

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 63-31147

Exam Date: 6/16/2016

1. Current Owner:

LIDA R FRY HOMERS HILL TRUST TRUSTEE 4122 HOMER RD EAGLE ID 83616 (208)939-9267

PHILIP N FRY HOMERS HILL TRUST TRUSTEE 4122 HOMER RD EAGLE ID 83616 (208)939-9267

2. Accompanied by: Philip and Lida Fry

Phone No: 208-939-9267

Address: 4122 W. Homer Rd. Eagle ID 83616

Relationship to Permit Holder: owners

3. SOURCE: GROUND WATER

B. OVERLAP REVIEW

1. Other water rights with the same place of use: There are two applications (63-33876 and 63-33878) for the City of Eagle for municipal uses that do overlap the POU of the permit.

2. Other water rights with the same point-of-diversion: There are no other water rights sharing the same POD

C. DIVERSION AND DELIVERY SYSTEM1. LOCATION OF POINT(S) OF DIVERSION:

GROUND WATER SE¼SW¼ Sec. 25, Twp 05N, Rge 01W, B.M. ADA County

Method of Determination: Visual and downloaded the GPS location taken from exam

2.

PLACE OF 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	
05N	01W	25												3.8					3.8

Total Acres: 3.8

Method of Determination:

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.

Well or Diversion ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
297602		1.5*		Sta-Rite*	1 ¼"

* Information for pump was obtained from quote permit holder received prior to the installation of the pump in the well. This information was unavailable and was not confirmed during the field exam.

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
Pitot tube						

2. Measurements: A pitot tube was used to check the pressure of the sprinklers during operation. Using the measured pressure, sprinkler type, model, and nozzle size, a flow rate was determined using the manufacturer specifications to be approximately 16 GPM for the largest zone of irrigation.

E. FLOW CALCULATIONS

Measured Method: Pressure check at sprinkler heads

Additional Computation Sheets
Attached

Permit allows – 0.14 cfs

Calculated sprinkler discharge from field exam - 0.03 cfs

Theoretical pump calculation d – 0.03 cfs

Recommend 0.03 cfs

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 3.8 \text{ ac} \times 4.5 = 17.1 \text{ AF}$$

$$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.03 \text{ cfs} \times 260 \times 1.9835 = 15.5 \text{ AF}$$

$$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = 15.5 \text{ AF}$$

2. Volume Calculations for Other Uses: N/A

G. NARRATIVE/REMARKS/COMMENTS

The irrigation system for permit 63-31147 has a source of ground water from a well located behind the Fry residence. Water is pumped from the well with a submersible pump and the well also serves as the source of water for the domestic needs of the home. The well was tagged with tag # A0019159. There is currently no recorded domestic water right associated with the home. Water is pumped from the well and is piped into a 5 zone irrigation system that irrigates around the perimeter of the home. This irrigation system is primarily used to water pasture around the house for various animals and create a defensible green area around the home for wildfires. The Frys mentioned that the irrigation system was helpful in saving their home when a rangeland wildfire came within close proximity to their home a few years ago.

The irrigation system consisted of five zones of buried irrigation from a six zone controller. The sprinkler heads used for the system are Nelson 6000 series with nozzles #9. A pitot tube was used to determine the pressure at the sprinkler heads to be 20 PSI. The permit holder shared the sprinkler head specifications and that information was cross referenced with Nelson Irrigation. The flow rate was determined by using the flow charts from the sprinklers and the measured pressure. Four sprinklers heads discharging approximately 4 GPM would conclude that the irrigation system is applying approximately 16 GPM. We asked Mr. Fry to run his largest zone of irrigation and he stated that all of the zones were designed to the approximate same size. The Fry's also stated that they place temporary sprinklers around the property and move them around depending upon conditions.

The submersible pump specifications used in the well were painted over on the control panel in the residence. We were shown an estimate to install the pump in the well (picture is included in photos from the exam) and we were told the pump was 1.5 HP. A drillers report shows the pumping level of 150' and the pump installation estimate the pump would be set at 180'. The estimate for the pump stated the pump would produce 15 GPM at 50 PSI from the 150' pumping level. A theoretical calculation was done of the pump and confirmed a discharge rate of 0.03 cfs producing 15.6 gpm.

