

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 57-11697
Exam Date: 6/3/2019

1. Current Owner:
WAYNE L MORRIS 16 E MARY DR PRAIRIE ID 83647-8426
MARY JOHNSON 16 E MARY DR PRAIRIE ID 83647-8426
2. Accompanied by:
Phone No:
Address:
Relationship to permit Holder:

3. **SOURCE:**
GROUND WATER

Method of Determination: Visual Inspection

B. OVERLAP REVIEW

1. Other water rights with the same place of use: NO Overlap

Water Right No.	Source	Purpose of Use	Basis

Comments:

N/A

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

Water Right No.	Source	Purpose of Use	Basis

Comments:

N/A

C. DIVERSION AND DELIVERY SYSTEM

1. **LOCATION OF POINT(S) OF DIVERSION:**
GROUND WATER SW¼ NW¼, Sec. 15, Twp 02S, Rge 02W, B.M. OWYHEE County

Method of Determination:

PLACE OF USE: IRRIGATION

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
02S	02W	15							2.4										2.4

Total Acres: 2.4

Method of Determination: Visual inspection and GIS/Google Earth aerial analysis.

3.

X Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable.

X Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater.

N/A Aerial Photo Attached (required for irrigation of 10+ acres).

X 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
D0047512	Franklin Electric	5	2821139310		

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
None						

2. Measurements: 28 psi at sprinkler nozzles
5 hp pump
Pump 340 below surface

E. FLOW CALCULATIONS

X Additional Computation Sheets Attached

Measured Method: Theoretical

Two pressure tests were conducted on the sprinkler nozzles. One test was conducted with all three sprinklers running and one with just the two Senninger 70 sprinklers running. With all three sprinklers running, the pressure was very low (17-18 psi on the Weather Tec and 1-2 psi on the Senninger sprinklers) and was insufficient to allow proper function of the sprinklers. The second test of just the two Senningers returned 28 psi at all nozzles and allowed those two sprinklers to function properly. Because this is the way the permit holder has been operating, and because there is not enough pressure for all three sprinklers to function at once, license recommendations are based on calculations from the two sprinklers running at 28 psi. The nozzle flow rate calculator (attached) was used to calculate flow rate of the system. These calculations equaled a rate 0.05 cfs. Because licensing recommendation is for 2.4 acres, according to application processing memo 17, these acres would qualify for a rate up to 0.03 cfs per acre or 0.07 cfs however, because the system quickly loses pressure and is unable to function above 0.05 cfs, the recommended rate is 0.05 cfs.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 2.4 \text{ acres} \times 4.5 \text{ afa} = 10.8 \text{ afa}$$

$$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.05 \text{ cfs} \times 260 \text{ days} \times 1.9835 = 25.8 \text{ afa}$$

$$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = V_{IR} \text{ 10.8 afa}$$

2. Volume Calculations for Other Uses: N/A

Johnson/Morris 57-116697

Image date 7/18/2018

Legend



System Diagram 57-11697



Permit #57-11697 -- Measurment With Just Senniger 70 Sprinklers Running

Sprinkler Nozzle Flow Rate Calculator

[READ ME](#)

Step 1 - Specify 1st Nozzle Type Configuration

Select Sprinkler Coefficient, C

☐ User Defined ☒ Theoretical Maximum

Input Nozzle Pressure:

28

psi

Input Nozzle Diameter:

0.2500

in

Input Number of Type 1 Sprinkler Nozzles:

2

Step 2 - Specify 2nd Nozzle Type Configuration

Select Sprinkler Coefficient, C

☐ User Defined ☒ Theoretical Maximum

Input Nozzle Pressure:

28

psi

Input Nozzle Diameter:

0.1250

in

Input Number of Type 2 Sprinkler Nozzles:

1

Step 3 - Specify 3rd Nozzle Type Configuration

Select Sprinkler Coefficient, C

☐ User Defined ☒ Theoretical Maximum

Input Nozzle Pressure:

psi

Input Nozzle Diameter:

in

Input Number of Type 3 Sprinkler Nozzles:

Flow Rate Summary

Type 1 Nozzle(s): 0.044

Type 2 Nozzle(s): 0.005

Type 3 Nozzle(s): 0.000

Combined: 0.049

cfs

57-11697 -- Senniger 70 Measurements With All 3 Sprinklers Running

Sprinkler Nozzle Flow Rate Calculator

[READ ME](#)

Step 1 - Specify 1st Nozzle Type Configuration

Select Sprinkler Coefficient, C

☐ User Defined ☒ Theoretical Maximum

Input Nozzle Pressure:

2

psi

Input Nozzle Diameter:

0.2500

in

Input Number of Type 1 Sprinkler Nozzles:

2

Step 2 - Specify 2nd Nozzle Type Configuration

Select Sprinkler Coefficient, C

☐ User Defined ☒ Theoretical Maximum

Input Nozzle Pressure:

1

psi

Input Nozzle Diameter:

0.1250

in

Input Number of Type 2 Sprinkler Nozzles:

1

Step 3 - Specify 3rd Nozzle Type Configuration

Select Sprinkler Coefficient, C

☐ User Defined ☒ Theoretical Maximum

Input Nozzle Pressure:

psi

Input Nozzle Diameter:

in

Input Number of Type 3 Sprinkler Nozzles:

Flow Rate Summary

Type 1 Nozzle(s): 0.012

Type 2 Nozzle(s): 0.001

Type 3 Nozzle(s): 0.000

Combined: 0.013

cfs

57-11697 -- Weather Tec Measurements With All 3 Sprinklers Running

Sprinkler Nozzle Flow Rate Calculator

[READ ME](#)

Step 1 - Specify 1st Nozzle Type Configuration

Select Sprinkler Coefficient, C

☐ User Defined ☒ Theoretical Maximum

Input Nozzle Pressure:

18

Input Nozzle Diameter:

0.5625

Input Number of Type 1 Sprinkler Nozzles:

1

Step 2 - Specify 2nd Nozzle Type Configuration

Select Sprinkler Coefficient, C

☐ User Defined ☒ Theoretical Maximum

Input Nozzle Pressure:

17

Input Nozzle Diameter:

0.1250

Input Number of Type 2 Sprinkler Nozzles:

1

Step 3 - Specify 3rd Nozzle Type Configuration

Select Sprinkler Coefficient, C

☐ User Defined ☐ Theoretical Maximum

Input Nozzle Pressure:

Input Nozzle Diameter:

Input Number of Type 3 Sprinkler Nozzles:

Flow Rate Summary

Type 1 Nozzle(s): 0.089

Type 2 Nozzle(s): 0.004

Type 3 Nozzle(s): 0.000

Combined: 0.094

Senninger 70 results

Flow Rate Summary

Type 1 Nozzle(s): 0.012

Type 2 Nozzle(s): 0.001

Combined: 0.013

Total 0.10637

Flow Rate With All 3 Sprinklers Running

PHOTOGRAPHER AND DATE OF PHOTOS SCOTT STORMS 6/3/2019

FILE NUMBER 57-11697



Figure 1. Point of Diversion, well head.



Figure 2. POD well tag



Figure 3. Inside of pump house showing pump controls and pressure tank.



Figure 4. Pipe manifold with one sprinkler and line leading to the two primary sprinklers.



Figure 5. One of the two primary sprinklers used for irrigation.



Figure 6. Panoramic view of the place of use (POU).



Figure 7. View of row crop (pasture grass) planting as evidence of irrigation.