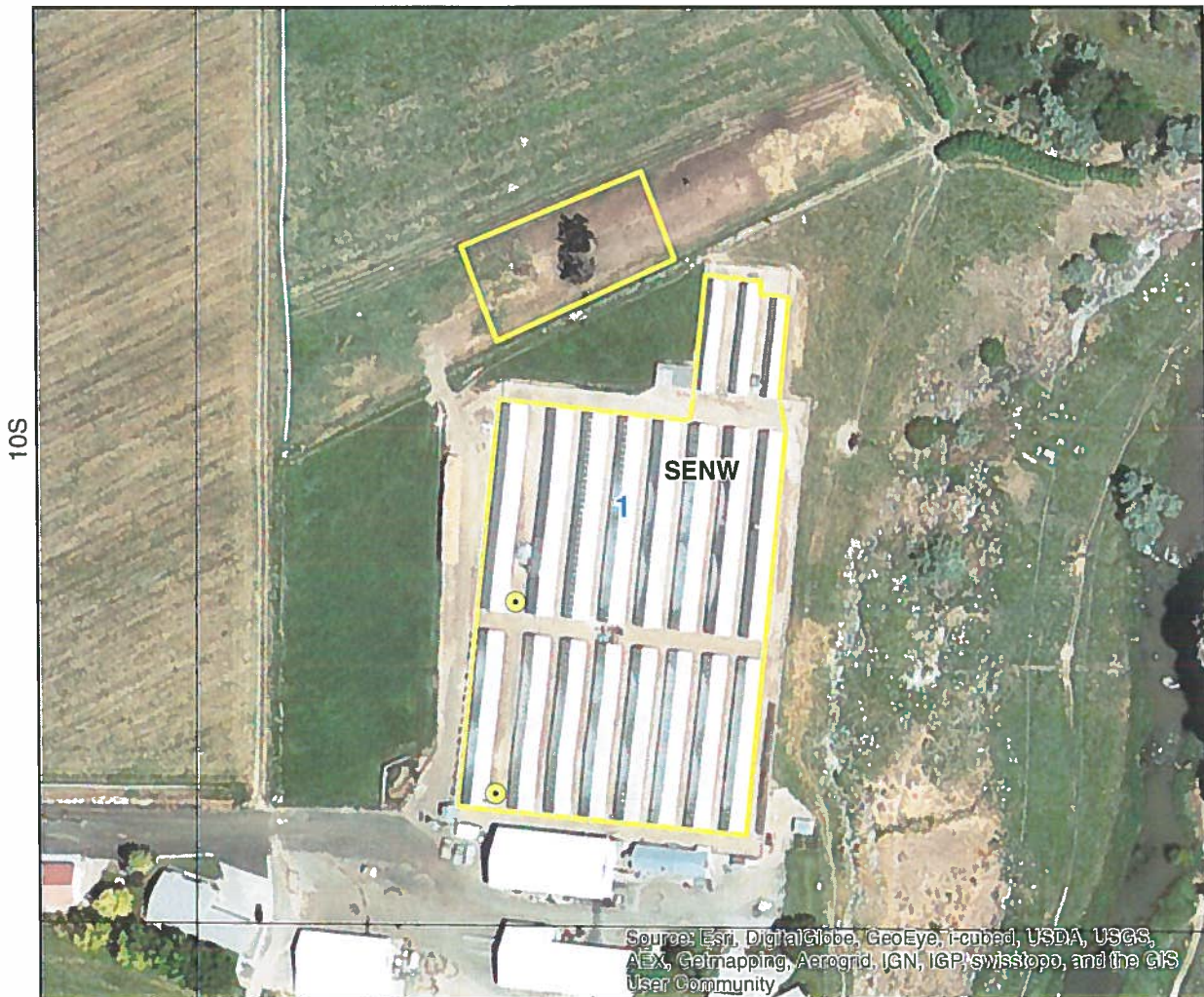
0 0.0225 0.045 0.09 Miles



State of Idaho
Department of Water Resources
Attachment To Water Right License
47-8425

This map depicts the STOCKWATER 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.