Permit 63-31147 originally listed 14 acres of irrigation with two POD's however the Frys did not fully develop the permit. Only one POD was developed and only 3.8 acres were irrigated during the development of the permit. Proof of Beneficial Use was submitted for 5 acres however the footprint of the buildings, corrals, and driveway were subtracted from the area the Frys stated were irrigated during the development of the permit.

Conditions

Condition 26A, 046, X27, 004, and the two points of diversion condition should be removed. Condition 121 should be carried over to licensing. Condition R69 should be added as a general irrigation overlap condition.

Have conditions of permit approval been met? X Yes No

H. RECOMMENDATIONS

1. Recommended Amounts

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
IRRIGATION	03/01 to 11/15	0.03 CFS	15.5 AF
	<u>Totals:</u>	0.03 CFS	

2. Recommended Amendments

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

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

I. AUTHENTICATION

Field Examiner's Name Steven Visosky Date 7/1/16

Reviewer _____ Date _____

Water Right - 63-31147 Photographer - Steven Visosky Exam date - 6/16/2016
*Please note that all pictures were taken on 6/16/16, not 6/15/16 as indicated on photos



A picture of the residence that the irrigation surrounds for permit 63-31147 looking east



A picture of the yard and fenced in pasture looking south. One of the irrigation zones examined during our visit was right (west) of the fence in the picture.

Water Right - 63-31147

Photographer - Steven Visosky

Exam date - 6/16/2016



A picture of one of the pastures that had irrigation examined during the visit. The picture is taken looking northeast.



Looking southwest

Water Right - 63-31147

Photographer - Steven Visosky

Exam date - 6/16/2016



Looking east
between the
house and the
road.



Looking north
towards the
house

Water Right - 63-31147

Photographer - Steven Visosky

Exam date - 6/16/2016



Looking south east
from the house



Looking northeast

Water Right - 63-31147

Photographer - Steven Visosky

Exam date - 6/16/2016



The well head for the well that supplies the irrigation water for this permit and the domestic water for the house.

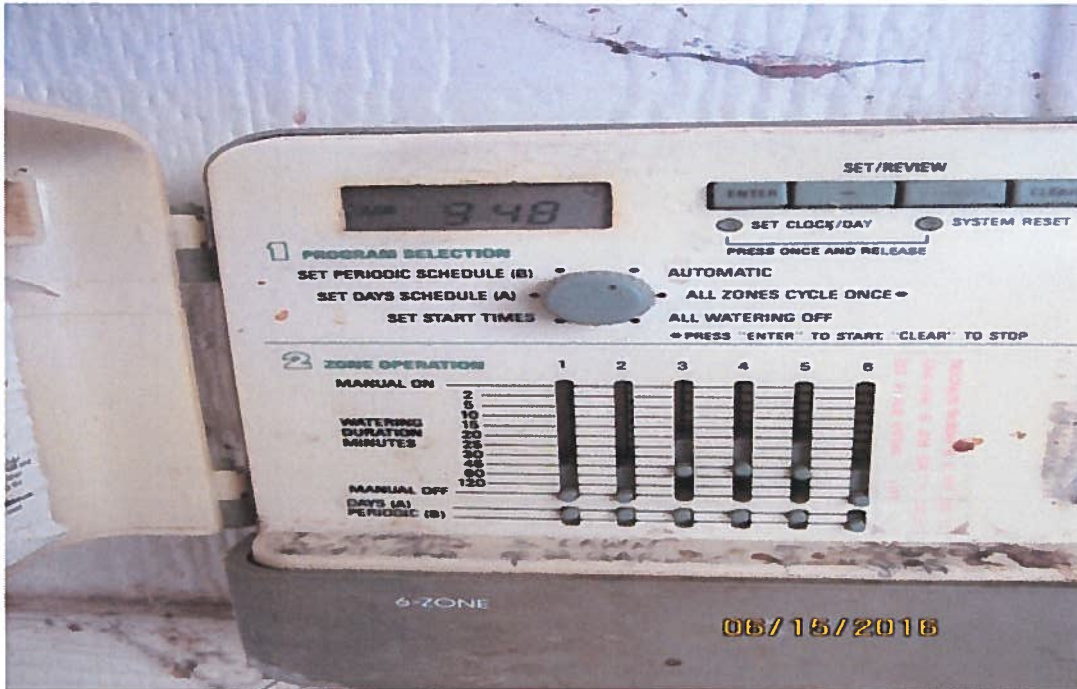


The well tag and cocoon of a praying mantis that I was unaware of when installing the well tag.