16E



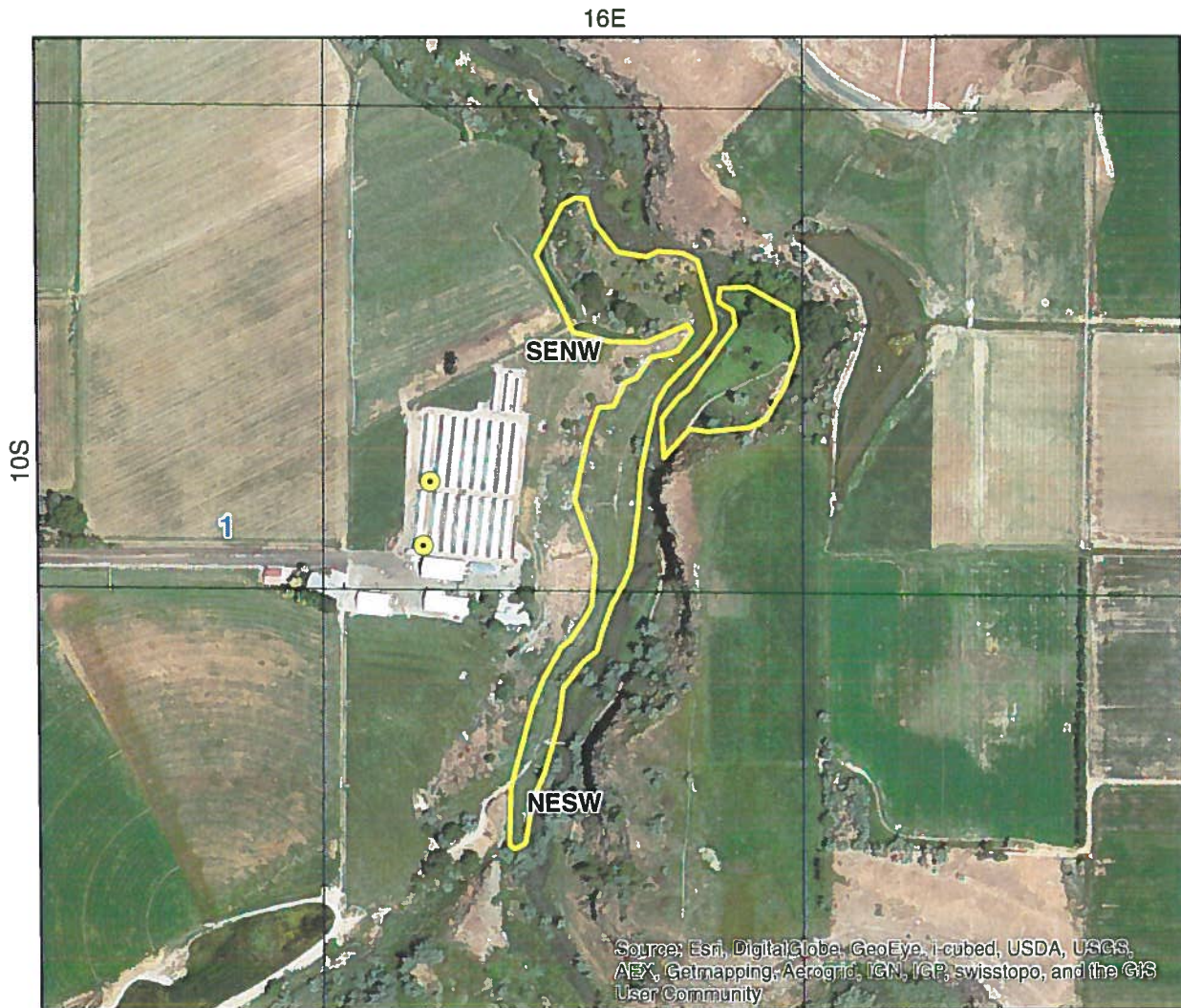
-  Point of Diversion
-  Place Of Use Boundary
-  Townships
-  PLS Sections
-  Quarter Quarters

0 0.02 0.04 0.08 Miles



State of Idaho
Department of Water Resources
Attachment To Water Right License
47-8425

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 0.05 0.1 0.2 Miles