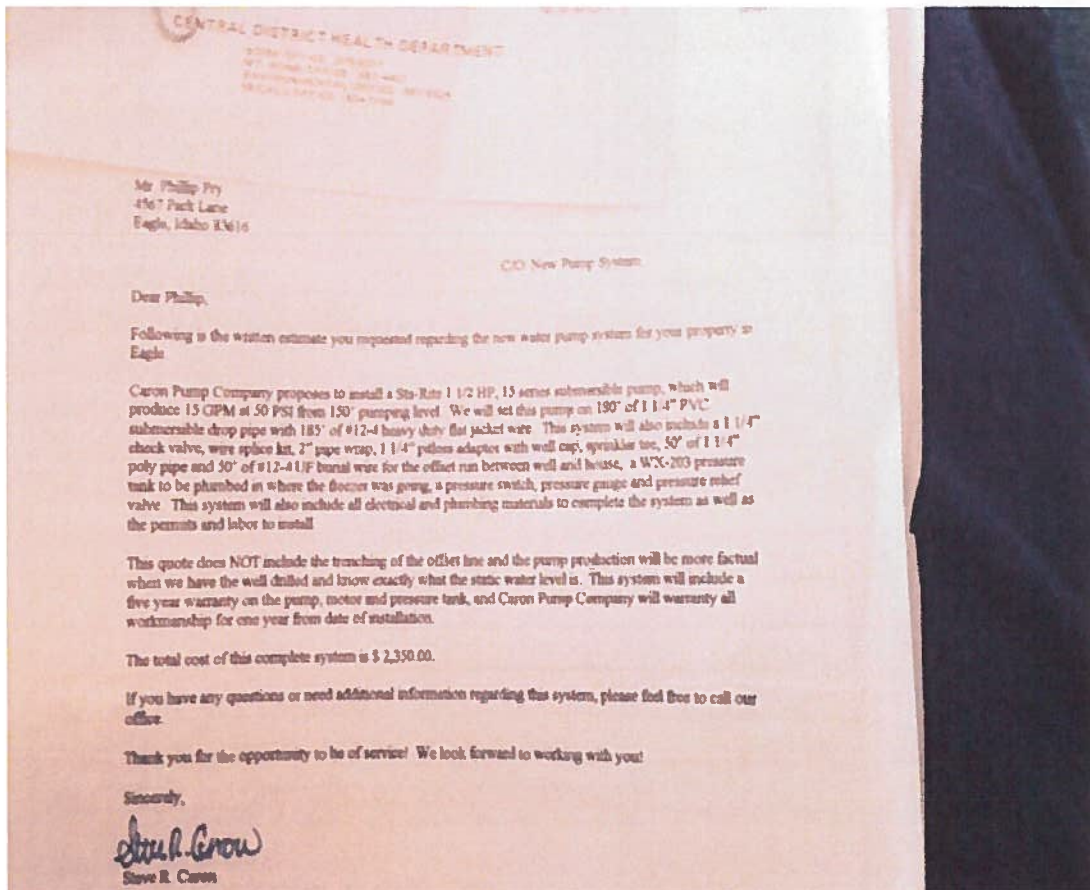
Water Right - 63-31147

Photographer - Steven Visosky

Exam date - 6/16/2016



The irrigation system controller

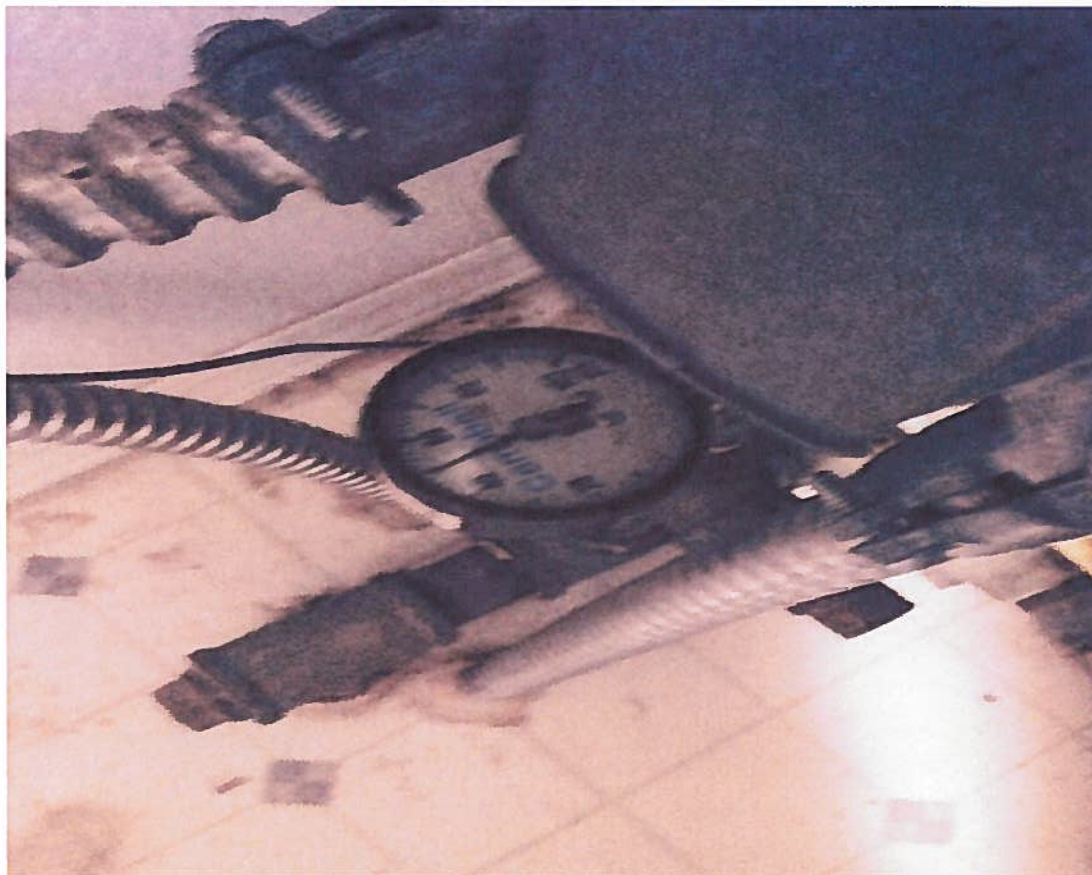


The estimate of the pump installation

Water Right - 63-31147

Photographer - Steven Visosky

Exam date - 6/16/2016



The pressure gauge on the domestic system inside the house reading 50 PSI which is also tied into the irrigation system.

Site map of irrigation system and place of use for 63-31147.

Well location

Zone of irrigation used to determine pressure

SESW

25

Place of Use for permit 63-31147

05N01W

Location of irrigation controller

Zone of irrigation confirming sprinkler head make, model, and nozzle size.

W Homer Rd

NENW

36

N Park Ln

NWNE





Google earth

feet 300
meters 100



Aerial imagery of the Place of Use
for Permit 63-31147

Steven Visosky 6-30-2016

THEORETICAL HORSEPOWER EQUATION WORKSHEET (cjh 1/92)

Water Right No.: 63-31147
 Reviewer: Steven Visosky
 Date of Review: 6/21/2016

P/D No.:	Senerio 1	Senerio 2	Senerio 3	
PUMP HORSEPOWER	1.5	1.5	1.5	
BOOSTER HORSEPOWER	0	0	0	
PUMPING LEVEL	150	150	150	
DISCHARGE PRESSURE	45	50	55	
RATE OF FLOW (cfs)	0.04	0.03	0.03	AVE
(gpm)	16.3	15.6	15.0	0.03
				15.64

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: Data was collected on 6/16/2016 from a field exam showing 50 PSI from a pressure gauge in the residence of the permit holder. I think it is reasonable to support the 0.03 cfs recommended by the field examiner.